Understanding Local Knowledge – an Interdisciplinary Framework in the Context of Sustainable Development

Dissertation
zur Erlangung der Würde
einer Doktorin der Philosophie
vorgelegt
der Philosophisch-Historischen Fakultät
der Universität Basel von
Scherrer, Yvonne
aus Gams, SG

Basel, 2022
Buchbinderei Beat Gschwind

Genehmigt von der Philosophisch-Historischen Fakultät der Universität Basel, auf Antrag von Prof. Dr. Paul Burger, Prof. Dr. Michael von Hauff und Prof. Dr. Michael Heinrich.

Basel, den 22. September 2020

Der Dekan Prof. Dr. Ralph Ubl

“Why is it that scientists are coming to the rain forest to study ants and plants, while we are here with nobody worrying about us?”

Cacique mayor from an Amazon community
in a conversation with ethnobotanist
Ina Vandebroek in 2011

a. Abstract

This dissertation undertakes an in-depth analysis of the notion of ‘local knowledge’ on which basis it develops a structured, comprehensive, interdisciplinary conceptual-analytical framework on ‘understanding local knowledge’. This framework goes not only beyond typically encountered simplifications and the often seen prioritization of the factual perspective or the ecological dimension, but is also compatible with principles of sustainable development.

Local knowledge – understood in this research as an overarching term for forms of knowledge such as e.g. traditional, indigenous, traditional ecological, folk or farmers’ knowledge – is locally adapted knowledge developed over time by people living in close interaction with their natural surroundings. Such knowledge proves vital in a myriad of ways and on various societal levels: Not only does it sustain local communities in their livelihoods and, thus, survival, it also is at the base of what is commonly called ‘ecosystem management’. These services are carried out by local communities at local and regional scales, thereby contributing to advancing environmental conservation and sustainable development. Lastly, with respect to the global level, local knowledge also acts as a vast, highly diversified and locally adapted knowledge repository with many current and potential future applications such as e.g. the development or introduction of novel materials, agricultural products or pharmaceuticals.

Regrettably, despite its vital multi-functionality and -valency and a certain global recognition through the official integration of local knowledge into the ‘Convention of Biological Diversity’ at the Rio Earth Summit in 1992, local knowledge continues to experience serious marginalization, devaluation and, as a result, an ongoing and almost worldwide erosion and decline.

Reasons for this development are to be located not only in real-world power dynamics and vested interests at all societal levels, but also in a limited understanding of the actual character of local knowledge. The latter often stems from a lack of insight by the generally highly specialized Western actors into local knowledge’s complexity and the influence of their own biases and constraints on how a given local knowledge form is perceived and made sense of – biases and constraints rooted in their disciplinary, organizational, structural and personal backgrounds.

This research contributes to tackling the latter issue by developing a multidisciplinary-based framework approach to ‘understanding local knowledge’. The heuristic instrument is designed generically such that it is applicable to a broad range of local knowledge forms in rural and urban areas in industrializing and industrialized countries and can be applied in the context of research as much as conservation and development cooperation.

Methodically, the dissertation is based on extended literature analyses across sociology, philosophy, anthropology, geography, the ethno-sciences and development, cultural and area studies in order to conceptualize and theoretically inform the notions formative for ‘understanding local knowledge’ as broadly and inclusively as possible, namely ‘knowledge’, ‘locality’ and, to a lesser extent, ‘understanding’. In this process, a total of 16 theory-based generic dimensions characterizing and specifying the three notions are identified. In a second step, these 16 dimensions are aggregated in a conceptual-analytical framework whereby I follow the methodology outlined by Jabareen, Dowding and Stanley.

This dissertation’s contributions concern various levels. *First*, on an analytical level, the heuristic developed facilitates the understanding of principally any given form of local knowledge through a theory-based minimal set of interconnected key dimensions and questions. *Second*, in view of its normative foundation in sustainable development, the framework provides interested parties with a differentiated way to gain comprehensive insights into local contexts as basis for collaboratively determining sustainable conservation, management and/or development strategies. *Third*, its structured and systematic approach facilitates comparative studies and *forth*, its interdisciplinary foundation is expected to promote the uptake of scientific findings across disciplinary boundaries, counteracting tendencies of disciplinary isolation. *Fifth*, by including the aspect of ‘understanding’, the framework also allows for a critical reflection on the contingency of one’s own understanding on pre-existing biases and constraints, thus also taking account of challenges related to understanding across epistemologies.

Approaching the topic of ‘understanding local knowledge’ with an instrument specifically developed to analyze local knowledge forms comprehensively and systematically promises to provide a more complex, transparent and at the same time balanced notion of a given local knowledge form that thus contributes to facilitating collaboration, be it in research, conservation or development cooperation.

b. Preface and acknowledgments

There are many people and institutions I would like to thank for supporting me in my effort to complete this dissertation over the numerous years of its development and across its surprisingly numerous stages and metamorphoses. They all contributed in their specific ways to the success of this adventurous journey.

First, I would like to extend my thanks to my main supervisor Professor Paul Burger from Sustainability Research at Basel University, Switzerland, for his openness to support the project in the first place and engage in the analysis of the topic of 'local knowledge' from a sustainability perspective. This greatly contributed to relating my research interest to the broader societal discourse of sustainable development and sharpened the overall argument. The many in-depth discussions, his analytical perspective on the topic, his confidence in my organizational abilities to handle an extra-occupational PhD and the continuous overall support were essential for the success of this project. I enjoyed our discussions and appreciated his comments on various stages of the work. Moreover, I also greatly benefited from the discussions and feedbacks in the frame of the research colloquiums on sustainability science.

Special thanks also go to my second supervisor, Professor Michael von Hauff from the Technical University Kaiserslautern, Germany, for supporting me in pursuing my research interest at an early point of the project and for kindly inviting me for an 18-month research stay at his Research Institute for Economic Policy and International Economic Relations. In view of this PhD being an extra-occupational undertaking, the opportunity for an (almost) full immersion at the onset of the project was crucial for its eventual success. I could greatly benefit from the inspiring discussions with him on the potential of local knowledge for advancing the development of rural areas in industrializing countries, in addition to appreciating the exchange with and feedback from colleagues at the research institute – colleagues that soon turned into extraordinary friends, which made the stay even more inspiring and enjoyable.

Lastly, many thanks go to my third supervisor, Professor Michael Heinrich from the School of Pharmacy, University City of London. I am very grateful for his spontaneous willingness to supervise a social-science-based project that appeared out of nowhere, his readiness to engage with the interdisciplinary discussions and the shared interest in building bridges across academic disciplines. The numerous meetings in Germany and Switzerland during the last years were crucial for advancing the research and I very much enjoyed the lively and sparkling discussions. In addition, I am grateful for the integration into his research group 'Pharmacognosy and Phytotherapy' at a distance, the

numerous conferences we attended where I could present and share my research and meet my co-PhD students from the London group in person, which was highly enjoyable. In short, it was an inspiration and joy to be working with him.

For all the practical arrangements that made this study possible, I would like to thank Basel University for providing me with a travel grant to attend the 58th Annual Meeting of the Society for Economic Botany in 2017 in Bragança, Portugal. I would also like to thank the International Society of Ethnopharmacology for allocating me two conference sponsorships to attend their annual conferences in Dresden (2019) and in Thessaloniki (2020). These contributions allowed me to present my ideas to a broader audience and to receive feedback at various stages of the project, in addition to the repeated encouraging feedback to keep pursuing this interdisciplinary avenue.

In regard to institutional support, I am also grateful to have been able to write substantial parts of my PhD at diverse institutes at Basel University in often charming environments – institutes unrelated to this project, but populated with extraordinary staff members that granted me a guest status over extended periods just out of sheer kindness. Special thanks go in this respect to the staff at the Pharmaceutical and (former) Slavic Institutes of Basel University and in particular to Dr. Elizabeth Mäder. I am equally grateful for having been welcome over longer periods in the libraries of the University of Applied Sciences of Northwestern Switzerland in Münchenstein (Academy of Arts and Design) and Olten (School of Social Work). A heartfelt ‘thank you’ in particular to Dr. Tabea Lurk whose continuous support and interest in my work are very meaningful to me.

Given this PhD is an extra-occupational project, I would also like to thank my current and former employers at various universities for their support. I very much appreciated their readiness to intermittently find flexible approaches for organizing the workload accordingly, if the projects at hand permitted it, which allowed me to advance my PhD more vigorously. Special thanks go to Prof. Claus-Heinrich Daub (University of Applied Sciences North-Western Switzerland) and Dr. Franz Kernic (Federal Institute of Technology [ETH]) for their trust and continuous support.

Before thanking my personal environment for all their kindness and warmth over all these years, I would like to also extend my thanks to all those persons I came into contact in preceding PhD projects – projects that all left their traces in this final undertaking. In fact, the PhD project on ‘understanding local knowledge’ has similarities with a Matrjoschka doll: It is the outermost shell of a number of preceding PhD projects that for various, at times Monty-Python-esque reasons and despite significant prior invest-

ment were not meant to see the light of the day. However, as nothing is ever fully lost, these earlier projects turned out to contribute to shaping this project through their specific topical and disciplinary foci and perspectives and the insights I derived thereof. Importantly, I would not have been able to undertake such extended interdisciplinary literature analyses were it not for the many cross-disciplinary insights I gained in these earlier projects.

Next to topical insights, I learned a great deal from the people I had the opportunity to meet in these projects. In terms of the project on 'Landscape Mosaics' and related social and cultural institutions in Laos PDR, I would like to thank Prof. em. Jean-Pierre Sorg for integrating me into the project team and inviting me to workshops in Indonesia. With respect to the project on 'Ecological Literacy', I am grateful to Dr. Patricia Shanley for affirming my interest in local medicinal plant knowledge and for inviting me for a 3-month research stay at the Center for International Forestry Research in Bogor, Indonesia, to develop the project proposal. Lastly, in regard to the project on the 'Transmission of local medicinal plant knowledge in Switzerland' I am truly grateful to the group of experts I was able to interview in the frame of the pilot study. Their individual perspectives on and experiences with knowledge transmission in 21st century Switzerland proved to be not only highly diversified, but also mutually exclusive to such an extent that I could not conceptualize the insights in the frame of approaches commonly applied in anthropological or ethnobiological studies on the topic. This led me to realize that in order to be able to study local knowledge from a social science perspective in all kind of contexts, from industrialized to industrializing countries and covering both rural and urban areas, it might be necessary to envision novel, more encompassing approaches. Thus, the initially rather disconcerting incompatibility turned out to eventually result in the inspiration for this project, namely to develop an approach that allows tackling local knowledge more generally and encompassingly.

Having said that I would also like to thank Eva Moehlecke de Baseggio whose comments on specific sections of the text were as valuable as inspiring and to Andy Clarke for providing me some assistance on several passages of the text in the final phase.

Furthermore, I would like to thank my parents for their continuous support over all the years and stages of this project, including its various metamorphoses and ups and downs – thank you for believing in me and for encouraging me to pursue my way. I would also like to thank my colleagues and friends for their continuous patience, encouragement and their interest in the current state of this ever-morphing project. Warm thanks go to my 'old friends' Monika Thomann, Madeleine Jaccard, Luea Ritter, Thuan

Nguyen, Simone Bühler and Ruedi Bräuning for their longstanding support and friendship.

Last but certainly not least, I thank my husband Jan who pursued his own extra-occupational PhD over the last years. It was an incredible opportunity and inspiration to be doing this in parallel to you and I thank you for all we shared on this journey, for all the exchanges, for the night-long inspiring discussions on ‘values’ (your topic) and ‘knowledge’, your interest in how things are developing on my side and your unwavering support notwithstanding the circumstances. It was an extraordinary ride, thank you!

Chapter Overview

Table of Contents

c. List of illustrations

d. List of tables

e. List of abbreviations

ABS	Access and Benefit Sharing
AI	Appreciative Inquiry
BGL	Bonn Guidelines
BCE	Before Common Era
CA	Capability Approach
CBD	Convention on Biological Diversity
CIDA	Canadian International Development Agency
CIFOR	Center for International Forestry Research
CITES	Convention on International Trade in Endangered Species of Wild Flora and Fauna
DIFID	Department for International Development, United Kingdom
GACP	Guidelines on Good Agricultural and Collection Practices
GIS	Geographic Information System
GIZ	German Corporation for International Cooperation
GLOBE	Global Leadership and Organizational Behavior Effectiveness Research Project
GPS	Global Positioning System
ICT	Information and Communications Technology
IDS	Institute of Development Studies
ILO	International Labour Organization
IK	Indigenous Knowledge
ISSC-MAP	International Standard for Sustainable Wild Collection of Medicinal and Aromatic Plants
IUCN	International Union for the Conservation of Nature and Natural Resources
JTB	Justified-True-Belief
Lao PDR	Lao People's Democratic Republic
MDGs	Millennium Development Goals
NTFP	Non-Timber Forest Products
NGO	Non-Governmental Organization
OECD	The Organisation for Economic Co-operation and Development
PAR	Participatory Action Research
PPA	Participatory Poverty Assessment
PRA	Participatory Rural Appraisal
SDC	Swiss Development Cooperation
SDGs	Sustainable Development Goals
RRA	Rapid Rural Appraisal

SA	Sustainable Livelihoods Approach and Sustainability Assessment
TRIPS	Agreement on Trade-Related Aspects of Intellectual Property Rights
UEBT	Union for Ethical BioTrade
UN	United Nations
UNCSD	United Nations Conference on Sustainable Development
UNCTAD	United Nations Conference on Trade and Development
UNESCO	United Nations Educational, Scientific and Cultural Organization
WCED	World Conference on Environment and Development
WCS	World Color Survey
WHO	World Health Organization
WTO	World Trade Organization
WWF	World Wide Fund for Nature

1 Rationale for studying local knowledge

Local knowledge[1] in all its multifacetedness has gained a lot of attention in the last four decades in both academia and the public discourse around the globe. In the 1980s, in an increasingly globalizing world, the facts increasingly spoke for themselves, bringing to light the astonishing range of topics local knowledge contributes to and deals with. As a matter of fact, it was realized that local knowledge extends to a multitude of topics across time and cultures, ranging – to only name a few – from age-old astronavigation skills leading our ancestors on their way across the Pacific Ocean to cultivating and breeding skills resulting in a wide range of domesticated plant and animal species available today. It also entails extensive knowledge on the human body-mind complex, as laid down in numerous plant-, animal- and mineral-based traditional healing approaches and systems, including complete systems of medicine such as *Ayurveda*.

Prominent examples of recent introductions and applications of local knowledge on a global scale include for the area of cosmetics e.g. *Aloe spp.* and *Euphorbia peplus L*. (both for treating skin injuries, cf. Dat et al. (2012); Heinrich (2015b)). For the area of nutrition, *Açai* berries (initially from the floodplains of Southern America, cf. Heinrich et al. (2011)) are a prominent example for trendy food supplements introduced of late. For the medical area, early examples include the application of *digitoxin* as cardiotonic agent (from *Digitalis purpurea L./D. spp.*, as described by William Withering in 1785, cf. Anderson (2012)) or of *quinine* (from the bark of *Cinchona pubescens Vahl./C. spp.*, cf. Gertsch (2009)) for the treatment of malaria and fever, as used for centuries by local communities. Other well-known examples inspired by applications in local knowledge contexts include *aspirin* and *antibiotics.* More recent additions entail *Lepidium meyenii Walp./Maca* from the Peruvian highlands (cf. Gonzales (2012); Beharry and Heinrich (2018)) for improving reproductive health in humans and cattle or *Galanthus spp.* for the treatment of both poliomyelitis and Alzheimer's disease (cf. Heinrich and Teoh (2004)).

The initial realization of the sheer existence, range and significance of local knowledge was soon followed by a growing insight into its manifold – and importantly: multi-level – functions and roles. To only give a few examples – local knowledge proved to be indispensable on a local level in providing subsistence knowledge critical for the survival and well-being of local communities; on a regional level it provides indispensable knowledge for sustainably managing wider ecosystems such as coastal areas or water-

[1] The same is true for related, yet not fully interchangeable notions such as 'traditional knowledge', 'traditional ecological knowledge' or 'indigenous knowledge'. For more information on how these related terms are handled in this research cf. chapters 1.1/2.1.2.

sheds and, eventually, on a global level it showed to have the potential to e.g. informing and refining the search for new substances for the development of novel materials or drugs.

Moreover – and going beyond strictly utilitarian motives – local knowledge came to be increasingly seen for what it was: a vast reservoir or treasure trove of condensed human experience and knowledge tested and refined over many generations in response to changing environmental conditions. As such, it was acknowledged that local knowledge forms a part of the (bio-)cultural heritage of mankind (Maffi 2001, 2005) – a heritage whose loss could have detrimental consequences when searching for new approaches to solving contemporary and future problems. In this vein, local knowledge received increasingly appreciation for its complimentary character that was realized to represent an outstanding asset. While generic scientific knowledge is in most cases deemed the primary route and gold standard to address big global challenges, local knowledge came to be understood as a necessary, additional dimension when it comes to adjusting generic, global solutions to the specific local social, natural and economic environments. Such localizing adjustments proved to significantly facilitate the process of steering transitions towards a more sustainable development. In view of the global situation of crisis at the onset of the 21st century, the solution was realized to be in the converse of differing ways of knowing: Climate change, widespread deforestation, biodiversity loss, increasing scarcity of natural resources, global distributive injustice and increased migration flows at a global scale all ask for solutions that draw from knowledge from all potential sources, developed and accumulated under various contexts and paradigms.

Eventually, and notwithstanding all these positive attributes, it became at the same time obvious that across the globe, local knowledge was more and more in danger and even potentially prone to extinction, akin to the fate suffered by innumerable biological species. The ever-accelerating and intertwined processes of globalization, standardization and modernization were identified as main drivers of this decline in and loss of knowledge, often combined with the loss of the respective natural habitat. These global processes place such knowledge under significant pressure, not seldom resulting in local knowledge's marginalization, dismantling and – over time – eventual demise.

This development did not go unheeded, notably in the frame of the growing discourse on sustainable development. In fact, the international community has started to address the issue as early as in the wake of the Earth Summit in Rio de Janeiro, Brazil, in 1992 where, among others, the pivotal Convention of Biological Diversity (CBD) was

approved. Subsequent significant, exemplary steps to counter-acting the gradual demise of local knowledge in the overall attempt to save the planet include the formulation of both Millennium Development Goals (MDGs, 2000-2015) and Sustainable Development Goals (SDGs, 2015-2030) and the follow-up conference to the Earth Summit, the Rio+20 summit in 2012 (for a detailed historical account cf. chapter 2.2.1). As a matter of fact, over the last decades, the debates on 'sustainable development' and 'local knowledge' have become increasingly intertwined, with the former often providing some form of overarching normative layer for strengthening the cause of the latter, at least theoretically, i.e. on paper. The interrelatedness of these two discourses is also the reason why I consider it to be advisable to take the notion of 'sustainable development' into account and use it as 'normative canvas' when elaborating a framework for understanding local knowledge.

In academia the topic of local knowledge has been taken up and discussed from very different disciplinary perspectives. To first point to an eye-catching feature shared by the great majority of studies: Methodologically, they remain fairly silent as to how the information and findings at hand were gained, despite the frequently alleged 'hard-to-grasp' nature of local knowledge. In a similar vein, critical reflection on external biases such as structural and organizational constraints and on internal biases such as potential assumptions and personal preferences are largely missing. One could say at this point that in most studies, a reflexive layer critically assessing one's own process of perceiving, processing, interpreting and, eventually, understanding is largely missing. It seems as if the potentially highly exotic and elusive nature of 'local knowledge' is met by a kindred discretion by outside observers when it comes to the inherent uncertainty of the knowledge gained – an uncertainty stemming from the influence of external and internal biases and constraints on the actual process of perceiving and making sense.

As for disciplinary achievements in the academic debate on local knowledge, the sheer number of academic branches involved is remarkable. To provide some prominent examples and their topical foci: *Anthropologists* consider local knowledge to represent a substantial, if not the central part of the culture of not only indigenous peoples in remote rural areas, but also of rural and urban communities in both industrializing and industrialized countries. In their attempt to understand local livelihoods across the globe, they often center on specific local knowledge cases, mostly choosing a descriptive-enumerative approach in order to be able to account for the particularities. *Ecologists* and scholars from the various *ethnosciences* (e.g. ethnobotany, ethnozoology, ethnopharmacology) are primarily interested in complementing their focal expert knowledge by learning about locally practiced uses, administrations and management tech-

niques of the local flora and fauna for subsistence practices (e.g. in terms of human and animal nutrition, human and animal health-care or in terms of local ecosystem management). Proponents of *development studies* are primarily interested in applied development research and strive to examine how local and scientific forms of knowledge could best be combined or, if feasible, even integrated to achieve the planned development impact. *Political scientists* in the tradition of Elinor Ostrom (1990; 2002) seek to understand local governance arrangements for managing commons. Along with their colleagues from development studies, they invest in analyzing and criticizing local knowledge's marginalization – a phenomenon that is often conceptualized in terms of Western power relations exploiting the global South. However, while this argument is most prominent in these two disciplines, it represents a widespread underlying attitude bridging across disciplinary boundaries. This, in turn, underlines that discussing 'knowledge' is hardly ever neutral, but often politically loaded, involving hegemonically coined discourses about what counts as reality, how said reality can be perceived, and, consequently, what amounts to legitimate knowledge.

Acknowledging the existence of this political undercurrent, I primarily focus my thesis on the academic discourse – first because despite the existing vast body of literature and the topic's real-world relevance, it is far from established what the meaning or even the range of meanings of 'local knowledge' amounts to within the academic discourse. In this respect, the thesis intends to contribute to advancing the topic in theoretical terms. To this effect, I propose an in-depth analysis of 'local knowledge' where I analyze the terms individually before moving to the even more elusive notion of 'understanding local knowledge'. The latter represents a reaction to the absence, to a great extent, of what I denoted above as 'critical, reflexive layer'. Integrating 'understanding' into the analysis implies therefore going one step further in acknowledging that the observational and perceptional configuration of the individuals studying local knowledge bears a significant influence on how he/she describes the topic in question – all the more in the case of differing epistemological backgrounds to start with. Shifting the perspective from 'local knowledge' to 'understanding local knowledge' thus attempts to counteract the potentially problematic disassociation between researcher and his/her objects of research. Next to providing some methodological insights into how the knowledge in question is generated, adding a 'critical layer' brings the researcher him-/herself in a very tangible way to the table along with his/her external constraints and internal biases that in turn shape his/her research. In my opinion, this layer bears relevance to the extent that it needs to be taken account of and managed rather than left out – even at the expense of complicating things by introducing an additional per-

spective or at the expense of not being able to fully accommodate the complex topic of 'reflexive understanding' that in fact would merit being center-stage rather than only an additional component (cf. chapter 1.3.2).

Having said that, I would like to underline that for this research, it is *knowledge* that is at the heart of my research interest – *knowledge modified by the locality* it evolves in, resulting on a global scale in a multitude of 'local knowledges'. Suffice to say at this point that knowledge, indisputably, has been and still is fundamental to the evolution of mankind[2], not at least due to the fact that it can be transmitted and further developed across generations and space. The effects of its accumulation through constant inter-generational transmission cannot be overestimated. Human civilization stands on the often-cited 'shoulders of giants' for problem solving, invention and innovation. And whatever criticisms on marginalization there may be, it led to globally used innovations such as the wheel, the printing press or, to give examples of more 'modern knowledge', the Global Positioning System (GPS) providing satellite tracking services, the knowledge to genetically engineer living organisms or to determine the surface composition of distant planets by means of precise flybys. However, equally indisputably, there is no such thing as 'one uniform knowledge' within science – depending on the perspective, it is conceptualized variably and different types of and approaches to knowledge tend to be predominant in various fields. Consequently, even in academia, the debate on knowledge encompasses a plurality of competing theories stemming from different lines of thoughts or disciplines.[3]

Hence, given that it is far from being clear what researchers on local knowledge have in mind when talking about 'knowledge', I take identifying a perspective on 'knowledge' that is meaningful with respect to its use in the context of 'local knowledge' as one of my starting points. On the basis of such a notion of knowledge, I move on to scrutinize the second, qualifying part of the compound term, namely '*local*' for which the academic debate offers a variety of meanings of and perspectives too, only complicating a concise understanding of 'local knowledge'.[4] Given this situation, the task consists in structuring the arguments of the debate on 'locality' in terms of their significance for informing the debate on local knowledge; the underlying question being how a specific

[2] In "Metaphysics", Aristotle (2003) even denoted mankind's aspiration for knowledge and for understanding its nature and structure as 'innate' to humans and to human development.

[3] Historically, the topic of knowledge has primarily been debated in philosophy, theology and, to a lesser extent, sociology. From the late 1960s on, additional perspectives entered the field, including on the one hand *business studies*, primarily in the form of 'knowledge management' aiming at distilling how organizations could best generate value from their knowledge-based assets. On the other hand, *science and technology studies* entered the field to study the relation between science and technology and the societal conditions enabling technical innovations.

[4] To only provide a basic example: In the majority of cases, 'local' refers to a specific location in time and space, but it can equally denote a virtual or metaphorical location, rendering e.g. physical presence expendable for certain functions of locality.

locality influences the knowledge body of the people in place or – formulated differently – how a specific locality is reflected in a given local knowledge form.

While an analysis of the existing categorial differences and disciplinary influences in understanding the terms ‘knowledge’ and ‘local’ is an important starting point of my thesis, my goal does not consist in developing a concluding definition of local knowledge. In fact, I would consider such undertaking to be rather ill-advised, given the indeterminacy in the academic debate as to what exactly constitutes knowledge – a fact that is even more pronounced in the case of ‘local knowledge’ where the major factor of potentially differing epistemological backgrounds requires careful attention and consideration. In view of this ‘otherness’ that, to differing degrees, comes with local knowledge, I consider it crucial to not strive for providing assertion in the form of a finite definition, but to rather identify the field and scope of potential forms and manifestations of local knowledge with the aim to identify and propose meaningful basic categories characterizing local knowledge. Thus, the focus of this research is on identifying an adequate framing instead of determining descriptive assertions.

With this end in view, I develop in this research a generic and categorial approach to local knowledge condensed in a set of interrelated concepts and guiding questions that allows for integrating virtually any form of local knowledge, in addition to a providing basic guidance for a critical reflection of one’s own role and influence on the process.

In view of this, I rather start from the background assumption that the variety in perspectives on both ‘knowledge’ and ‘locality’ represent different facets and aspects that have to be taken into account when aiming at as encompassing as possible an approach. Accordingly, my goal and the related scientific contribution are to pave the way to approach the reasonable range of understandings of local knowledge in a structured and comprehensive way – not the least to contribute to building bridges between epistemologies or ‘ways of knowing’ with the ultimate aim to provide a common basis for the many research endeavors and development initiatives involving local knowledge. The aim therefore consists in crystallizing, organizing, translating and critically reflecting on the manifold of perceived categories for local knowledge in a way that is productive and informative for empirical academic research or for applied contexts. In a final step, the framework resulting from the steps above is checked against a previously defined of sustainability criteria in order to make sure that the approach to local knowledge suggested in this research is conforming with the broader societal discourse of sustainable development.

Hence, rather than focusing on political and social reasons behind the often observed marginalization of local knowledge, I concentrate on elaborating a generic interdisciplinary-based approach in line with basic sustainability principles that should contribute to facilitating access to the topic for all parties interested while also allowing for some critical reflection on the uncertainty inherent to the attempt to gain an understanding of alien knowledge environments – to the potential benefit of academia as much as applied sectors such as e.g. development cooperation or environmental protection. By means of such clarification, I hope to being able to contribute my share to overcoming a potential lack of understanding or insight into what I take to represent important fields not only for research, but also for societal transformation.

1.1 Background and statement of the problem

In the following, I describe the potential and multifarious roles of local knowledge (chapter 1.1.1) before I outline its precarious current state of marginalization and decline (chapter 1.1.2).

1.1.1 Local knowledge – a critical resource: relevance and policy support

As stated earlier, this research is dedicated to local ways of knowing, i.e. to a knowledge type that is often, and rather mistakenly, seen as the somewhat elusive counterpart of scientific knowledge, the dominant knowledge paradigm in the West. For reasons to be elaborated later, I denote in this research this form of knowledge as 'local knowledge'. As preliminary working definition, I understand local knowledge as a collective or 'umbrella term' for a variety of concepts such as traditional knowledge, traditional ecological knowledge, indigenous knowledge, farmers' knowledge, folk knowledge etc.[5]; in this research's understanding, it comprises knowledge, beliefs, traditions, practices, institutions and worldviews developed by local or indigenous communities in industrializing and industrialized countries in response to permanently changing social and natural environments. Following Antweiler, I also consider local knowledge to be a "locally situated form of knowing […] found in all societies" (2004:1). Its primary characteristic lies in its flexibility and ability to constantly evolve and adapt to changing local circumstances and related environmental conditions in order to increase the resilience of the system in question through a continued process of co-evolution (Berkes, Colding, and Folke 2000).

[5] While this implies that the preferred term in this research for the phenomenon in question is 'local knowledge' (cf. chapter 2.1.1), it does not entail leaving aside all publications featuring other terms. On the contrary: Under the premise of striving for developing a comprehensive framework, it is only conducive to take notice and process all perspectives on the topic, regardless of disciplinary labels.

In academia, local knowledge is primarily discussed in anthropology, receiving much less overall attention, especially with respect to its occurrence and potentials in industrialized countries. This is at astonishing odds with the multitude of potential use applications of local knowledge in many contexts and in both everyday life and in times of socio-economic uncertainty, crises, epidemics, displacements or war (Pierce and Emery 2005; Tomasini and Theilade 2019). As a matter of fact, its functions and roles are multifarious and encompasses all societal levels from local to global, as the following paragraphs demonstrate:

With respect to the local level, local knowledge enables local communities throughout the world to survive and sustain their livelihoods, providing specified natural-resource related expert knowledge accumulated over generations in various domains such as animal husbandry, agriculture, agroforestry, fishing and hunting, extraction practices, nutrition, community health-care, education, conservation (cf. e.g. Berkes and Turner (2006); Ellen and Harris (2000); Ford (2001)).

To elaborate on a few examples: Regarding nutrition, local knowledge is crucial in identifying plants for diversifying human dietary habits in view of both modern diets' general poverty in plant diversity[6] and the extent to which diet-related diseases are burdening global economies (Vandebroek et al. 2011). Such plants – such as liakra in Italy, bush foods in Australia or quelites in Mexico – amount to vital traditional components of rural diets across the world with noticeable positive effects on the body mass index, if consumed regularly (Reyes-García et al. 2008), albeit their consumption can also be considered a stigma of poverty (cf. e.g. Cruz-Garcia (2017); Price (2006)). All over the world, these wild, weedy and semi-domesticated plant foods and non-commercial local breeds not only complement human diet, but are also used as medicine or forage (cf. e.g. Barreau Daly (2014); Menendez-Baceta (2012); Stepp and Moerman (2001); Vandebroek and Sanca (2006)).

Regarding community healthcare, local knowledge on traditional medicine (i.e. the use of plants, animals and minerals) is pivotal in securing primary healthcare for the poor population in view of main-stream bio-medical healthcare often lacking in rural areas or being of too poor a quality (cf. e.g. Alves and Rosa (2007); Farnsworth et al. (1985); Heywood (2015); Mc Dade et al. (2007)). Traditional medicine helps to ensure the provision of healthcare in-situ and leads to respective local knowledge having a high use-value for locals, as a vast body of literature from all over the world shows (cf. e.g. Alves

[6] Citing Prescott-Allen (1990), Vandebroek et al. (2011) specify that from the estimated 50'000 edible plant species only about 250-300 are considered food crops while the number of plant species actually feeding the world ranges between 7 and 103.

and Rosa (2007); Giday et al. (2009); Vandebroek et al. (2004)). Accordingly, methods and best practices have been suggested to evaluate the safe and responsible use of traditional healers and their plant-based therapeutic approaches (cf. e.g. Birhan et al. (2011); Graz (2005); Graz et al. (2007)).

In terms of culture and education, local knowledge galvanized in folk-songs or stories can be pivotal in strengthening cultural identity and self-esteem, in promoting bio-cultural heritage and in contextualizing scientific learning about the environment within a traditional context, providing the students with real-world knowledge directly applicable to their life-context (cf. e.g. Battiste (2002); Kraipeerapun and Thongthew (2007)). In view of the overall global decline in languages and cultures worldwide, endeavors to make intercultural education an official state policy (as in Bolivia at the beginning of the 1990s, cf. Vandebroek et al. (2011)) are as crucial as culturally adequate choices of teaching settings and methods (e.g. field trips, observation or informal instructions, cf. Reyes-García et al. (2010)).

Regarding conservation activities, local knowledge often comprises elements crucial to conservation, making local communities potentially excellent natural allies for conservationists[7] (cf. e.g. de Albuquerque et al. (2011); Nazarea (2006)). These elements encompass sacred groves (cf. e.g. Lebbie and Guries (1995)), social taboos (cf. e.g. Colding and Folke (2001)) or community embargos (cf. e.g. Bonta et al. (2006)), serve to regulate access to and use of biological resources and stimulate behavioral practices beneficial to safeguarding biodiversity. In addition, local communities often establish in-situ agrobiodiversity in their home gardens and well-structured human networks of seed exchange (for Spain: cf. Calvet-Mir et al. (2012); for the Amazons region: cf. Díaz-Reviriego et al. (2016); for Nepal: cf. Poudel et al. (2015)). Research has shown that local communities' knowledge base of taxa and systemic interactions relevant to their environment tend to operate at a much finer spatial and temporal scale than comparable scientific classification approaches[8] (cf. e.g. DeWalt (1994); Newmaster et al. (2011)), rendering local knowledge an indispensable base for bio-cultural and ecological information.

With respect to the regional to national levels, local knowledge has additional application fields. In the context of conservation, local knowledge is crucial for all activities that are not limited to the immediate surroundings of local communities, but extend to

[7] The views on whether biodiversity conservation and local development are compatible differ quite significantly. In a narrow view of conservation, subsistence activities of small-scale farmers and forest dwelling communities are considered problematic intrusions.

[8] The research by Newmaster et al. (2011) on the local knowledge on sea grass taxa led to the realization that the locals recognize five times more taxa than Western scientists, "each with their unique roles in the local ecosystem and usefulness to humans" (Vandebroek et al. 2011:5).

regional and, potentially, national levels (for examples cf. Roué and Molnar (2017)), including initiatives in the frame of policy agreements such as the National Agenda 21 or the Sustainable Development Goals. Topically, it involves e.g. the management of single species, ecosystems or landscapes (cf. e.g. Baptiste et al. (2017); Karki et al. (2017); Mechik et al. (2017); Roué and Molnar (2017)) as much as rehabilitation endeavors and disaster preparedness through risk-reduction where related effects go beyond the mere local sphere (for examples cf. e.g. Dubé and Munsaka (2018)).

In the cultural domain, local knowledge can help to inform education policies that – once proven successful in reviving local knowledge traditions in a specific region – are more likely to be mainstreamed in entire rural regions or even nation-wide (for Canada cf. Battiste (2002); for Alaska cf. Barnhardt (2005)). In the domain of healthcare, traditional medicine is pivotal not only for local rural communities themselves, but also for residents in the main cities of the respective countries where main-stream healthcare is de facto available, but by far not everyone's first choice. Correspondingly, in urban centers all over the world (cf. e.g. Bussmann et al. (2009)), traditional medicine is still widely used. In addition, in an act of hybridization, inter-medical healthcare systems combining local medicines from different cultural groups with bio-medicine are established (for the Fulni-ô in Brazil cf. Soldati and de Albuquerque (2012), for the Maori in New Zealand cf. Durie (2004)). In terms of income generation for local communities, goods produced locally based on local knowledge have the potential to provide some cash income for rural populations, in addition to potentially granting them access to regional markets, potentially even in the frame of production cooperatives and/or fair trade schemes (for the case of medicinal plants cf. Farnsworth et al. (1985); Farnsworth and Soejarto (1991); Shanley and Luz (2003); in general cf. von Hauff (2012)).

Finally, extending local knowledge's influence even further, it is also **crucial at an aggregated global level** due to its many combined effects resulting from the ability to cope with and adapt to environmental variability and trends at local, regional and national levels. Accordingly, local knowledge is often considered critical for monitoring processes in all kinds of fields and topics and for informing how to tackle pressing social and environmental challenges at a global scale such as climate change, pending global food crises or the sustainable development of natural resources (cf. e.g. Nesheim (2006)). Exemplarily for the domain of global health-care, local knowledge serves additional population groups next to benefiting local communities and the urban population of industrializing countries, namely international migrants in large multicultural centers (cf. e.g. for London Yöney et al. (2010); for New York Reiff et al. (2003);

for Cologne Pieroni at al. (2005)). Interestingly, these migrants often opt for traditional medicine, considering it often to be a more satisfying, holistic and trusted healthcare option even if bio-medical healthcare is easily available and of overall high quality (Vandebroek et al. 2011).[9] In addition to international migrants, herbal medicine enjoys great popularity in the overall resident population of both industrializing and industrialized countries. To lower side effects, prevent over-medication and/or avoid the escalating cost spiral linked to sophisticated healthcare, a substantial number of consumers seek viable alternatives or complements to modern medicine. This rather new development resulted in a great surge of public interest in the use of plants as medicines has led to a skyrocket increase in sales of herbal medicine in Europe and the United States since the 1990ies (Akerele et al. 1991; Kate and Laird 1999; Lewington 1993; McCaleb 1997; Schippmann et al. 2003). Lastly, for a number of decades, local knowledge on medicinal plants was considered a promising approach to selecting interesting candidate plant species in the ongoing search by pharmaceutical companies for the discovery and development of new pharmaceuticals – a debate that is led more controversially nowadays (cf. e.g. Laird (2002); Siqueira et al. (2012); Vandebroek et al. (2011)).[10]

Lastly, local knowledge is critical in designing development initiatives that take account of local perceptions and ways and reflect people's needs, local priorities and endogenous development paths (Mechik and von Hauff 2016). This also entails developing indicators and criteria for development initiatives founded in local values, classifications, processes and perceptions and acknowledge locally applied measures of environmental quality and change as much as a local prioritization of projects based on own assessment approaches (Antweiler 2004; Sillitoe 1998b). Instead of focusing on rather utilitarian aspects, development initiatives benefit from designing their interventions around local challenges and needs in close consultation with local communities (Vandebroek et al. 2011), rendering the use of local knowledge an empowering act.

Against the backdrop of all these different functions, roles and related applications, it comes as no surprise that in the 1980s this knowledge type attracted attention in the policy domain, as complex global problems such as e.g. massive environmental pollution and biodiversity loss started piling up. Internationally, the notion of 'local knowl-

[9] More precisely, New York has "hundreds of botánicas, herbal shops run by Latino immigrants that sell good luck amulets, potions, spiritual candles, saints, and medicinal plants [...] and offer consultations with traditional and spiritual healers. The popularity of these botánicas stresses their importance for immigrant health and may be demonstrative of their functioning as a coping strategy for psycho-social pressures associated with migration." (Vandebroek et al. 2011:2)

[10] While in the past the value of local knowledge for the 'discovery' of plant-derived pharmaceuticals such as the 'arrow poison' curare, psilocybin, Vinca alkaloids or artemisinin from Artemisia annua L. is undisputed, in the last decades comparable discoveries of plant-derived pharmaceuticals became scarce (cf. e.g. Reyes-García (2010); Vandebroek and Moerman (2015); for an extensive account on the developments in ethnopharmacology cf. Heinrich (2013)).

edge' became the embodiment of the knowledge of non-European societies (Speich 2009) and gained additional momentum in the context of the Earth Summit in Rio in 1992 and successor conferences where local participation was understood as decisive for sustainable development. In this context, a number of policies came into force that were meant to provide protection to local knowledge, including, most prominently, the CBD, namely article 8j providing indigenous communities with more rights to their resources and knowledge (United Nations 1992), and the 'Nagoya Protocol on Access and Benefit Sharing', a 2010 supplementary agreement to the 1992 Convention on Biological Diversity (CBD 2011) (entered in force in 2014), aiming at a fair and equitable sharing of benefits out of the utilization of genetic resources and at contributing to the conservation and sustainable use of biodiversity. Both development agencies and research institutes took active notice of these developments, made local knowledge a salient topic and integrated it to varying degrees and extents (Heywood 2015; Speich 2009).

However, from the very beginning and regardless of the multitude of practical applications, 'local knowledge' was met from two contradictory perspectives: While some deemed local knowledge to be a panacea resource with potential for both steering local development and empowerment, others suspected it to hamper said development process due to was what perceived as its inherent 'backwardness' that needs to be overcome. This underlines the normative load of the issue – dealing with local knowledge is for the majority no neutral undertaking, but inherently politically loaded.

1.1.2 Local knowledge – an endangered resource: marginalization and decline

In view of this situation, it comes as no surprise that local knowledge, for all its vital contributions, was and still is confronted with substantial indirect and direct marginalization and, at times, straightforward oppression (e.g. Greene et al. (2004); Pilgrim et al. (2008)). This is in itself highly problematic as marginalization of knowledge tends to be followed by erosion, which in turn leads to increased marginalization and even more erosion – a vicious circle. The resulting imminent loss of local knowledge itself is devastating in at least two ways: With respect to the local level, it deprives local communities of the subsistence knowledge for survival, in most cases without providing them with alternative perspectives, knowledge and skills. In terms of the global level, it amounts to recklessly disposing of troves of knowledge acquired and refined over generations in constant adaptation to changing social and natural environments – troves of societal resilience humanity might be in dire need in the future. In the following para-

graphs I briefly outline the various ways of marginalization to then sketch what I deem to be the two main causes fueling this marginalization, i.e. power issue and insufficient knowledge from the side of non-local practitioners and researchers interacting with local communities.

While the international policy support for local knowledge described above, in the first place the CBD with article 8j (1992), rendered it more difficult to ignore the pivotal role of local knowledge and local knowledge holders in the global struggle for bio-diversity conservation and environmental management, the situation of local communities is in most places still dire and the potential of local knowledge for development at local, regional and global scales remains only marginally utilized. In fact, all over the world local knowledge in its many variants and forms get marginalized time and time again – indirectly as much as directly – as the numerous examples of sidelining and exploiting of local interests, livelihoods and intellectual property rights show (Agyeman 2005; Baker 2012; Britz and Lipinski 2001; Janz 2009) show. The result of this marginalization, however, is in all cases similar: an erosion and, eventually, loss of local knowledge (cf. e.g. Brodt (2001); Cetinkaya (2009); Giday (2009); Hamilton (2008); Nesheim (2006); Philander (2012)). I describe in the following what I consider representing main ways, both indirect and direct ones, in which local knowledge is systematically and structurally marginalized.

First, indirect marginalization of local knowledge is at play in the context of the often unresolved status of land entitlements as local communities often find themselves plagued by broader issues such as "territorial invasion or loss, displacement and marginalization by their own state elites" – often in the context of resource extraction on their territories – that renders it difficult or even impossible for them to continue living in the place and maintaining the livelihoods to which their knowledge is ideally adapted and in which it is firmly rooted (Greene et al. 2004).[11] Establishing a new life in a different place is not seldom accompanied by substantial struggle to re-orient oneself while trying to use and protect the familiar, albeit no longer ideally adapted local knowledge under the changed circumstances (Vermeylen et al. 2008).[12] Obtaining recognition of their rights and gaining control over the resources found on their land and territories on which they depend for the physical, economic and cultural well-being is therefore criti-

[11] Greene et al. underline that the indirect marginalization through displacements and territorial loss might be even more harmful for local communities than "the appropriation of their traditional knowledge by bio-pirates from the North" (2004:214).

[12] In addition to these reasons at the macro level, a number of additional causes for the decline or even loss of local knowledge have been identified, including formal schooling and knowledge acquired at school (unless it is contextualized learning, which might help to maintain local knowledge) (Reyes-García et al. 2010).

cal and paramount for their subsistence survival[13], in addition to having the certainty that development in their environment advances in line with their own values and allows for sustaining their identities (Davidson-Hunt et al. 2012).

Second, indirect marginalization also originates from the numerous unresolved legal issues associated with rights and responsibilities that arise from the specific set of agreements described in the preceding chapter, especially with respect to the implementation at national level, often resulting in situations where for power reasons the issue is decided at the detriment of the local community, resulting in local communities loosing out time and time again, as numerous examples show (cf. e.g. Nazarea (2006)).

Third, direct marginalization comes into play in the actual way the topic of local knowledge is addressed: The actual attention allocated to local knowledge is considered to be insufficient and often misguided (Escobar 1998) – misguided either because it is "rarely understood in its own terms", but more often is "refunctionalized to serve the interest of Western-style conservation".[14] In this sense, a growing appropriation and privatization of knowledge and resources (Davidson-Hunt et al. 2012) is taking place, or what Shiva called, in 1997 already, the "capital's predation of local ecologies and knowledge", throwing up many issues, including questions of intellectual property right (Vermeylen et al. 2008). These questions are, of course, not new at all, but only remind of the discrimination carried out in colonial times.[15]

Forth, direct marginalization also arrives at the hand of development/international cooperation agencies who in their wide-spread appropriation of local knowledge show a tendency toward neglecting the complexity of local knowledge by readily adapting it to perceived (Western) demands, often modifying it in the process with scientific perspectives to render it more valuable for Western donors (Sillitoe 2010).[16] As a result, local knowledge becomes refashioned to attend to the needs of a mostly donor-driven project and program[...] implementation (Antweiler 2004) – an implementation that is not seldom at

---

13 This link is also reflected in the United Nations Declaration on the Rights of Indigenous Peoples (United Nations 2007) as well as in the Indigenous Peoples International Declaration on Self-Determination and Sustainable Development (Davidson-Hunt et al. 2012).

14 This challenge is even intensified as studying local knowledge is by no way socially neutral, but loaded with political, legal and ethical issues (Antweiler 2004; Vermeylen, Martin, and Clift 2008). 'Political' issues as the terms of engagement need to be clarified; 'legal' as it entails a consideration of intellectual property right regimes and of modes for compensating peoples sharing their knowledge and for protecting them against unfair exploitation; 'ethical' as it includes the choice of methods and ethics of collaboration in researching local knowledge and in designing development interventions.

15 Threats to the integrity of local knowledge and related natural resources are of course no novelty, but lived reality since at least the beginning of Western colonialism. While local populations tried to combat such influences in various ways, the process of globalization over the last decades rendered these threats overwhelming and almost permanent, leading to an overall leveling of cultural differences (Antweiler 2004).

16 Authors critical of Western development initiatives impetus and the related claim to power rather speak of 'blandly turning away' instead of 'neglecting' to stress the perceived agency that aims at destroying local peculiarities with universal certainties (cf. e.g. Escobar (1995)).

odds with local development plans and strategies. Experience has shown that once diverging development ideas between donors and local communities surface[17], agencies tend to react by distrusting local people's knowledge or the "soundness of decisions they reach" (Sillitoe 2010:16), resulting in a very limited and, potentially, even manipulated local participation as agencies try to keep the upper hand, confident that they know what development consists of and what what steps are needed to advance development in the desired direction. This way, they tend to run the risk of missing their goals and/or producing unintended and potentially harmful side effects.

Assuming that they generally know what development entails and confident to posses the knowledge relevant to advancing development (Sillitoe 2010), development agencies tend to run the risk of missing their goals and/or producing unintended and potentially harmful side effects. Or in the words of Sillitoe (1998b:225): "Ignoring local needs and opinion is leading to tension and resistance and the likely collapse of the expensively imposed interventions when the project withdraws. Lack of respect for others' ways leads to offensive interference in their lives."

The causes behind the precarious status of local knowledge and its holders are as manifold as complex and extend to both system characteristics of local knowledge and context factors, i.e. political and socio-economic causes of knowledge marginalization and erosion. In a global literature review, Aswani et al. identified three main drivers of this development, namely globalization, modernization and market integration (2018). In addition, numerous sub-drivers are at play, including such diverse and often interconnected elements as environmental degradation destroying their actual physical knowledge base, lack of an adequate political representation of local interests, lack of involvement in planning and design of development activities on their lands resulting in local dis-empowerment, lack of adequate formal and non-formal education systems for the transmission of local knowledge, significant changes in lifestyle (voluntary or forced), general poverty and under-development, unsolved land disputes, unsolved issues of intellectual property rights, prejudices towards local knowledge and its potential, fundamentally differing notions of 'possession/ownership' with respect to knowledge, lack of real interdisciplinary work from the side of academia studying the phenomenon and, finally, development agencies focus on short-term politically driven agendas (cf. e.g. Agrawal (1995); Brodt (2001); Ohmagari and Berkes (1997); Pani-

[17] Among others, this discrepancy is related to agencies favoring approaches they consider to be globally applicable such as 'integrated rural development', 'structural adjustment' or 'sustainable livelihoods' – misjudging that "there may be no culturally universal idea of IK [indigenous knowledge], let alone a generic IK approach" (Sillitoe 2010:16) due to its high variability that in turn prevents it from providing universal solutions to general development issues (Sillitoe and Marzano 2009).

agua-Zambrana (2014); Ross (2002); Sillitoe (1998b, 1998c); Vandebroek and Balick (2012); Wilson et al. (2017)).

An extensive critical analysis of these causes and, more importantly, their interrelations is not feasible in this research project. Suffice to say for the purposes at hand these causes can all be attributed to two overarching reasons: They either concern power issues of all forms and manifestations or go back to an unrecognized (or at least: unmanaged) lack of understanding and insight from the part of Western partners. However, the complexity does not end at this point. Rather and moreover, power and knowledge are inextricably linked, as examined in-depth by Foucault (1975) in his analysis of the penal system and related social and theoretical mechanisms during modern age. This led him to stressing that the goals of power and the goals of knowledge cannot be separated as in knowing we control and in controlling we know (Gutting and Oksala 2019).

1.2 Research aim and questions

In view of this complex state of the art, this research takes a step back and invests in advancing the research on the topic by clarifying the scope of the meaning of local knowledge. This implies providing across academic boundaries an encompassing, generalized, structured and interdisciplinary approach to understanding local knowledge that allows for comparisons, is transparent for all parties involved and at the same time incorporates a level of critical reflection. To that end this research invests in crystallizing, discussing and critically reflecting on meaningful categories characterizing 'understanding local knowledge' to facilitate analysis and understanding of the phenomenon generically.

Specifically, the research's contribution to the broader discussion on local knowledge is twofold. Theoretically, it aims at providing a generic framework that captures the basic dimensions and categories of local knowledge and guides the reflection on their inherent complexity and interrelation in a differentiated and interdisciplinary manner that also allows for critical reflection. Furthermore, in view of it tackling a highly sensitive and (potentially) power-laden topic, I expect the framework to be normatively specified, i.e. it needs to be compatible with and reflect basic principles of sustainable development, rendering it compatible with sustainability-based policy documents such as e.g. the Nagoya Protocol that deal with issues related to local knowledge.

Practically, the project aims at establishing a theoretically sound, interdisciplinary basis for specifying at a later stage a practical framework for capturing local knowledge in the field, designed for researchers and practitioners involved in working with local commu-

nities in the context of research projects or initiatives in e.g. development cooperation or environmental protection.

In accordance with the above stated research aims, the project is guided by the following three research questions:

1) What are generic and fundamental dimensions for analyzing 'local knowledge' in its inherent complexity and how could these dimensions be aggregated in a meaningful way into a framework?
2) For the framework to allow for critically reflecting on the process of 'understanding local knowledge': What are generalized dimensions for sketching 'understanding' and how are they to be integrated into the framework?
3) For the framework to be normatively specified with respect to sustainable development: What are basic and salient principles for defining sustainable development as the normative reference system with which the framework needs to be compatible?

1.3 Pathway to the framework development

In order to reach this research's aim and eventually develop a framework for understanding local knowledge, I follow an approach specifically designed for this undertaking and briefly described in the following chapters. I start by *first* outlining the general approach of the research and sketch its four sections (cf. chapter 1.3.1). In a *second step*, I focus on a set of five specifications that result from knowledge gaps (cf. chapter 2.4.2) identified in the respective literature reviews in chapter 2; these specifications (cf. chapter 1.3.2) need to be implemented and integrated into the future framework in order to ensure that the knowledge gaps are not reproduced here. *Lastly*, I discuss a number of challenges that are intrinsically linked to the undertaking of facilitating cross-epistemological understanding (cf. chapter 1.3.3).

1.3.1 General methodological approach

In terms of its underlying structure, this research project consists of four sections: an introductory section (chapters 1–3), a concluding one (chapter 8) and two main sections (chapters 4–6 and chapter 7), the latter two comprising the actual core of this research. At this point, I limit myself to only discussing the overall setup and the roles of the two main parts, as the specific methods applied in the two main parts are individually described at some length in chapters 4.2 and 7.1.

In the *introductory section* I describe this research's aim, motivation, context and methodology and discuss the three concepts formative for the undertaking against the backdrop of the literature published in various academic disciplines and in applied development research. More precisely, this entails discussing four elements or notions in

detail, namely a) ‘local knowledge’, b) ‘sustainable development’, c) the interrelationship of these two concepts, and, to a lesser extent, d), ‘understanding’. As the latter plays an auxiliary role in this research (cf. chapter 1.3.2), I do not engage in an individual in-depth analysis of understanding; rather, the notion is informed by the literature body on ‘knowledge’ – a step that seems justifiable given its role in this research and the semantic closeness with ‘knowledge’. Regardless of the details in approaching the four notions, I expect that establishing a clear starting position by first discussing significant approaches and then specifying working definitions of the concepts central for the remainder of the project should contribute to clarifying and facilitating the analysis in the two main sections of this research.

The *second section* is dedicated to the in-depth literature analyses of ‘knowledge’ (chapter 5) and ‘locality’ (chapter 6) across numerous academic disciplines (cf. chapter 4.2 for the method applied). The aim of these in-depth analyses of the two components of *‘local knowledge’* consists in identifying fundamental and structural characteristics of both ‘knowledge’ and ‘locality’ and in aggregating them in so-called ‘concepts’. These concepts then serve in the third section as building blocks for the framework construction; in others words, they equip said framework for understanding local knowledge. Moreover, as mentioned above, I additionally analyze the literature on ‘knowledge’ with respect to informing the notion of ‘understanding’, given that this research does not tackle solely the issue of ‘local knowledge’, but of ‘*understanding* local knowledge’.

In the *third* section, I develop the framework for ‘understanding local knowledge’, the actual ‘result’ of this research. This takes place on the basis of the two literature analyses in the second section of this research (see above) and following the methodological approach proposed by Jabareen (2009), Dowding (2001) and Stanley (2012), as outlined in detail in chapter 7.1.3.

Lastly, in the concluding and *forth* section I discuss and critically reflect upon research process and results. In addition to condensing specific findings gained from the different stages of the research, I discuss to what extent I was able to provide answers to the three overarching research questions formulated above and to what extent I managed to implement and integrate the additional set of specifications into the framework. Moreover, I also take up the issue of fundamental epistemological challenges that one faces when engaging in research across epistemologies and conclude with discussing future research opportunities.

1.3.2 Additional specifications for the framework development

The framework development is additionally informed by a set of five specifications that need to be implemented or integrated into the heuristic. These specifications result from the knowledge gaps (cf. chapter 2.4.2) identified in the introductory literature reviews in chapter 2 on 'local knowledge', 'sustainable development' and their interrelation. Determining such specifications represents a way how to ensure that these gaps are not re-produced in the future framework for understanding local knowledge. As such, they act as guidelines for the construction of the framework and specify the following five aspects:

a) primary contribution to the debate on 'local knowledge' by means of an emphasis on 'knowledge' as main term (and abstaining from an analysis through the analytical lens of 'power');
b) additional analytical focus on 'locality' as modifier of 'knowledge' in the composite term of 'local knowledge';
c) integration of a reflexive layer to mitigate epistemological challenges related to 'understanding local knowledge' (interplay of so-called 'emic' and 'etic' research approaches);
d) resulting from c) integration and clarification of the character of the reflexive component of 'understanding';
e) clarification of the character of the concept of 'sustainable development' in this research.

In the following, I briefly describe these five aspects.

a) Research emphasis on 'knowledge'

Against the backdrop of the entanglement of knowledge and power, the study area of this research on local knowledge needs to be clearly defined. Given this project's theoretical orientation, I opt to approach the topic of 'local knowledge' by analyzing its components – 'knowledge' and 'locality' – first individually before relating them to each other. Thereby, I place the component of 'knowledge' center-stage and examine how a *theory-based, conceptual-analytical and interdisciplinary approach* to this term could advance the entire discourse on local knowledge, be it for research or development contexts.

Broadening the common perspective on local knowledge by taking a step back and studying its main component 'knowledge' through various disciplinary lenses allows me to include insights and perspectives of academic disciplines beyond anthropology or the ethnosciences as the notion's obvious conceptual homelands. This covers disciplines that continue to significantly shape the debate on 'knowledge', but where the

compound notion of ‘local knowledge’ has ceased to be discussed decades ago (as in sociology) or never has been an explicit topic (as in philosophy).

Such a theory-driven and conceptual-analytical approach that strives for integrating as many perspectives on the topic as possible also responds to the call to invest in evolving “methods and formulat[ing] principles that will facilitate a degree of reliable generalization” (Sillitoe 1998b:234). Ideally, the framework approach developed here could contribute to informing researchers and practitioners working with local knowledge, regardless of their disciplinary and/or professional background.

However, setting the emphasis on the aspect of ‘knowledge’ does not imply that this is the only useful perspective for advancing ‘local knowledge’ and any delineation in this context is foremost a matter of bearing the scope of this research in mind. In fact, there are good grounds for selecting the real-world perspective of focusing on issues of *power and vested interests* related to ‘local knowledge’ as primary analytical lens. In fact, power landscapes heavily bear on local knowledge. Acknowledging this interrelation and building on Foucault's (1975) observation that acts of power are constitutive in defining what counts as knowledge, what is excluded from knowledge and who is designated as qualified to know, a number of authors concentrate their research endeavors on enlightening the interrelation between local knowledge and power.[18] They understand knowledge as a social construct embedded in and evolving from its specific social and cultural context and conclude that any analysis of local knowledge needs to take into account these power dimensions, along with the “economic and political dimensions of its emergence and use” (Pottier et al. 2003:7). Critically analyzing profit and compensation interests therefore became a vital instrument in local knowledge research.[19]

b) Focus on ‘knowledge’ with ‘locality’ serving as modifier

As described above, opting for a conceptual-analytical approach to ‘local knowledge’ implies analyzing the two components of ‘local knowledge’ separately and across numerous academic disciplines. In this process, there is a hierarchy at play: The two no-

[18] Notable studies on how power relations and configurations at global, national, regional and local levels bear an influence on local knowledge include Agrawal’s seminal papers entitled “Dismantling the divide between indigenous and scientific knowledge” (1995) and “Indigenous knowledge and the politics of classification” (2002), the anthology by Pottier et al. under the title “Negotiating local knowledge: power and identity in development” (2003) and studies conducted by Nygren (1999), Fernando (2003), Briggs (2005), Groenfeldt (2003) and German (2010).

[19] Such a perspective involves on the one hand exploring the power relations between the communities and the outside world; political agendas must be identified and understood for gaining an understanding of who is talking on whose behalf. On the other hand, power relations within the communities are of equal relevance when it comes to understanding local knowledge, given that social distinctions within the community have proven relevant with respect to intra-community knowledge distribution. It has been shown that knowledge is not evenly distributed, but strongly varies depending on sex, age, ethnic group, religion, profession etc. (cf. e.g. de Albuquerque et al. (2011); Schunko et al. (2012)). This can result in local interest groups hijacking the development initiative by putting forward their specific perspectives and agendas (Sillitoe 2007a).

tions are not on a par; rather, the emphasis is placed on ‘knowledge’ while ‘locality’ serves as modifier. Such a design has significant advantages.

On the one hand, analyzing ‘locality’ separately as auxiliary function modifying ‘knowledge’ allows me to take notice and integrate findings from the broad debate on locality and spatiality that has gained significant momentum in the last decades, leading to a more complex understanding of the subject (cf. chapter 6): While the traditional anthropological approach builds upon the identification of – ideally – a single, geographically identifiable locale where a specific community is studied in detail, more contemporary approaches argue that ‘the local’ does not automatically refer to a bounded or spatially limited locale: On the contrary, Ruotsala underlines in this respect that “studies charting and examining cultural areas have been replaced by studies, which focus on mobility, multi-locality, trans-nationalism, […] modern mobile identities, transit-spaces […. and gendered space and place” (2008:46). Accordingly, cultures are no longer consistently considered to be local and, subsequently, identities lose their local or regional anchoring too – a fluidity that inevitably also influences and shapes the knowledge people accumulate over a lifetime. Analyzing and integrating contemporary approaches to ‘locality’ and related spatial topics therefore acknowledges the significant influence and effect of the spatial dimension on knowledge. At the same time it allows transcending not only detailed (mostly anthropological) descriptions of specific knowledge forms that often ground in a static, largely outdated notion of locality, but also going beyond the extensive debates on the adequate choice of terminology in anthropology (cf. chapter 2.1.1 for the debate on local vs. traditional vs. indigenous knowledge).

c) Understanding the exotic: Interplay of ‘emic’ and ‘etic’ research perspectives

Striving to ‘understand local knowledge’ implies that one invests in building bridges between one’s own way of knowing and the one of a given local community studied. For research activities, an important step for increasing the likelihood of a successful bridging consists in designing the research perspectives and strategies accordingly. In this respect, the adequate combination of so-called ‘emic’ and ‘etic’ research perspectives is crucial. Before describing their interplay in this research project, I briefly introduce the concepts in the following.

Historically, the terms ‘emic’ and ‘etic’ stem from two strategies introduced in linguistics by Kenneth Pike in the 1950s[20] and later adapted by cultural anthropologist Marvin

[20] They were first formulated by Kenneth Pike in 1954, later elaborated in “Language in Relation to a Unified Theory of the Structure of the Human Behavior” (Pike 1967) and first included in the Supplement to the Oxford English Dictionary in 1972 (cf. Bruchfield (1972), cited in Headland (1990)). Both terms were derived from linguistic notions: ‘Emic’ from the notion of ‘phonemics’, a sub-discipline in linguistics that strives to identify all the sounds or phonemes used within one language. ‘Etic’ is derived from the term ‘phonetics’ that examines the functions of sounds

Harris in his publication “The Nature of Cultural Things” (1964)[21]. Eventually both perspectives were recognized as valuable and potentially complementing approaches for studying social behavior (Patton 2010; Xia 2011) while it also became apparent that a strict delineation between etic and emic approaches is not tenable given that mixed phenomena generally abound in the globalized 21st century (Antweiler 2008).[22]

Emic research is characterized by its focus on studying one culture in-depth, with no or only secondary interest in cross-cultural comparison and no intention to distill universal phenomena. Members of the culture studied are considered the main source of information for comprehending their culture, regardless of the expertise of potential outsiders. Consequently, the culture’s members’ actions, words and beliefs are given central stage in order to arrive at an understanding of why local people live the way they do. An emic perspective therefore centers on how insiders make sense of their culture, in terms meaningful to them; it strives for “look[ing] at things through the eyes of members of the culture being studied” (Willis and Jost 2007:100). To do so, researchers strive for as blank a slate as possible as initial position, striving to distance themselves from preconceived notions and concentrate on direct observation and interaction.[23]

Etic research, in contrast, explicitly focuses on identifying common phenomena across cultures and on researching cross-cultural differences. Taking an etic view on a culture implies taking the perspective of an outsider looking at a specific phenomenon and collecting information that provides insights and answers to questions raised by outsiders. It relies on existing theories and approaches that arose from outside the culture studied and grounds its research on preconceived theories, concepts and hypotheses about culture in general for studying specific cultures. The aim of etic accounts therefore consists in reaching a certain ‘cultural neutrality’ to limit observer biases of all kinds.[24]

---

within a language irrespective of their meaning, seeking to identify the universally used sounds in different languages to develop a universal language coding system (Agar 2011; Olive 2014; Yin 2015).

21 Instead of concentrating upon the beliefs and meanings of the insider (emic) perspective, Harris emphasized to pay attention to the material (i.e., cultural, spiritual and political) causes behind these meanings and beliefs. He understood an ‘emic’ approach as one that is centered on one culture whereas an ‘etic’ approach entails the comparison of at least two cultures with the aim of identifying common characteristic (Olive 2014).

22 In this context, Antweiler (2008) underlines that by and large, contemporary people no longer live in exclusive life-worlds with specific identities, but move through a number of mixed and changing life-worlds and identities, which in turn renders any strict delineation obsolete.

23 The advantage of an *emic* research approach consists in the researcher arriving at more culturally rich information, not least due to him/her placing him-/herself within the culture; disadvantages include the double risk of, *first*, the insights being only fragmentary due to the researcher’s own value system and personal characteristics (age, gender, race, ethnicity etc.) that steer and potentially limit the study and of, *second*, such studies leading to biased results as too much familiarity and blending could obscure the view on what aspects of a culture might be of interest from an outside perspective (Otten and Geppert 2009; Yin 2015).

24 The advantage of an *etic* research approach lies in identifying cultural traits that occur cross-culturally and in abstaining from altering the culture under study by refraining from direct interaction and integration. Disadvantages extend to the difficulty to gain access to specific private rituals crucial for comprehending a culture, to the fundamental epistemological problem that people have a tendency of acting differently when being under observation and, lastly, to the risk of mistaken conclusions and generalizations by outsiders (Otten and Geppert 2009).

In the present research, I opt for using the two perspectives at different stages in a complimentary way. The 'etic flavor' is more than evident: Ultimately, this research strives for elaborating a heuristic within the broader scope of the scientific knowledge tradition and is, as such, etically motivated. From an outsider position, it invests in identifying and organizing the main insights and findings from various academic disciplines with rather slow interdisciplinary exchange on the topics of 'knowledge' and 'locality' in a structured, systematic and comprehensible manner. It is thus etically grounded in that it strives to elaborate a generically valid and comprehensible framework consisting of formalized and interrelated concepts that allow for all kinds of comparisons.

By contrast, the 'emic' perspective is more indirect, yet not less central for this research's overall inclusive intention. As it is beyond this research's scope to conduct actual interviews with local knowledge holders to find out how they would like to have the discourse on local knowledge (re-)structured, I had to recur to two alternative approaches: First, I built on the few statements from anthropological literature where local people described, or rather deplored, their almost habitual instrumentalization, criticizing that research projects were seldom interested in them as human beings, but rather as holders of specific factual knowledge that turned out to be of interest to Westerners, resulting in it being extracted and de-contextualized. To counteract this widespread tendency of primarily focusing on facts and figures, I conceptualize knowledge from the beginning as broadly as possible, making sure that the factual dimension of knowledge is included into the framework, but not disproportionately weighted.

Given that actual field research was beyond the scope of this research, I had to model the act of 'moving in unknown territories – or localities' and trying to make sense of it. To do so, I relied on my experiences of working in unfamiliar places in remote regions of developing countries, countless discussions with local people during these prolonged stays and a long-standing reading experience of anthropological accounts from all over the world. In terms of the actual framework, the main goal was to try to conceptualize it in its fundamental structure in as broad and inclusive a manner as possible in order to accommodate as many potential answers as possible. I consider this focus on inclusiveness and broadness to be pivotal as it is the best guarantee to allow for emic perspective to find room in the framework's etically motivated categories.

d) Role of 'understanding' in this research

While this research's object is primarily 'knowledge' and modifications thereof (cf. chapter 1.3.2), another dimension pivotal for the undertaking of 'understanding local knowledge' has to be stressed: the actual activity of *understanding* the object itself. This en-

tails the processes of perceiving, processing, contextualizing and interpreting the information transmitted against the backdrop of one's own mental dispositions and structures acquired during socialization, education and professional training.

Integrating this dimension opens up a whole new field, in addition to implying a rather radical shift in attention from objects to people: Whereas examining local knowledge represents a factual undertaking, aiming at gaining a clear understanding of a given object in the outer world – even if it is such an elusive one as local knowledge – researching the aspect of understanding turns the attention to the individuals involved and their inner workings involved in understanding local ways of knowing. It could be seen as a form of 'meta-category' that studies not the object itself, but the conditions under which said object is examined. In this vein, great attention is directed at inner processes, structures and dispositions[25]; accordingly, understanding, as conceptualized in this research, is reflexive in character.

While this situation leaves no doubt whether the topic of understanding would merit to be studied in its own right (cf. chapter 8.4 on research desiderata), the scope of this research only allows as much as integrating the dimension in view of its pivotal role and sketching it along general lines to integrate the main idea. As for the latter, the general lines characterizing understanding represent my personal investment in the sense of an 'inference to the best explanation' (cf. chapter 4.4.3). This underlines that understanding plays an auxiliary role in this research compared to the attention allocated to 'knowledge' or 'locality'. Thus, there is no claim to, or attempt at, providing an independent, comprehensive literature review on the related academic debate. Rather, given the semantic overlap of the terms 'understanding' and 'knowledge' and the similarities in the respective academic debates, I take advantage of the literature on 'knowledge' (cf. chapter 5) and analyze it with respect to references informing 'understanding', i.e. references to the actual process of 'making sense'.

e) Role of 'sustainable development' in this research

At the onset of this research, I invest at different stages into outlining the concept of sustainable development in detail before identifying a set of requirements from the literature by means of which I determine how sustainable development is conceptualized in this research. Importantly, the concept does not form a part of the framework for 'understanding local knowledge'. Rather, it acts as a 'canvas' forming a normative background setting against which the framework is construed and with which it has to com-

[25] To study the notion of 'understanding' in-depth, additional academic disciplines, in the first place psychology, would need to be consulted.

ply. Thus, once the concept of sustainable development is generally described (cf. chapter 2.2) and the set of requirements is identified (cf. chapter 3.2.2), the notion takes a back seat for the greater part of this research. It is only consulted again in the concluding chapters of this research when I evaluate and discuss whether and to what extent the framework developed is compatible with the previously established set of sustainability principles. Methodologically, this implies that the basic normative tenets constituting this research's understanding of sustainable development as defined in chapter 3.2.2 need to be necessarily taken up and reflected in the actual framework. Correspondingly, chapter 8.2.3 discusses the extent to which the principles of sustainable development are indeed incorporated into the actual framework developed in the course of this research project.

1.3.3 Challenges related to cross-epistemological research

Elaborating a general framework for understanding local knowledge amounts to an undertaking rich in challenges. They regard two types in particular, namely organizational and epistemological challenges.

On the one hand, this research's organizational set-up has undeniably some inherent limitations that are foremost linked to this project not forming part of a bigger research scheme, but being an individual, extra-occupational initiative with corresponding resources. As a result, co-producing such a framework in an actual interdisciplinary or even intercultural setting was no option nor was the application of the framework in a subsequent case study, which would have had allowed to apply, complement, refine and validate the framework in a practical context. This, in turn, would have contributed to paving the way for the elaboration of a practical instrument on the basis of the theoretical framework.

On the other hand, the challenges are epistemological in nature and thus inherent to the subject-matter of tackling alien knowledge forms in general. They entail the very undertaking of studying non-Western knowledge forms by means of Western conceptualizations of knowledge – a starting point considered problematic, if not untenable by certain scholars. They deem such a gap to be fundamentally unbridgeable for outsiders as they consider comprehending the nuances of a particular culture to be impossible unless one firmly "resides within that culture" (Olive 2014:6).

As the initiator and author of this project I am aware of these limitations and concerns, but do not consider them to be reasons salient enough to refrain from the undertaking altogether. In fact, in my understanding, when looking at the fundamental epistemologi-

cal challenges involved in studying the topic, I take the view that there is no single correct way to approach the issue, but that, on the contrary, efforts need to be first diversified and then pooled with the aim of integrating different perspectives on the topic to jointly produce substantial new insights.

Thus, walking away from the topic is no viable alternative, all the more in view of local knowledge's current dire predicament and its potentially far-reaching contribution to advancing sustainable development. In all its facets, local knowledge is a reality as much as encounters between different epistemologies will not come to an end, on the contrary – intercultural contact can only be expected to rise in the future due to the ever-increasing globalization. Thus, while researching local knowledge comes with epistemological challenges, they form part of the overall parcel. I therefore consider it most adequate to accept them as inevitable characteristics of such research endeavors and strive for disclosing and critically discussing the challenges encountered so that interested parties can contextualize the findings.

Against this backdrop I start from the assumption that 'bridging between the (potentially) unbridgeable' and studying the interrelation between Western scientific knowledge and local ways of knowing is worthwhile when acknowledging from the beginning that the approach to local knowledge chosen in this research can only ever be an approximation to local realities and necessarily represents a cultural translation that is primarily directed at Westerns in its present form. It does not – and cannot – describe how things really are for local communities. In that I follow Sillitoe for whom working with local knowledge requires a clear distancing "from any pretense of achieving an understanding of others as they understand themselves, or, worse, better than they understand themselves" (1998b:239).

1.4 Structure of the thesis

This research consists of eight chapters. With the aim of introducing and contextualizing the research topic, **chapter 1** delivers a general problem exposition. I start in chapter 1.1 by describing local knowledge from two perspectives: On the one hand, I outline its various roles and functions on local, regional, national and global levels and the existing global policy support in the context of international policy frameworks related to sustainable development (chapter 1.1.1). On the other hand, I address local knowledge's current predicament, i.e. its multifaceted and almost epidemic marginalization and erosion, the causes underlying these processes and the potentially impending conclusive loss of many of its specific forms, the ramifications of which are hard to gauge.

Against this rather bleak background, I outline the research aim and the related questions that guide this project (chapter 1.2), along with a description of its overall methodological approach (chapter 1.3) and the structure of the thesis (chapter 1.4). The chapter closes with a description of the contributions to the broader scientific debate on local knowledge I pursue to make in this research (chapter 1.5).

Chapter 2 consists of extended literature reviews of the current debates on two concepts central to this research, namely 'local knowledge' (chapter 2.1) and 'sustainable development' (chapter 2.2). I thereby cover contributions from the academic and applied domains whereby I focus for the latter on the field of development cooperation. On the basis of these two literature reviews, a third layer (chapter 2.3) studies the interrelationship between the two concepts, starting with the role and potential of local knowledge for promoting sustainable development (chapter 2.3.1) before examining the effects of the concept of sustainable development on local knowledge (chapter 2.3.2). Such an approach allows me on the one hand to analyze and compare characteristic conceptualizations of both notions. On the other hand, it gives me the opportunity to identify knowledge gaps in the related academic and applied debates and to outline how I intend to contribute to mitigating these gaps by means of a set of specifications (cf. chapter 1.3.2) the future framework needs to meet.

Against the backdrop of the reviews in chapter 2, **chapter 3** specifies this project's understanding of the key notions 'local knowledge' (chapter 3.1) and 'sustainable development' (chapter 3.2). In regard to 'sustainable development', which serves as the framework's 'normative canvas' (cf. chapter 1.3.2), specifying the concept implies at the same time determining basic normative requirements that need to be met by the heuristic to be developed in chapter 7. In addition to detailing these two notions, a third term is sketched for comprehensiveness and clarity, namely the notion 'understanding' (chapter 3.3), the last element of the composite term 'understanding local knowledge' and this project's actual focus. 'Sketched' is thereby deliberately chosen and underlines that in view of this research's scope, I opt for a generalized approach to 'understanding' as I consider it to be best suited for integrating the central aspect of a 'reflexive layer' into the argument and, eventually, into the framework.[26]

Chapter 4 describes the overall procedure and specific methodology applied. To that end, chapter 4.1 outlines the motivation behind choosing a framework approach before chapter 4.2 details the overall procedure applied in analyzing the literature in the following chapters 5 and 6. Chapter 4.3 provides a tentative systematization of the terms

[26] As explained in chapter 1.3.2, the scope of this project does not allow for a grounding 'understanding' in a way comparable to 'knowledge' or 'sustainable development'.

constituting the notion of ‘understanding local knowledge’ – a systematization that serves as starting point for the in-depth literature analyses in chapters 5 and 6. For the purpose of rendering these literature analyses and the final systematization of the three terms resulting thereof more accessible and comprehensible, chapter 4.4 anticipates the results of these analyses. To that end, it outlines the so-called ‘dimensions’ or characteristic traits constituting these terms as identified in the literature consulted (for ‘knowledge’ in chapter 4.4.1, for ‘locality’ in chapter 4.4.2 and for ‘understanding’ in chapter 4.4.3).

Against the backdrop of these systematizations, I study in **chapter 5** the main term of this research, ‘knowledge’, in an extended literature analysis across a number of disciplines, next to examining the literature with respect to additionally informing the auxiliary notion of ‘understanding’. More precisely, introductory chapter 5.1 tackles methodological questions and discusses the background of the literature selection, expectations towards said literature and the overall structure the chapter. Turning to *philosophy,* chapter 5.2 analyzes contributions from epistemology, including contributions to the debate on the types of knowledge (chapter 5.2.1), the criteria for the validity of knowledge (chapter 5.2.2) and the various sources of knowledge (chapter 5.2.3). It closes with a summary of the philosophical foundations for ‘knowledge’ identified in the previous chapters that eventually need to be reflected in the heuristic (chapter 5.2.4).[27] Chapter 5.3 proceeds to examine the *sociological contributions* selected for this analysis*,* outlining contributions by Alfred Schutz (chapter 5.3.1), Erving Goffman (chapter 5.3.2) and Pierre Bourdieu (chapter 5.3.3). A summary of the sociological foundations for ‘knowledge’ is provided in chapter 5.3.4, followed by a summary of the sociological foundations for ‘understanding’ (chapter 5.3.5). To close, chapter 5.4 outlines *anthropological perspectives* I consider crucial with respect to broadly conceptualizing the framework for ‘understanding local knowledge’. More precisely, this involves contributions by Fredrik Barth (chapter 5.4.1), Florence Kluckhohn, Fred Strodtbeck and Michael Hills (chapter 5.4.2) and Brent Berlin (chapter 5.4.3). To close, I provide summaries on the anthropological contributions to ‘knowledge’ and ‘understanding’ in chapters 5.4.4 and 5.4.5 respectively.

In parallel to chapter 5, **chapter 6** analyzes the concept of locality across a number of academic disciplines and identifies salient aspects that need to be considered when construing the framework for understanding local knowledge, whereby I understand and conceptualize local knowledge as a *localized form of knowledge*. To that effect, chapter 6.1 provides an overview on the general debate on ‘locality’ in the social sci-

[27] In regard to philosophy’s contribution to informing ‘understanding’ cf. chapter 5.1.4.

ences and humanities (chapter 6.1.1) and, more specifically, in anthropology and ethnography (chapter 6.1.2). In chapter 6.2, I discuss the background of the literature selection, expectations towards the literature and the overall structure of the chapter. Against this backdrop, chapter 6.3 proceeds to outlining selected anthropological contributions to the debate on knowledge, including 'multilocality' (chapter 6.3.1), 'translocality' (chapter 6.3.2), 'globalization/glocalization' (chapter 6.3.3), 'global cultural flows' (chapter 6.3.4), 'multi-sited ethnography' (chapter 6.3.5), and, lastly, 'hybridity' (chapter 6.3.6). In chapter 6.4, I recapitulate the insights gained from examining the multidisciplinary literature on 'locality' for characteristic dimensions generically describing 'locality'.

Chapter 7 describes the actual development of the framework for 'understanding local knowledge'. It starts with a chapter on the framework specifics (chapter 7.1), covering the purpose of the framework (chapter 7.1.1), its theoretical characteristics (chapter 7.1.2) and the actual method for developing the concepts that eventually constitute the heuristic (chapter 7.1.3). Against this backdrop, chapter 7.2 develops the 'concept of analyzing knowledge' before chapter 7.3 elaborates the 'concept of analyzing locality'. Chapter 7.4 closes the triplet with developing a generalized 'concept of understanding', while concluding chapter 7.5 integrates all concepts into the overarching 'framework for understanding local knowledge'.

Chapter 8 engages in a synthesis of all the elements tackled and discusses this research's contribution to advancing the topic of understanding local knowledge. To this end, chapter 8.1 condenses the findings gained from the various stages (or chapters) while chapter 8.2 discusses its contributions in terms of generally advancing the debate on local knowledge. This entails analyzing a) whether and to what extent this research provides answers to the overarching research questions from chapter 1.2, b) whether and to what extent the specifications for the framework development formulated in chapter 1.3.2 are met and reflected in the heuristic and c) what potential benefits result from working with a framework that is specified in that manner. Against this backdrop, chapter 8.3 continues with a critical discussion of the inherent epistemological challenges linked to researching local knowledge before chapter 8.4 closes with an outlook on further research opportunities.

1.5 Motivation

The overarching motivation for this research consists in proposing a novel approach to the topic of 'local knowledge' by elaborating a systematic, structured, generic, compre-

hensive, theory-guided and interdisciplinary conceptual-analytical framework for understanding local knowledge as a basis for research or development initiatives involving in some way or another local communities and their wealth of knowledge. In other words, I envisage discussing the phenomenon of local knowledge encompassingly, going beyond traditional approaches stemming (mostly) from anthropology with the aim of inciting, at best, a genuinely interdisciplinary debate. Against this backdrop, the framework envisaged represents an approach designed to build bridges between different epistemic communities and academic disciplines. This way, I hope to contribute to proposing alternatives to what might constitute potentially insufficiently informed and/or inadequately designed research and development projects that can have detrimental effects on local communities, in addition to impeding endeavors towards promoting sustainable development.

Choosing to opt for such an inclusive and overarching approach allows me to pursue seven specific research interests:

First, with respect to the topic of local knowledge itself, the approach allows me to attribute central stage to the local perspective: Leaving traditionally used 'one size fits all'-approaches behind, the framework's characteristics are designed such that they center on the local perspective, i.e. on the ways how to facilitate analyzing how local people see, understand and assess their world, livelihood and development paths and options – to the extent this is epistemologically feasible. It strives to identify how local people constitute, authorize and validate their knowledge and practices, thus contributing to developing methods that meaningfully include local knowledge in development and/or research initiatives. Such a heuristic makes local communities into active participants in these initiatives, from design to management to evaluation, as called for by a number of local knowledge researcher from different disciplines (cf. e.g. Carvalho and Frazão-Moreira (2011); Vandebroek (2011)).[28] This contrasts with earlier approaches that did not invest as much into getting familiar with the overall livelihood of the local population, their worldview and their choices, but were prompter to promote perspectives and assessments by (often international) development agencies or research institutions.

Indirectly, this research thus seeks to promote meaningful participation of local people in research and development endeavors by means of facilitating a structured and at the

[28] In this context, Sillitoe underlines that the agency needs to be with the local population: "Consequently, it would be inappropriate for me to conclude this article, in search of some upward flourish, by suggesting what might be the contours of any alternative view of development, as one reviewer of this article suggested, because the *whole premise of the IK agenda is that this is for the so-called 'beneficiaries' to do*." (Sillitoe 2010:25–26, italics by the author)

same time sufficiently complex approach. Doing so could facilitate the communication between the local population and researchers and/or development personnel – a concern formulated by numerous academics working on the topic (cf. e.g. Antweiler (2004); Baumgartner et al. (2002); Sillitoe and Barr (2004)).

A *second* motivation for opting for an inclusive approach is founded on the conviction that the overall debate on 'local knowledge' could greatly benefit from being led within the frame of broader debates on how future societal development could and/or should unfold. As such, this research is led by the motivation to contribute to systematically integrating the concepts of local knowledge and sustainable development and studying their interrelationship and relevance for each other. This way, I strive to propose countermeasures against not only the existing fragmentation of the academic and applied debates, but also against a certain, rather recent inertia in the academic debate on local knowledge.

Third, next to placing the debate within a greater context, my research design is also motivated by a strong inclination towards interdisciplinarity. The latter is a crucial characteristic of this project and differentiates it from the majority of more disciplinary studies. Explicitly opting for a broad interdisciplinary approach allows me to take advantage of combining the perspectives on local knowledge from anthropology, sociology, philosophy, geography, the ethnosciences and other disciplines. While there is no doubt that the notion of local knowledge is most firmly rooted in anthropology and the ethnosciences, I consider insights from other disciplines highly valuable, especially with respect to broadening the notion and making it productive for industrializing and industrialized countries as much as for rural and urban contexts. In other words, I start from the assumption that there is a multitude of valuable insights on the topic to be identified and explored in various academic disciplines – insights that I deem to have the potential to eventually be meaningfully assembled into a framework such that it could provide researchers and practitioners with a comprehensive approach to local knowledge. In this manner, this project strives for building bridges between academic disciplines in regard to local knowledge research. Developing a coherent and theory-based local knowledge framework that takes account of the many disciplinary perspectives on the topic in a structured and systematic way might therefore also potentially facilitate its uptake by academics other than social scientists (cf. Sillitoe (1998b)). Especially natural scientists show a certain caution when it comes to working with instruments developed in the social sciences[29] – not least because of a certain reservation towards qualitative

[29] This reservation might also be linked to their disciplinary backgrounds and specializations and stem from many natural scientists having experienced rather little exposition to – and therefore gained little familiarity with – topics such as 'intercultural epistemology' and 'intercultural communication'.

and descriptive approaches. Bridging this gap by elaborating an approach to local knowledge that integrates a collection of perspectives on the topic might therefore counteract the current situation in which studies on local knowledge carried out in the social sciences tend to only marginally inform projects in the natural sciences.

The *forth* motivation for this research is the realization that the academic and applied debates might benefit from a heuristic that approaches the topic of local knowledge from a conceptual-analytical perspective instead of an empirical one, as is the case in the majority of studies. This way, instead of starting from a specific local knowledge form and building bottom-up as it is often done in anthropologically inspired contributions, I opt for a theory-based approach that invests in identifying suitable dimensions and in establishing meaningful relations among them to systematically 'map out' the topic and condense the insights in a comprehensive framework. In terms of basic requirements, said framework needs to be able to cover and accommodate all kinds and types of local knowledge forms. This implies abstracting from specific forms and analyzing the notion from a theoretical perspective.

Fifth, this research is additionally motivated by the belief that the overall understanding of 'local knowledge' would profit from a different analytical approach to the very term – different in that it chooses to elucidate it by starting with dissecting it in its two constituents, namely 'knowledge' and 'locality'. In other words, my approach entails analyzing the two notions of 'knowledge' and 'locality' separately before joining them in an aggregated, spatially-oriented understanding of 'local knowledge'. As such, the understanding of 'local knowledge' builds on 'knowledge', but is distinct from the latter in that the meaning of 'local knowledge' is substantially generated by the modifier of 'locality'. Opting in the first place for the notion of 'local knowledge' (over other terms) and analyzing 'locality' in its own right allows me to take advantage of the substantial conceptual advancements on locality, place and space in a number of academic disciplines that emerged in the wake of the so-called 'spatial turn'.

Sixth, yet another motivation consists in contributing to advancing the aspect of reflexivity in the debate on local knowledge. To this end, I incorporate into the heuristic what I refer to as layer of 'reflexive understanding'. Its function consists in guiding the researcher and/or development practitioner along very general lines in his/her own process of creating an understanding across epistemologies. It does so by encouraging him/her to reflect on the basic uncertainty inherent to attempts at cross-epistemological understanding and pay attention to structural, organizational and personal constraints and biases shaping the course and outcome of the project in question. Next to ground-

ing one's results and insights in the very process of creating those, I consider this layer of 'reflexive understanding' to be especially significant in the context of research bridging across different epistemologies and cultures. There, it is paramount that one does not make one's approach into an absolute, but is able to take a step back from the insights gained and become aware of their construed nature – construed according to the best inference, but still construed in nature. Generally speaking, when working in inter-epistemological contexts, a certain reflexive caution is therefore well advised, combined with an inquiring beginner spirit that tries to be aware to the best extent possible of potential implied structures, constraints and related assumptions.

Seventh and lastly, opting for a structured, systematic and theory-guided approach to local knowledge also allows facilitating comparative research within and across disciplines and harbors the potential of the results being transferable, both of which represent crucial concerns underlying the interdisciplinary orientation of this project.

2 Background debate on ‘local knowledge’ and ‘sustainable development’

All notions central to this research – ‘local knowledge’, ‘sustainable development’ and the interplay of the two of them[30] – have a multilayered and multidisciplinary conceptual history as well as, consequently, multiple meanings and understandings attached. In the case of ‘local knowledge’, its conceptual history carries special weight as the notion ‘knowledge’ has been contemplated in and of itself by mankind for thousands of years. In addition, contributions to the local knowledge debate stem not only from various academic disciplines, but also from applied local knowledge research conducted by organizations involved in development cooperation and/or environmental protection. As for ‘sustainable development’, its conceptual breath results from it being relatively undefined and flexible and, at the same time, from finding itself at the intersection of various disciplines, all adding to the complexity of the debate on ‘sustainable development’. Given the depth of these two notions, it comes as no surprise that the combination of the two – the interplay between local knowledge and sustainable development – is of a comparably complex character.

The goal of this chapter is therefore to explore this complexity by providing a broad literature review on the two terms and their interrelation. To that end, I start in chapter 2.1 by outlining the debate on local knowledge as discussed in various academic disciplines as well as in applied development research. In this context, I also cover publications featuring one of the related terms such as ‘traditional knowledge’, ‘traditional ecological knowledge’, ‘indigenous knowledge’ and others, given that in this research ‘local knowledge’ is conceptualized as encompassing umbrella term (cf. chapter 1.1). Chapter 2.2 is dedicated to sketching the manifold approaches to the concept of sustainable development before I describe in chapter 2.3 the interplay between local knowledge and sustainable development as the arguably predominant societal development model currently available. To that end, I start with the contribution of local knowledge to sustainable development (chapter 2.3.1) before reversing the perspective and describing the contribution of sustainable development to strengthening local knowledge (chapter 2.3.2). All three debates – on ‘local knowledge’, on ‘sustainable development’ and on the interrelationship between the two – follow a similar structure: I first provide an overview of the respective literature before concluding with a short summary. Chapter 2.4. summarizes the insights from the three debates and concludes with a short synthesis, outlining research gaps that manifested in the course of the literature reviews.

[30]For reasons detailed in the introductory chapter 1.3.2, the notion of ‘understanding’ is not being discussed in full detail, but can only be sketched along its main characteristics.

2.1 'Local knowledge'

Contributions to the topic of local knowledge mainly stem from two distinct sources – on the one hand from academia, foremost from anthropology, the ethnosciences and, to a lesser extent, sociology, and on the other hand from development cooperation and affiliated research institutions focusing on what is usually called 'applied local knowledge research' or 'applied development research' (for a detailed analysis of the interrelationship between academia and applied research cf. Schareika (2004); Sillitoe (1998c, 1998b)). While there was no continuous interaction or explicit interaction between the two strands of debate, they nevertheless heavily draw on each other's perspectives and insights and any attempt to delineate them in an academic and an applied debate necessarily falls short of adequately displaying the interwoven character of the debate and the complexity resulting thereof.

Against this backdrop and striving to mirror the interrelationship in its complexity, chapter 2 presents the two perspectives and their interrelation. To that end, I start in chapter 2.1.1 with discussing fundamental terminological aspects and related epistemological assumptions before outlining in chapter 2.1.2 the rationale behind my opting for the term 'local knowledge' for this research at the expense of other widely applied notions. In chapter 2.1.3, I provide a brief historical summary of the debate on local knowledge in both academia and applied development research while chapter 2.1.4 is dedicated to describing a number of descriptive-enumerative approaches to tackling 'local knowledge'. Chapter 2.1.5 then characterizes the role and function of both knowledge and local knowledge specifically for development cooperation before chapter 2.1.6 summarizes the extensive debate on the relation between local ways of knowing and scientific knowledge. Chapter 2.1.7 concludes by providing a summary of the insights from the literature review on local knowledge.

2.1.1 Terminological questions

As mentioned in the introductory chapters, there is a considerable variety of terms and concepts when it comes to denoting the knowledge form that is at this research's center, resulting in its epistemological status being far from clear (Antweiler 2004). The numerous terms in use (>33 notions)[31] reflect not only basic, often implicit epistemological

[31] Compiling a list of denotations for local knowledge and its sub-domains, Antweiler (1995) identified 23 versions in the respective literature from the years 1960-1994. In 2004, his list already consisted of 33 terms, all carrying a specific accentuation, namely indigenous knowledge, knowledge of indigenous peoples, indigenous science, local knowledge, endogenous knowledge, autochthonous knowledge, sustainable knowledge, traditional knowledge, native knowledge/expertise, people's knowledge/science, farmers' knowledge, folk knowledge/science, peasants' knowledge, partisan knowledge, little tradition, community knowledge, ethnic knowledge, cultural knowledge, culturally specific knowledge, ethnoscience, indigenous technical science, cultural knowledge system, cultural belief system, everyday/mundane/vernacular knowledge, know-how, performance knowledge, experiential knowledge, embodied knowledge, science concrète, situated knowledge, mêtis, the 'science of muddling through' and, lastly, ex-

assumptions but also political interests and power structures. As such, they are all in some way biased in that next to their salient aspect they carry specific connotations, implicit (political) agendas and quite often an implied opposite which also explains why parts of the debate are characterized by a strong advocacy approach. In the last decades, this inherent multilayeredness led to an extensive and controversial debate on the use of an appropriate terminology (Antweiler 2004; Kuper 2003; Pottier et al. 2003; Sillitoe 1998b; Warren, Slikkerveer, and Brokensha 1995).[32]

This debate resulted in the understanding that each of the terms has its own advantages and drawbacks. Accordingly, the specific choice proved to in the first place point to the author's own interests and preferences as well as his/her context-dependent, cultural, geographical and/or disciplinary accentuation. However, the choice is not entirely arbitrary as across the literature, the use of the notions is not evenly distributed with certain terms being significantly more often applied; they include 'traditional knowledge', 'traditional ecological knowledge', ‘indigenous knowledge' and 'local knowledge' and are briefly characterized in the following paragraphs.

The term **traditional knowledge** accentuates the temporal dimension and underlines knowledge accumulation and transmission over generations. It is widely used in the ethnosciences and anthropology and criticized for suggesting stasis and homogeneity (Schultze 1998) while obscuring dynamism and capacity to adapt and change. It derives its meanings from variations on the problematic modernity-tradition dualism and is set against modernity, hybridity and dynamics (Ellen and Harris 2000). Correspondingly, traditional knowledge is at times collectively connoted as being “outdated or primitive, and thus of little use to solve problems of modern society” (Vandebroek et al. 2011:1). Moreover, the term itself leaves undetermined as to how long it takes for knowledge to become traditional knowledge and how tradition itself could be defined on an abstract basis to make the term tangible and transferable. In contrast, **traditional ecological knowledge**, a sub-form of traditional knowledge, relates to a specific subdomain of traditional knowledge, namely to the animated world of ecosystems, plants and animals. It is therefore a more limited term pointing to a specific perspective and a related field of interest. In addition, it seems to be the term of choice for legal sciences as it represents the most often used notion in the context of debates on intellectual property rights.

perimental knowledge (Antweiler 2004).

[32] This debate also entailed moving away from terms that proved to be inappropriate or even detrimental to the cause: “The narrow notion of 'indigenous technical knowledge' reveals a fallacy in some scientific circles, namely that it can be abstracted as culturally disembodied technical knowledge.” (Sillitoe 1998a:188)

Another widely used term, **indigenous knowledge**, denotes culturally specific self-contained knowledge and restricts it to specific peoples, implying at the same time isolation and uniqueness. Most commonly, it is used with respect to peoples and communities in Latin America whose indigeneity is established. Indigenous knowledge defines knowledge in relation to, or rather, opposition to Western (scientific) knowledge, implying by this contrast many dichotomies (Schultze 1998) and entailing a problematic discussion about essentialism. In addition, working with the term 'indigenous knowledge' brings about the (potentially) challenging task of defining and, consequently, restricting oneself to 'indigeneity' – a politically loaded, albeit somewhat vague term that at the same time entails excluding knowledge that stems from non-indigenous sources. This might also concern contributions by potentially highly knowledgeable communities or individuals in view of them lacking the official and politically powerful recognition as 'indigenous peoples' living in the specific location from time immemorial or, rather, what amounts to being perceived as immemorial. Finally, and similar to the notion of 'traditional knowledge', it runs the risk of conceptualizing the knowledge in question as static and bounded, potentially paving the way for romantic idealizations of indigenous peoples as 'eco-saints' or 'noble savages'[33] living in eternal harmony with nature (Antweiler 2004:5–6).

The term **local knowledge** can easily be applied to a broad variety of contexts as it only requires knowledge to originate in some way or another from a given local context, rendering it a highly flexible notion. This flexibility is, at the same time, often considered to be its main weakness, as the term 'local knowledge' is criticized for its distinct lack of specificity and its overall vagueness (Ellen and Harris 2000). In addition, the notion is said to imply, if also unintentionally, a certain underdevelopment, backwardness and tendency towards conservatism (cf. e.g. Antweiler (2008); Ruotsala (2008)), most prominently when contrasted with its counterpart 'global'. In contrast to traditional knowledge focusing on the temporal dimension, local knowledge concentrates on the spatial dimension and is characterized by its "situatedness in local culture and environment" (Antweiler 2004:3). In other words, local knowledge is "local to the extent that [it is] acquired and applied by people with respect to local objectives, situations and problems […and] draw[s] on locally available raw materials and energy sources" (Antweiler 2004:3). Importantly, 'local' does not have to refer to a location in a strict sense – although it very well can do so – but rather to knowledge as being situated both culturally and ecologically. This also explains why local knowledge does not have to necessarily restrict itself to small scale; on the contrary, it can also relate to larger regions such as

[33] For an overview on the debate on the 'noble savage' cf. e.g. Bitterli (1968); Ellingson (2001); Raymond (2007).

in the case of people migrating routinely from one place to another (e.g. nomads or seasonal migrants) and possessing extensive knowledge about these routes and territories covered (Antweiler 2004).

Regardless of the variety of different terms, many studies display a pragmatic attitude towards these terminological issues and certain scholars even use various terms interchangeably. After the initial, more intense debates, these concepts are nowadays commonly considered sharing a common ground and overlap in their meaning to a certain extent. This allows for building on a shared inter-subjective understanding and for postulating a shared semantic space, albeit with distinct topical emphases (Sillitoe 1998a), leaving it to the respective researcher to choose in function of his/her research intentions and substantiate his/her choice accordingly.

2.1.2 'Local knowledge' as umbrella term in this research

As outlined above, all of these notions have their specific drawbacks, emphases and varying degrees of advocacy. For the present research, I opt for the term 'local knowledge' whereby 'locality' is understood in a broad and inclusive sense. The main reason for this choice is that the notion of local knowledge' specifically underlines the spatial dimension that I consider the most promising and salient approach for this research project, mainly for two reasons:

On the one hand, the notion of 'locality' – or more generally 'spatiality' – is among the heavily discussed topics in a number of academic disciplines in social sciences, resulting in a wide range of contemporary theoretical approaches to 'locality'. This is promising as to my best knowledge, the term of 'local knowledge' has only been approached descriptively, but not yet analytically. In this research I strive for the latter by analyzing the composite concept of 'local knowledge' (i.e. 'knowledge' in chapter 5 and 'locality' in chapter 6) for potential new productive and enlightening perspectives on the topic.

On the other hand, the term 'locality' has the potential to function as highly encompassing component when combined with 'knowledge' to 'local knowledge' as all knowledge, to oversimplify matters, is somehow locally situated. This is an important characteristic as the framework to be developed in this research strives for encompassing as many types of alternative ways of knowing as possible, regardless of whether the knowledge in question stems from people with no migration background at all (e.g. indigenous knowledge) or with a longstanding tradition (e.g. traditional knowledge).

In addition to these positive rationales, opting for the rather vague term of 'local knowledge' also allows circumventing potentially problematic, overly narrowing and/or advo-

cacy-loaded tendencies inherent to other terms; these tendencies, in turn, might counteract the very scope of this research, namely to develop an encompassing, conceptual-analytical approach to understanding the phenomenon of local knowledge. As coining a new term was not an option for reasons of compatibility with the existing academic debate, opting for 'local knowledge' proves therefore to offer the most promising advantages and entails the least disadvantages that might steer against the research intentions.

2.1.3 The debate on local knowledge in academia and applied development research

As mentioned earlier, the contributions to the debate on local knowledge stem not only from the academic disciplines of anthropology and sociology and their interface, but to a significant extent also from applied development research. Importantly, the two strands of debate, albeit rather seldom making explicit reference to each other, are intrinsically related to and build on each other. This characteristic adds significantly to the hybrid character and the overall complexity of the debate. Against this backdrop, I invest in the following paragraphs in first sketching crucial early academic contributions from anthropology, sociology and their interface (chapter 2.1.3.1) before moving in a second step to describing the more practice-oriented debate taking place in the interplay between (mostly) anthropology and applied development research (chapter 2.1.3.2), including Nazarea's (2006) formative distinction into 1st and 2nd generation studies.

2.1.3.1 Contributions from academia

Crucial and foundational insights from **anthropology** to advancing the topic include – to only name a few exemplary ones – Malinovski's strong advocacy for the local perspective. Next to pioneering participant observation, he held the view that the anthropologist's goal must consist in obtaining the native's view of his/her own world (1922). Lévi-Strauss (1962) drew the attention to the intellectual nature of humans, regardless of their cultural origin, paving the way for cognitive anthropology and the various ethnosciences in their goal to research classification systems of other cultures. Other impulses stem from the debate on systems of thought, the related scientific study of symbols as well as from cultural ecology (Schareika and Bierschenk 2004). As for the focus on the 'local' as category, Geertz (1992) pointed to the need for detailed and locally specific understandings. Juxtaposing particular settings to cross-cultural comparisons, Geertz advocated for a "commitment to the details of the ordinary and the local as an

analytical means to reach larger conclusions about the social world" (Kraidy and Murphy 2008:338), concentrating on cultural overlaps rather than structural universalisms. In this vein, he argued for understanding cultures as 'systems of interpretation' (Lachenmann 2001).

At the interface of **anthropology and sociology**, Mauss (1954) and Durckheim (1965) argued for the foundation of thinking in the social world. Introducing so-called '(total) social facts', they stressed the idea that human perception plays a role in describing the surrounding world. A couple of decades later, the sub-disciplines of sociology of development (e.g. Long) and anthropology of development (e.g. Bierschenk, De Sardan) invested in re-integrating the broader topic of development into mainstream anthropology and sociology respectively "as an object worthy of attention" (De Sardan 2005:1). Long (2001) turned away from the traditional structuralist-institutional analysis, arguing decisively for applying an actor-centered approach in combination with a social-constructionist form of analysis, both of which he considered indispensable for understanding local contexts. Bierschenk, in turn, advocated for expanding the notion of anthropology of development from the traditional project-based perspective to additionally cover global structural policy matters, aiming at morphing into an "anthropology of global social engineering" (2014:75). In parallel to Long, De Sardan propagates an actor-oriented development anthropology he considers the optimal choice if aiming at exploring under which circumstances anthropological research has the potential to contribute to improving development initiatives, especially if combined with what he coined as an "entangled social logic approach" (2005:11).

Relevant **sociological contributions** to local knowledge in a stricter sense were contributed by the constructivist sociology based on Husserl, Schutz, Berger, Luckmann and by sociology of knowledge (Berger and Luckmann 1966). The development of a so-called 'theory of practice' draw the attention to the realm of informal, everyday practice, looking beyond formally defined bodies of knowledge (Bourdieu 1977; Giddens 1984) and striving to mediate between methodological individualism and traditional structuralist approaches. However, sociology did not go very far in advancing 'local knowledge' as a topic. While studying the concept of knowledge in great detail, it primarily did so from the late 1960s onward by researching almost exclusively the subtopics of 'knowledge society' and 'scientific knowledge'. After the seminal contribution by Berger and Luckman entitled "The social construction of reality" (1966), the topic of mundane everyday knowledge was no longer en vogue in sociological theory building. Rather, attention shifted away from local forms of knowledge and towards the newly established social science discipline of science and technology studies, dealing from the

1970s onward foremost with the influence of society, politics and culture on scientific research and technological innovation and vice-versa (cf. e.g. Latour (1987); Knorr-Cetina (1999); for an overview on science and technology studies cf. e.g. Hackett et al. (2008); Potthast (2010); Rohracher (2015)). As a result, the topic of 'local knowledge' was therefore by and large left to anthropology and the ethnosciences.

2.1.3.2 Contributions from the interplay between applied research and academia

As mentioned in the introductory paragraph, the development of the debate on local knowledge took mainly place in the **interplay between anthropology and applied development research**. This is especially true for what is sometimes called 'development anthropology' where local knowledge is said to have „in many respects [...] always been at the core" (Nazarea 2006:321). Accordingly, starting from the early 1980s onward, numerous anthropologists invested considerable time and effort into validating local knowledge, often by using scientific concepts and methods as frames of reference for assessing the validity of local ways of knowing. As such, research in the 1980s was informed by specific assumptions and methodological principles that strove for an integration of local and scientific forms of knowing, with local knowledge having to prove itself and scientific knowledge acting as a form of 'gold standard'. These underlying assumptions and principles came under heavy criticism in the course of the 1990s.

This general development led Nazarea (2006) to suggest a division of research on local knowledge into two generations, called here for simplification reasons **'1st generation studies'** and **'2nd generation studies'**. In the following paragraphs, I briefly sketch the two types of studies as well as the evolution of the debate.

In Nazarea's understanding, **1st generation studies** were carried out in the frame of the so-called 'ethnoscientific wave': In the mid-1950s and early 1960s[34], the attempt to understand local approaches and contexts gained momentum – a development that culminated in the 1970s and 1980s in seminal publications by e.g. Atran (1985), Berlin, Breedlove and Raven (1974b), Ellen (1979), Hunn (1977, 1982) and Posey et al. (1984). This ethnoscientific research was essentially grounded on cognitive and linguistic principles and relied on systematic data collection and analysis, bringing a certain methodological rigor and theoretical significance to it. At the same time, it was criticized for "effectively eticizing the emic"[35] (Nazarea 2006:321) and for grounding human be-

[34] Examples for this early publication phase include Conklin (1954, 1961), Goodenough (1957) and Frake (1962).

[35] As outlined in chapter 1.3.2, 'emic' and 'etic' are terms used in anthropology and the social and behavioral sciences to denote two types of field research that are at the same time linked to specific viewpoints. While 'emic' means 'as seen from within the social group' (i.e. from the perspective of the subject), 'etic' denotes 'as seen from the outside' (i.e. from the perspective of an external observer).

havior in cognitive processes. However, its crucial contribution consisted in drawing attention to the adaptive nature of classificatory systems and their dependence on the human perception. Classifications came to be understood as “situationally adapted and dynamic devices of particular importance to their users, reflecting an interaction […] between culture, psychology and discontinuities in the natural world” (Ellen 1993:3). The re-valorization and recognition of the local and the specific as relevant categories prepared the ground for distinct applied research on local knowledge, mostly conducted by development institutes and often in close collaboration with aid agencies. This research focused on vigorously documenting and promoting local knowledge and local technologies, which led to knowledge on local ways of knowing becoming an information currency in the international agricultural research centers and the World Bank. This implementation-oriented debate took its start with the very introduction of the concept in the form of the term 'indigenous technical knowledge' in the context of a special issue of the IDS Bulletin[36], published by the research group around Robert Chambers at the Institute for Development Studies at the University of Sussex (Howes and Chambers 1979). Local knowledge was depicted as bounded, static, consensual, non-reflective and unscientific – assumptions that led both anthropologists and development practitioners to deem it legitimate to look for and extract elements of local knowledge for further use in science. Moreover, it was concluded from the assumed consensual character that local knowledge applied uniformly over large regions. On the one hand, this opened development practitioners to the technology, skills and accumulated knowledge of local people in general while at the same time menacing to overload the newly discovered field of local knowledge with exaggerated expectations and claims about its value, general validity and application range (Pottier et al. 2003). In the following year, the publication of a seminal anthology on local knowledge outlining ethnoscientific methods with respect to potential applications in development cooperation definitively triggered a broad and controversial debate among academics and practitioners. Entitled „Indigenous Knowledge Systems and Development“ (Brokensha, Warren, and Werner 1980), it enclosed primarily studies on agricultural topics as well as on cognitive models and classifications of the natural world. In 1995, Warren et al. (1995) published another formative contribution entitled “The Cultural Dimensions of Development. Indigenous Knowledge Systems“ where different methodological and practical approaches to integrating local knowledge into development endeavors were discussed.

[36] The IDS Bulletin is dedicated to analyzing emerging development challenges on an international scale, with IDS standing for “Institute of Development Studies”.

In the academic discourse emerging in parallel, local knowledge triggered a wave of theory-building that surpassed the realm of anthropology (cf. e.g. Nazarea (2006)). The publications primarily concentrated on comparing local knowledge with Western science in order to examine the respective characteristics, particularities and commonalities and proposed suggestions for mutual integration if considered suitable. However, in the 1990s, the dichotomy between science and local knowledge could no longer withstand scrutiny. A postmodern and deconstructivistic wave critically questioned what was considered to be a static, overly idealized notion of local knowledge (Brosius 1999; Ellen and Harris 2000; Parkes 2000), giving way to **2nd generation studies on local knowledge**. Under this new perspective, the previously unitary idea of local knowledge fragmented into a plurality of local knowledges. Consequently, local knowledge came to be perceived of as the manifold, disputable product of a constantly unfolding syncretistic process (Scoones and Thompson 1994; Sillitoe 1998b) and as such as practical and partial, even contingent. To extract, document and bank local knowledge was now criticized as erroneous, if not dubious. Accordingly, such attempts came to be seen an illegitimate abstraction as well as extraction of local knowledge from its context with the primary aim to re-functionalize it to Western development and conservation ideas (Agrawal 2002; Escobar 1998). In addition to the aspect of intellectual hegemony, 2nd generation studies analyzed in detail issues of power, including a critical discussion of the intersection of power and knowledge.

Comparing the two approaches, the differences between 1st and 2nd generation studies consist mainly in different basic assumptions and related research interests. 1st generation research centers on content and related knowledge items, compares and contrasts local knowledge with scientific knowledge and undertakes the effort to legitimize local knowledge along the standards of Western knowledge conceptions (cf. e.g. Warren et al. (1995)). In this early notion, local knowledge was understood as complementing scientific knowledge in locally relevant areas, entailing a rigorous testing and evaluation of local beliefs and practices regarding various sub-domains[37]. However, subsequent research depicted local knowledge as unevenly distributed and questioned the previously dominant idea of “invariant, a-cultural systems of encoding such knowledge” (Nazarea 2006:322), leading to the 2nd generation research. Here, the focus was on researching local knowledge in the context it evolved, refraining from the previously dominant comparison and verification approach. Accordingly, 2nd generation studies center on process and transformation and emphasize the complex character of local knowledge

[37] This testing extended to domains such as e.g. soil classification and enhancement, water conservation and distribution, crop preferences and cultivation, pest identification and management etc.

that is not only intrinsically dynamic and situated, but also often contingent on external opportunities and constraints (cf. e.g. Ellen et al. (2000)). As critically noted by Nazarea (2006), the burden of proving the legitimacy of local knowledge was replaced by the burden to prove authenticity, resulting in vigorous checks if the local knowledge form in question was reified, commodified, imagined or invented. This resulted in a weakening of the previously established status of local knowledge among planners, policy-makers and scholars; it turned the attention away from local knowledge's characteristics of adaptability, resilience and agency, thereby obscuring the dynamic interrelationship between the human actors and the surrounding environment.

2.1.4 Selected theoretical approaches to local knowledge from academia

Several authors note that most of the research on local knowledge concentrates on epistemic content and structure while paying rather little attention to epistemological issues. This results in theoretical, conceptual or analytical approaches to local knowledge being rare; consequently, a coherent and agreed upon framework of local knowledge is said to be lacking to this day (Antweiler 2004; Briggs 2013; Maragia 2006; Sillitoe and Bicker 2004). However, a number of descriptive-enumerative approaches have been brought forward by renowned researchers such as Ellen, Harris, Sillitoe or Antweiler (see below), resulting in these approaches being frequently cited and applied in research settings. Generally speaking, they invest in isolating characteristic features and traits of local knowledge that are considered to be potentially universal and suitable for generically describing local knowledge forms.[38] A selection of these descriptive approaches is briefly outlined in the following paragraphs.

One of the most prominent is the list composed by Ellen (1998) and Ellen and Harris (2000) on the basis of their extended field research. It includes the following ten characteristics: According to them, local knowledge is "(1) local, (2) orally-/visually-transmitted, (3) constituted in the practical engagement, (4) generally rather empirical/empirico-hypothetical than theoretical, (5) repetitive, (6) dynamic, (7) to a high degree shared, (8) fragmentarily distributed, (9) functional, denotative 'know-how' and (10) holistic and integrative" (2000:4–5).

Counter to Ellen and Harris' approach, Sillitoe suggests identifying and defining local knowledge ex negativo by contrast with what local knowledge does not encompass. According to him, local knowledge is not "globally situated, culturally disembedded,

[38] Importantly, the contributions discussed in this chapter focus on the characterization of local knowledge and refrain from outlining methodological approaches and guidelines to incorporate local knowledge into project designs (considerations of the latter type can be found in e.g. Sillitoe (2004:60) or Antweiler (2004, 2012)).

overly systematic, necessarily unified, and abstract" (2010:13). However, in his joint publication with Marzano (2009), Sillitoe offered an alternative route to gaining an understanding of local knowledge, also recurring to a descriptive approach to local knowledge and suggesting a set of commonalities he deemed characteristic for this knowledge form. This set includes a) any understanding rooted in local culture, b) all knowledge shared more or less collectively by a population and used for interpreting the world, it can c) vary between societies, d) originates from a range of sources and e) represents a "dynamic mix of past traditions and present innovation with a view to the future" (Sillitoe and Marzano 2009:14).

In a similar vein, but more comprehensively, Antweiler (2012, based on his modification from 2008) compiled a list of ten interrelated characteristics describing local knowledge as an universal mode of knowing. They include (1) knowledge *plus* skills, (2) adaptation to situational dynamics and variability, (3) empirical local basis and experiential saturation, (4) redundancy and holism, (5) tacit nature of knowledge, (6) informal learning, (7) scientific character, (8) optimal ignorance, (9) evaluation criterion/test basis and (10) resulting actions and problem solutions.

Finally, building on insights by Eliade (1965), Berkes (1993) and Lévi-Strauss (1962), Mazzocchi identifies an additional pair of characteristics he considers representing overarching characteristics of local knowledge, namely on the one hand "the belief in a pervasive presence of the sacred at all levels of reality" (2008:47) and on the other hand the understanding that local knowledge is firmly rooted in myth.

2.1.5 Role of knowledge and local knowledge in development cooperation

In development cooperation, the concept of knowledge turned into an asset in the context of modernization theories, the related paradigm of technology transfer and the critique raised by dependency theorists. Regardless of the fundamental differences between modernization and dependency theories, both considered knowledge and science to be central resources in the overall development endeavors, displaying a distinctly instrumental view on knowledge that left no room for other ways of knowing, as El Berr (2009) concluded in her extensive account on the topic.

This instrumental perspective, she argues, was in turn criticized by representatives of the popular education (i.e. 'educación popular'[39]) who claimed that knowledge imported from outside the development context needed adaptation to be of any use for fostering

[39] 'Educación popular' is a term commonly applied to a broad set of educational endeavors in Latin America that emerged since the end of the first half of the 20th century.

political participation, equality and local development. This resulted in the above described endeavors to integrate the local populations' knowledge into existing scientific knowledge, as such an approach was expected to potentially enrich the scientific knowledge 'imported' into industrializing countries for development purposes (cf. e.g. Chambers et al. (1989)).

In the 1980s, however, this position was challenged, among others by proponents of participatory development approaches (cf. e.g. Pretty et al. (2002)) that were themselves an expression of the paradigm change in development cooperation aiming at more local ownership and empowerment. In this vein, local knowledge was understood as mobilizing local resources (Antweiler 1998; Sillitoe 2007b), especially in the sectors of health, nutrition and management of natural resources (Miehlau and Wickl 2007; Sillitoe 1998b). Consequently, it came to be seen as "possible antidote to the failures of externally driven, transfer-of-technology focused, top-down development" (Pottier et al. 2003:1). The integration of local ways of knowing into development endeavors strove for bridging local realities, practices and development plans with approaches by development agencies, national bureaucracies and (mostly foreign) researchers.

Summarizing, the role and change potential of local knowledge for development purposes remains contested with a majority of earlier studies and certain strands of contemporary research still basing their understanding of local knowledge on a binary opposition between scientific knowledge and local ways of knowing (cf. e.g Antweiler (1998); Schareika (2004)). This opposition comes along with often implicit assessments of the value and relevance of local knowledge with it being understood as either inferior or superior to scientific knowledge. In this respect, El Berr (2009) invests in adapting a typology of various positions towards local knowledge originally developed by Neubert and Macamo (2004) and suggests four different positions or notions that are briefly described in the following paragraphs, namely (a) the positivistic approach, (b) the technicistic approach, (c) the eco-romantic approach and (d) the instrumental approach[40].

(a) The **positivistic approach** generally devaluates local knowledge by taking it for inferior and backward if not holding it responsible for development and conservation gaps. Consequently, such an approach conceptualizes development as 'catching-up development' following the model of Western industrialized countries while heavily relying on capital intensive transfer of technology and science, mediated by mostly foreign experts. By ignoring local knowledge and related local practices, the positivistic approach displays a eurocentric perspective, aiming at saving local populations from un-

[40] As emphasized by El Berr (2009), the following paragraphs describe ideal types; in the reality of applied development cooperation, they mostly occur in mixed forms.

derdevelopment and at integrating them into national state and market system (cf. e.g. Ellen and Harris (2000)). In this conception, the divide between local knowledge and Western knowledge is unbridgeable given Western knowledge's claim for universal validity. This approach was, however, also met with criticism. *First*, it was argued that devaluating local knowledge runs the risk of establishing so-called 'systems of ignorance', created when mundane local knowledge is displaced by scientifically approved expert knowledge that is poorly understood locally (Lachenmann 1994). *Second*, it was recognized that the devaluation of local knowledge can equally come in the form of large top-down development projects aiming at e.g. protecting ecosystems or establishing large national parks – in the majority of cases at the expense of the livelihoods of local communities who are themselves often denied any further access to the newly established protection areas.

(b) In contrast, the **technicistic position** integrates local knowledge into existing development strategies and measures whereby local knowledge is often falsely limited to knowledge about the natural world[41]. Consequently, stocks of so-called 'folk biological knowledge' entered the development agenda, often collected in exploratory phases of development projects. Integrating local knowledge was considered relatively easy while the actual endeavors were located in the actual 'development of the knowledge holders', i.e. the local population. This selective, item-tapping approach resulted in local knowledge being organized by Westerners in classifications and being completely isolated from the respective socio-cultural context. Unsurprisingly, the technicistic position has been widely criticized, as El Berr (2009) summarizes, for a set of reasons: *First*, for building on the (implicit) idea that local knowledge is a homogeneous body of knowledge, evenly distributed over the community and untouched by power issues – an idea of consensus that has been proven erroneous.[42] *Second*, for failing to acknowledge that knowledge is embedded in a specific socio-cultural context, even the items that at first glance seem to be of technical nature. *Third*, for often reducing local knowledge to facts and denotations, missing what Heckler calls its "performance dimension"

[41] This notion is, among others, reflected in the steadily increasing number of publications in the ethnosciences over the last decades.

[42] In fact, research on knowledge consensus started in the 1970s and led to the insight that there are significant qualitative and quantitative differences in what individuals in a given community know. In most cases, knowledge is unevenly distributed with not all members having access to all parts of the knowledge body and individual knowledge changing in the course of one's life. Early exemplary studies on that topic include e.g. Ellen (1979) and Gardner (1976). The same also was understood to apply to the knowledge body of individuals incorporating comparable social function in various contexts. In this vein, it was recognized that e.g. midwives, herbalists and healers from different communities can significantly differ in their knowledge (cf. e.g. Heinrich et al. (1998); Vandebroek (2010)). In both cases, the knowledge differentials were understood to correlate with one or a couple of differing variables, potentially including, as Reyes-García condenses, "market integration, kinship affiliation, age, schooling, positions in a social network and […] level of specialization on the domain of knowledge" (2010:5). This fragmentation of knowledge can even result in parallel, potentially rivaling knowledge systems within a community, which in turn represents a challenge for development initiatives.

(2007:94) [43]. *Forth*, for the implicit value judgments in its basic assumptions that are visible in that local knowledge is not recognized in its entirety, but only appreciated with respect to specific technical aspects.

(c) The **eco-romantic position** according to El Berr (2009) juxtapositions the technicistic position in that local actors are seen as ecologically noble savages, living in perpetual harmony with nature. Local knowledge is seen as opposed and superior to scientific knowledge and as standing for social and economic justice, sustainability and local adaptation. Consequently, it is not only considered to be worthy of protection and conservation against the deductionistic and destructive approach by the scientific paradigm and Western development programs, but also as potentially representing the solution to many if not all contemporary problems. However, this position was met with considerable critique too, for the following reasons: *First*, for amounting to a projection, i.e. to a notion of a just social order that is transferred to a construed other, in this case the local communities. *Second*, for promoting local knowledge as a rather essentialized, fixating notion oriented towards the past, leaving no room for imminent, naturally occurring innovation that is characteristic for local knowledge. *Third*, for postulating local knowledge as a closed and separated system, disregarding its ever-adapting, hybrid character, all the more in post-colonial societies. *Forth*, for mistakenly considering local knowledge to be homogeneously distributed and therefore valid and applicable for a broader population, failing to acknowledge not only structuration and segregation processes within communities resulting in fragmented knowledge dispositions, but also all globalization-induced changes in the social structure that affect the way how knowledge is applied, transformed and transmitted. *Last*, for potentially not being able to live up to its claim of being ecologically and socially responsible due to the given, specific power configurations in place (Antweiler 1998).

(d) The **instrumental position** is related to the discovery of the economic potential of local knowledge. Similar to the technicistic position, it represents a selective approach in focusing only on specific parts of local knowledge that promise material revenues. The difference consists in the technicistic position prioritizing local development and trying to enrich scientific knowledge with local knowledge in order to improve the effectiveness of local development measures. The instrumental position, in contrast, is motivated by vested, often financial interests by external players. This does not imply that the local population necessarily comes away empty-handed, but in most cases, the in-

[43] Performance-based knowledge, Heckler (2007) argues, comprises skills that evade verbalization and, thus, documentation by traditional ethnoscientific methods.

strumentalization of local knowledge is prominent and, subsequently, benefits are distributed highly unequally, counter-acting initial development motivations.[44]

2.1.6 Scientific and local knowledge: different ways of knowing

As shown in the preceding chapters, it remains unclear as to what exactly should be understood by local knowledge (Sillitoe 2002b:2). Accordingly, various approaches to descriptively grasp the phenomenon of local knowledge were presented. Despite all differences, one recurring theme can be found in most studies: the different ways of knowing and local knowledge's status among them. From the very beginning, local knowledge was scrutinized against the backdrop of Western scientific knowledge (Briggs 2005; Schareika 2004) whereby comparing and contrasting the two bodies of knowledge was, and in certain contexts still is, considered paramount. German (2010) distinguishes two main strands in the early debate, namely on the one hand scholars underlining the divergence of local knowledge from the standard scientific understanding, mostly implying the former's inferiority. In their view, development can only occur by bringing local perspectives in line with the universal knowledge of scientific truth, which, among others, resulted in certain researchers claiming that local knowledge needed to be formalized given its essentially fragmented and provisional nature (cf. e.g. Arce and Long (1992:211)). In contrast to this position, German (2010) argues, other scholars had no doubt regarding the logic and scientific validity such as Slikkerveer who argued that local knowledge had developed "almost parallel to Western 'scientific', […] or 'global' disciplinarity" (1999:169).

The idea of local knowledge being rational and empirical was a cornerstone of the participatory development approach brought forward by Chambers (1996) and Warren et al. (1995). Perspectives by local knowledge on specific topics such as e.g. plant and animal classification (Berlin 1992) or agricultural pests (Richards 1980) were brought to a wider attention by means of applying scientific concepts and methods as frame of reference against which the validity of local ways of knowing was assessed (German 2010). Other studies in this direction focused on the complementary nature of knowledge systems (cf. e.g. Richards (1985)) and on approaches linking scientific and local knowledge (cf. e.g. Chambers et al. (1991)). Other studies examined their social interfaces (cf. e.g. Long (1989)) and first systematic sets of properties characterizing the two types of knowledge systems were published (cf. e.g. DeWalt (1994)).

[44] The fields of e.g. bioprospecting or ecosystem services are prominent examples of such a potentially instrumentalizing approach.

In the frame of this binary separation, the great majority of approaches is grounded in an understanding that sees Western scientific knowledge as analytic, systematic, objective and reductionist while local knowledge is considered as intuitive, informal, parochial and holistic, to only name a few traits. The list by El Berr (2009:11, translated from German by the author) summarizes the pair of opposites most frequently encountered in the literature (cf. table 1):

	scientific knowledge	**local knowledge**
potential for abstraction / theory building	allows for theory building	empirical / no theory building possible
scope of application	universal	local
way of knowledge transmission	formal	informal
way of knowledge transmission	written	oral
way of knowledge generation	explicit	implicit
way of knowledge generation and transmission	open	closed
way of thinking	rational	irrational
way of thinking	analytical	intuitive
way of thinking / approach	reductionistic / mechanistic	holistic
relation to time	modern	traditional
dynamic	innovative / dynamic	static

Table 1: Local and scientific knowledge conceptualized as opposites

In his central publication entitled “Cognitive Foundations of Natural History” Atran (1990) was among the first to try to critically examine the divide between folk and scientific knowledge by demonstrating how folk understandings from early Europe constitute the base of modern science (also cf. Ellen and Harris (2000)). Following these early critical comments, the dichotomy between local knowledge and science has been scrutinized, putting into question whether it was epistemologically possible and/or useful at all to draw a clear line between the two ways of knowing (Agrawal 1995; Long 2001; Pottier et al. 2003). It was argued that local knowledge cannot be properly grasped and understood in its complexity by using simple dichotomies. Applying binary concepts when approaching other ways of knowing would entail accepting vagueness and related distortions in the very process of forming an understanding of the local knowledge form in question. In addition, such an approach would also result in a prolonged fixation of the hierarchization of the two ways of knowing. The vagueness and the related distortions were seen in the context of the increasingly contested status of scientific knowledge that was no longer deemed to represent a frame of reference as stable, reliable and potentially absolute as previously perceived. Rather, in the 1970s and 1980s, scientific knowledge has been claimed to be situated and culturally relative

as well as subjective (Knorr-Cetina 1999), loosing its formerly assumed objective and value-free character in its quest for truth. It was generally accepted that "'western science' comes in many varieties" (Antweiler 2004:2), resulting in it being gradually discerned as less universal and more particularistic than previously assumed (Agrawal 1995). At the same time, it was recognized that scientific knowledge subscribes to specific ideals and criteria (e.g. validity, written transmission) to which local knowledge does not adhere, rendering a useful quasi-equation between the two knowledges untenable and obsolete (Antweiler 2004).

Against this backdrop, Agrawal argues against creating "two categories of knowledge – Western and indigenous – relying on the possibility that a finite and small number of characteristics can define the elements contained within the categories" (1995:421). In the context of trying to reconcile local knowledge with global science, Nazarea (2006) speaks of the basic problem of incommensurability originating in the fundamental ontological differences that do not allow for local knowledge to be "solely [treated] as information to be tested, or text to be deconstructed" (2006:323). Even relating local knowledge to science in the sense of conceptualizing it as a 'kind of science' is considered problematic and misleading as local knowledge shares some common characteristics with science while sharing others with other ways of knowing. It is said to result from "a universal human capability, but [to have] a specific culturally and environmentally situated content in every instance" (Antweiler 2004:2). Advocating for a plurality of epistemologies, several scholars therefore suggest a continuum or spectrum of systems of knowledge instead of creating artificial distinctions or dichotomies (Agrawal 1995; Speich 2009). In a similar vein, Antweiler localizes local knowledge "on a continuum between formal science and everyday rationality" (2012:57).

Despite the fact that conceptualizing local knowledge in opposition to scientific knowledge has been questioned by numerous (and influential) authors, the binary concept still prevails in a great number of publications. Most prominent are the numerous studies validating local knowledge for the sake of its integration into scientific frameworks (cf. e.g. de Albuquerque and Hanazaki (2009); Gratani et al. (2011)) – a procedure that is at the same time critically reflected in the debate on the Western notion of 'expert' (Davis and Wagner 2003).

Finally, with respect to practical issues arising in the intercultural collaboration, some researchers raise the question of how to best integrate global and local knowledge, regardless of the exact epistemological definitions (Haverkort and Rist 2004; Latulippe and Klenk 2020). Potential attitudes of science towards local knowledge are outlined in

the form of a typology according to which science in its general attitude towards local knowledge can be a) unacknowledging, b) utilitarian, c) paternalistic, d) neo-colonial, e) essentialist or f) intercultural (Rist, Zimmermann, and Wiesmann 2004).

2.1.7 Summary

Discussing the academic and applied debates on the concept of local knowledge accentuated a number of the debate's characteristic features that are summarized in the following paragraphs.

First, the diversity of perspectives on local knowledge turned out to be impressive, which only underlines that the topic is not only relevant to specific academic disciplines such as anthropology, sociology or the ethnosciences, but also represents a crucial working concept for development agencies grappling with implementing their programs and projects in specific local contexts. This dual consideration confirms the claims about local knowledge's far-reaching and diverse application ranges and thus underlines the highly diverse, complex and situated character of the debate.

Second, this specific character is also reflected in the actual wording, i.e. the specific way how the topic in question is addressed. This entails in the first place opting for the term that most appropriately emphasizes the research's specific perspective on the topic[45] – i.e. 'traditional knowledge' in case of a specific focus on the temporal dimension, 'local knowledge' if the spatial dimension is considered central and 'indigenous knowledge' in case of an ensured status of indigeneity. In any case, wording matters a great deal as there is in fact no neutral reasoning or discussing local knowledge – neither in academia nor in applied contexts. This results from the discourse on this topic being full of ambiguity, prerequisites and assumptions and as such a matter of preferences and interests as exemplified in the unavoidable choice of one's favored terminology.

Third, analyzing the literature on local knowledge – both the academic and applied strands – revealed that the big majority of approaches to local knowledge are descriptive and enumerative in character rather than analytical and conceptual. In most instances, they focus on describing a given form of local knowledge in great detail and strive to identify generic and, ideally, scalable characteristics they deem characteristic and valid for describing local knowledge on a general level.

[45] The same is true for the development sector only that in the case of projects/programs to be developed and implemented, the terminology to be applied is often already determined by the donor, leaving little room for development agencies to position themselves.

Forth, and with respect to the theoretical debate, considerable variations can be observed with respect to the actual position attributed to local knowledge among the many ways of knowing. Main distinguishing factors include e.g. the decision whether to relate local knowledge to scientific knowledge – or even to measure it against the latter –, but also the degree to which knowledge is conceptualized as socially construed. The latter is, among others, indicative of the relevance attributed to issues of power, authority and legitimation.

Fifth, and in regard to applied contexts, many possible applications for local knowledge in development contexts turned out to exist, when looking at the abstract potential, foremost in the planning and evaluation phases of projects or programs. However, accounts of practice examples and related research have demonstrated that the role and change potential of local knowledge for development purposes remains unclear and contested. A majority of the earlier studies and certain strands of contemporary applied research still base their understanding of local knowledge on a binary opposition between scientific knowledge and local ways of knowing (cf. the *third* point). This opposition comes along with (often implicit) assessments of the value and relevance of local knowledge with it being understood as either inferior or superior to scientific knowledge. In this respect, the 'typology of assessments' originally developed by Neubert and Macamo (2004) and adapted by El Berr (2009) turned out to be noteworthy; it consists of four approaches reflecting the above mentioned inferiority or superiority of local knowledge vis-à-vis scientific knowledge in applied contexts, namely (a) the positivistic approach, (b) the technicistic approach, (c) the eco-romantic approach and (d) the instrumental approach. In a similar vein, Rist et al. (2004) propose a typology describing a set of potential general attitudes science can display towards local knowledge, namely a) unacknowledging, b) utilitarian, c) paternalistic, d) neo-colonial, e) essentialist or f) intercultural.

Lastly, the analysis of the literature on local knowledge also touched upon the topic of differing epistemologies, namely the differences and commonalities between differing ways of knowing, mostly reduced to the dichotomy between local and scientific knowledge. While a clear distinction and valuation still proved to prevail in a great number of publications – mostly to the detriment of local knowledge – it became equally clear that such a binary approach is not able to do justice to the topic at hand. The reason is that local knowledge is too complex a topic to be adequately grasped and understood by recurring to simple dichotomies. In this vein and advocating for a plurality of epistemologies, approaches by several scholars were outlined that explicitly advocate for a contin-

uum or spectrum of systems of knowledge instead of creating artificial distinctions or dichotomies.

To sum up, the literature review on local knowledge confirmed the claims made, i.e. that local knowledge represents a multifaceted and wide-ranging topic that escapes attempts at simplifying its complex character. This complexity, however, is not fully reflected in the existing academic literature: Despite the topic being explored from various disciplinary angles, academia seems to pursue a distinct research interest that is directed towards understanding specific forms of local knowledge in their particularities with the expectation of consequently being able to extrapolate and generalize the insights. Such an emphasis, however, goes at the expense of another, more encompassing perspective on the topic that crosses disciplinary boundaries and refrains from relating and comparing local knowledge to scientific knowledge as starting point. It is exactly in this respect that this research intends to contribute to the debate by striving to develop an independent, structured, theory-driven, conceptual-analytical and interdisciplinary approach to understanding the phenomenon of local knowledge that the same time informs researchers as well as development practitioners.

Moreover, opting for an approach that is categorial, systematic and conceptual-analytical in character might also provide a certain counterbalance to ideologically tainted currents in the debate on local knowledge bordering on advocacy. While such an ideological orientation is perfectly understandable in face of the omnipresent instrumentalization and marginalization of local knowledge and might even be crucial with respect to stimulating actual change processes, it might at times also run a double risk – not only the risk of weakening a theoretical debate that strives for gaining a clear, structured and analytical understanding of the topic, but also of hampering an easy interdisciplinary up-take of local knowledge insights, especially by natural scientists for whom explicit ideological coloring might seem alien, if not out of place for scientific contexts.

2.2 Sustainable Development

The concept of sustainable development represents one of the leading development model of humankind (Waas et al. 2014), akin to the “idea of socialism in the early 20th century and the Declaration of Human Rights after World War II” (de Vries and Petersen 2009:1006). Equipped with a distinct “action guiding power” (Christen and Schmidt 2011:400), it was developed towards the end of the 20th century as a countermeasure to an increasing environmental crisis and to extensive social inequalities, both

on global levels. Nowadays it is widely accepted and supported (cf. von Hauff (2014), for a detailed overview cf. e.g. Michelsen et al. (2016)).

The basic idea underlying the suggested new role model is quite clear-cut: shape societal development such that it allows "for substantial improvements in global justice without compromising the opportunity for future generations to achieve a good life" (Burger, Daub, and Scherrer 2010:1). Identifying the main threats to this endeavor as related to the over-exploitation of natural resources, the concept of sustainable development combines two hitherto separate global discourses – "the discourse on global justice and the discourse on the growing long-term risks stemming from the scarcity of natural resources" (Burger et al. 2010:1). While ecological problems as well as poverty alleviation – and thereby justice – were addressed separately in the 1980s, the innovative power of the newly introduced concept of sustainable development consisted in it merging the two global issues and, importantly, introducing the global mind-set to long-term perspectives with respect to inter-generational justice. It has led to a huge variety of global processes under the new umbrella term 'sustainable development'.

The normative openness and multifacetedness of sustainable development resulting in this huge variety of global processes represents a characteristic hailed by some as panacea for today's challenges and criticized by others for institutionalizing, among others, a dangerous 'everything-goes' mentality[46]. In that respect, I share the perspec-

[46] Although an extended critical discussion of sustainable development is beyond the scope of my research, three main areas of contention are mentioned in the following (for a detailed review cf. e.g. Haque (1999); Kiss (2011); Redclift (2005); Robinson (2004)).

a) terminological vagueness: The concept of sustainable development gained momentum without a commonly accepted definition ever having been determined: "There is no such thing as a single unified philosophy of sustainable development; there is no sustainable development'ism.'" (Hopwood, Mellor, and O'Brien 2005:47; Kates, Parris, and Leiserowitz 2005). Consequently, the concept remained vague (Robinson 2004; Waas et al. 2014) as well as "elastic but imprecise" (M. Adams 2006:3) – and allowed for bringing to the debate already existing philosophical and political views, which then resulted in a plethora of interpretative approaches as to what constitutes sustainable development (Burger and Christen 2011; Hopwood et al. 2005). This phenomenon, in turn, brought the concept a fair amount of criticism as a great range of different parties – from business people to environmentalists, governments, political and economic planners – could turn to it to convey highly diverse visions of the relationship between environment and economic growth. Moreover, the concept is criticized for resulting in self-deception – especially in industrialized countries – in that it is deemed to primarily serve to calm the public by alluding to utopian, yet inadequately charged promises of paradise that prove inapplicable to real world issues (Grunwald 2013b). However, other academics consider the concept's literary open- and vagueness to be advantageous, if not even necessary (cf. e.g. Burger (2006)) – not only theoretically, but also with respect to its practical implementation. In terms of the concept's actual flexibility, they argue that it tackles pressing and conflicting issues without over-determining the issues and solution paths, thereby potentially deterring interested parties (W. M. Adams 2006; Burger 2006; Hartmuth, Huber, and Rink 2008; Jischa 1999; Maragia 2006).

b) development and power inequalities: A second critique extends to distributive issues, i.e. the disparities in responsibility and power between industrializing and industrialized countries when it comes to defining and implementing the concept (for an account on reconciling environmental sustainability and social justice cf. Agyemann (2008); Langhelle (2000)).
At the time of their development run, industrialized countries did not attend to the environment (Iqbal and Pierson 2017). Only after attaining a certain level of development, a clean environment became a priority and was gradually imposed on other countries. In this vein, usually rather investment-intensive types of sustainable development are promoted that favor ecological interests over social ones and are primarily oriented towards future generations and inter-generational justice (Iqbal and Pierson 2017; Redclift and Sage 1998). In their attempt to achieve comparable living standards while dealing with an already impaired natural environment, industrializing countries were confronted with a double challenge: *First*, they had to quickly advance economic growth with limited financial and technical resources to free their population from poverty. *Second*, the well-proven, albeit pollution- and exploitation-intensive approaches that heavily benefited the West were no longer considered acceptable development strategies

tive of Hartmuth et al. (2008) who argue that the inherent fuzziness of the concept of sustainable development requires researchers to particularize and contextualize it for it to become meaningful and productive. With that in mind, the next chapters are dedicated to clarifying this research's understanding of sustainable development. To do so, I start the literature review with briefly describing the origin and development of the concept (chapter 2.2.1) before outlining various understandings of sustainable development (chapter 2.2.2) and ways to operationalize it (chapter 2.2.3). Chapter 2.2.4 closes with a summary of the insights gained in this literature review.

2.2.1 Origin and development of the concept

The terms 'sustainable development' and 'sustainability', derived in their modern understanding to a large extent from the 1987 Brundtland report, are rather new additions to the popular vernacular, but the underlying idea itself is said to date back many centuries, if not millenniums (for a detailed historical and etymological account cf. Du Pisani (2006)). The quest for finding a balance between the needs for raw materials for food, shelter, clothing, energy etc. and the environmental limits of ecosystems represents a continual concern and burden in human history (Waas et al. 2011), which, in turn, explains why issues, approaches and methods currently subsumed under the sustainability notion can be traced way back in human history.[47] Following up on this line of

– however, no or too little financial or other support was provided by Western countries to explore alternative paths (Agyeman 2008; Fien and Tilbury 2002; Langhelle 2000).
This underlines that the main areas of interest differ: While environmental problems such as climate change are foremost concerns of industrialized nations in their orientation towards the future, industrializing countries clearly prioritize the needs of the present generation – needs that up to date could have been more compromised by trade liberalization and structural adjustment policies than changes in climate.

c) neoliberal core: A substantial critique is economic in nature and linked to sustainable development's mission to, among others, elevate living standards in industrializing countries. From the start, the concept encompassed the economic dimension, assuming as much as asserting that economic growth and environmental balance are compatible. However, this integration also implied acknowledging the dominant neoliberal economic system, including features such as deregulation, privatization of public goods, commodification and cuts in government expenditure. In view of the integration of these problematic aspects, some parties – foremost academics and NGOs from the left spectrum – perceived of the concept as being reactive and alienating. This was especially expressed in the wake of the critical debates in the mid 1970s that identified 'economic growth' and the 'trickle down'-theory of development as inadequate and gradually replaced them by the 'basic needs approach' (Lélé 1991; Streeten 1979). Neoliberal economics resulting in e.g. poverty-induced, increased exploitation of environmental resources were understood as detrimental to both the environment and the livelihoods of different groups of people, foremost the poor in industrializing countries (cf. e.g. Haque (1999); Iqbal and Pierson (2017)).
In terms of sustainable development's ecological dimension, the basic neoliberal orientation lies at the ground of the debate between so-called 'weak sustainability' and 'strong sustainability' – a distinction introduced by Pearce et al. (1989) (cf. e.g. Du Pisani (2006); Holden et al. (2008); Kiss (2011); Redclift (2005)). Proponents of 'weak sustainability' argue that the total capital stock – composed of physical, human and natural capital – needs to be maintained for economic growth to ensue, implying that the types of capital can be substituted for one another. It builds on the idea that welfare is not dependent on a specific form of capital; as a result, it allows for natural capital to diminish and be compensated by human-made capital. In contrast to this position, advocates of 'strong sustainability' argue that certain components of capital – foremost natural capital such as e.g. clean air – are critical for welfare in such a way that cannot be reproduced by another capital type without "profoundly damaging consequences" (Cochrane 2006:320). Under these premises, maintaining the total natural capital stock at or above the current level is considered a condition for sustainability (cf. Daly and Cobb (1990), with a focus on critical natural capital cf. Ekins (2003)).

47 Early precursors or expressions of the core idea of sustainable development include e.g. the profound respect for the environment and nature in general displayed by Taoists and Confucians in the early days of Chinese civilization (Bañon Gomis et al. 2011) and a Greek concept of household economics expressed by Aristotle in 400 BCE where the household was expected to be as self-sustaining as feasible instead of consumption-oriented (UNCSD 2012).

thought, Du Pisani (2006) identifies two factors as main drivers for this evolution – population growth and increase in consumption after the Industrial Revolution – which, over time, raised a general awareness that natural resources need to be used and managed in a sustainable way. Fears whether present and future generations might be able to maintain their living standards or even expand on them prompted a manner of thinking that eventually paved the way for the "emergence and global adoption of sustainable development" (Du Pisani 2006:87) at the end of the 20th century.

Sustainable development as it is conceptualized today dates back to ideas about sustainable forest management developed in the course of the 17th and 18th centuries in Europe where the constantly growing agriculture and mining industries entailed unprecedented and alarming deforestation (cf. e.g. Foster and O'Keefe (2000); Grober (2007); von Hauff (2014:2ff.)). Building on the work and insight by the Englishman John Evelyn and French Minister Jean-Baptiste Colbert, Hanns Carl von Carlowitz, head of the Royal Mining Office in the Kingdom of Saxony, outlined in "Sylvicultura Oeconomica" (1713) the concept of managing forests for sustained yield, insisting that "one should not harvest more wood than a forest yields" (Brand and Karvonen 2007:24) in order to secure reliable livelihoods for future generations[48]. Carlowitz's work became soon highly influential, leading ultimately to the development of the scientific discipline of forestry. Forestry, in turn, shaped the way forests were managed in both Europe and the USA and contributed to the formation of environmental organizations in the 1960s such as World Wide Fund for Nature (WWF), the International Union for Conservation of Nature and Natural Resources (IUCN) and Greenpeace (Grober 2007; Scherrer 2009). While, as Brand and Karvonen formulated it, "these [early] far-sighted naturalists" (2007:24) were crucial in advocating for a sort of "proto-sustainability" (2007:24), the actual concept of sustainable development as it is in use nowadays shifted its focus significantly from forestry-related concerns towards a more generalized and overarching concern for intertwining environmental protection, social development and economic development.

This shift was furthered by a number of publications and events in the 1960s, including the publication of Rachel Carson's "Silent Spring" (1962) where she details the harmful effects of pesticides on the environment and the one by Garret Hardin's called

Another expression can be found in the Hebrew Scriptures where human righteousness is extended beyond having the right relationship with God and fellow humans to having careful stewardship of the earth (Bañon Gomis et al. 2011). Moreover, there are numerous examples of indigenous people all over the world who regarded and regard it as the sacred duty of humans to live in harmony with nature life (cf. e.g. Posey (2002)). For a detailed and chronological account on 'early precursors' of the idea of sustainability cf. Du Pisani (2006); Grober (2007).

48 In this context, Allemann (2017) pointed out that when speaking of 'future generations', von Carlowitz primarily envisioned the wealth of his chieftain and not necessarily the interests of the general population. For a critical discussion of the historical origins of the concept of sustainable development cf. Warde (2011).

“Tragedy of the Commons” (1968) where he describes the resource-depletion and destruction out of personal self-interest in the context of unregulated and shared-resource systems such as pastures, oceans or rivers. It also includes “Blueprint for Survival” by the Ecologist Magazine (1972) where attention was drawn to the urgency and magnitude of environmental problems and a radical reconstruction of society was called for to prevent its breakdown and on irrevocable severance of the planet’s life-support systems.

Still in 1972, the term ‘sustainable’ was used for the first time in its contemporary sense in the seminal publication “Limits to growth report” (1972) published by the Club of Rome in which they initiated the long-lasting controversial debate on the inter-dependencies between economic growth, pollution and resource depletion. Under the lead of Dennis and Donella Meadows from the Massachusetts Institute of Technology, the authors introduced the idea of a “state of global equilibrium” (1972:1): "We are searching for a model output that represents a world system that is: 1. sustainable without sudden and uncontrolled collapse; and 2. capable of satisfying the basic material requirements of all of its people.” (1972:6)

In the same year, ‘sustainable development’ was the key theme of the United Nations Conference on the Human Environment in Stockholm where representatives of both industrialized and industrializing nations jointly discussed how to detail the rights of the human family to a productive and healthy environment (von Hauff 2014:6ff.).[49] While not explicitly used as technical term in 1972, the international community nevertheless made a joint shift from understanding both development and the environment as not separated, but intrinsically intertwined issues in need of being tackled inclusively.[50]

Another significant step forward took place in 1983 when the World Commission on Environment and Development (WCED) was formed by the United Nations (UN) and tasked by the Secretary General to investigate critical environmental and development-related economic issues around the world to elaborate a realistic strategy for addressing these issues in a mutually beneficial way (Cochrane 2006).

Eventually, these preparations led to the seminal publication “Our Common Future” (WCED 1987) – also known as the Brundtland Report after the chair of the commis-

[49] Following this initial meeting, a number of talks took place discussing the rights of people to adequate food, sound housing, safe water and access to means of family planning, all eventually leading to the foundation of global institutions within the UN system (United Nations 2012).

[50] As Gibson (2006:261) details, approaches predating sustainable development, but aiming at similar objectives include e.g. the so-called ‘eco-development’ (CIDA 1979), a response to the “disappointments and tragedies of development assistance undertaking that had ignored local conditions, cultures and capacities”. Another approach is the 1980 World Conservation Strategy (IUCN/UNDP/WWF 1980) that reflects in its core the insight that “there could be no species preservation without habitat preservation and no habitat preservation with local livelihood security” (2006:261).

sion, Gro Harlem Brundtland – that was crucial in bringing the concept of sustainable development into the spotlight of international politics. The report concluded that the world turned from a compartimentalized state dealing with a myriad of local, specified issues into a complex interrelated system that seemed to be confronted with one single challenge: the ever-increasing resource gap between industrializing and industrialized countries at a time when the majority of the planet's ecological capital was already irreversibly depleted (e.g. Allemann (2017)). Acknowledging that by pursuing this strategy, the industrialized countries might have been successful in ensuring that the needs of the current generation are met, the report underlined that this might no longer be true for the generations to come (Burger 2018; McNeill 2004). Identifying spatial and temporal distribution issues as main stressors and the existence of a productive ecological resource base as fundamental enabler, the WCED formulated the by far most widely known and used definition of sustainable development:

> „Sustainable development is development that meets the needs of the present without compromising the ability of future generations to meet their own needs" (WCED 1987:41).

Taking into account the conflict between the two interests at stake – those of present and those of future generations – the definition establishes a suggested path for sustainable development on a global scale by combining humanity's responsibility for the future and for preserving the planet with development issues (Grunwald 2013a). This way, Adams notes, the definition manages to capture and inter-relate the two elementary issues, i.e. the "problem of the environmental degradation that so commonly accompanies economic growth and yet the need for such growth to alleviate poverty" (2006:2). In addition, the commission saw, as Allemann (2017) condensed, the need for three conditions to be considered when steering towards sustainable development: *First*, limits are imposed on technology, social organization and the ability of the biosphere to absorb emissions of human activity; *second*, lifestyle and consumption patterns need to be adopted that lie within the planet's ecological means; *third*, sustainable development needs to be understood as reflexive process (instead of a fixed state of harmony) safeguarding that financial investments, technological progress, exploitation of resources and institutional changes allow for future needs. (WCED 1987)

In the concluding chapter, the commission asked the UN General Assembly to translate its report into a global action plan for sustainable development – a request that was eventually realized at the subsequent 1992 UN Conference on Environment and Development – also called the Earth Summit – in Rio de Janeiro. The Earth Summit was indeed crucial in reinforcing the concept of sustainable development on a global level – an undertaking that was characterized during the preparation phase by "almost insur-

mountable differences" (Jischa 1999:83, translated from German by the author). While the developing countries identified the uncontrolled consumerism of the industrial world as main cause for the environmental crises, still prioritizing a favorable socio-economic development over environmental protection, the situation was reversed for the industrialized countries: Prioritizing environmental protection over anything else, they determined the significant population growth in developing countries to be the main driver for environmental crises. This fundamental difference is also reflected in the actual conference name – 'conference for environment and development' – which emphasizes the varying prioritization and the struggle to reconcile them on a global scale (Jischa 1999).

Eventually, fostered and facilitated by the presence of 170 country representatives, the called for global action plan for sustainable development was agreed upon under the name of 'Agenda 21'. It was a voluntary commitment: Acknowledging every nation's right to strive for social and economic progress, it only went as far as assigning to the states the responsibility of adopting a model of sustainable development on a national level and of formulating a related national strategy (von Hauff 2014:10ff.). On a global scale, Agenda 21 greatly contributed to promote sustainable development by providing a framework for tackling contemporary environmental and social issues, including e.g. deforestation, biodiversity loss, air pollution, waste production, health, overpopulation, poverty and energy consumption.[51]

To sum up, the tangible results from the Earth Summit include:

- the above mentioned Agenda 21, a non-binding plan of action for implementation by national, regional and local governments;
- the Rio Declaration, recognizing the right of states to economic and social development and comprising 27 principles of sustainable development (including the 'Precautionary' and 'Polluter Pays' Principles);
- the endorsement of the 'Forest Principles', recognizing the relevance of forests for social and economic development, indigenous communities, biodiversity and ecosystem maintenance;
- the signing of the Convention on Biological Diversity;
- the Framework Convention on Climate Change.

The policy content was further developed at a number of subsequent conferences (for a detailed account cf. e.g. Holden et al. (2008); von Hauff (2019)), resulting among others in the Copenhagen Declaration from 1995, calling for placing people at the core of

[51] It contains a broad range of program areas that are structured in four sections: They center on a) economic and social development, addressing issues such as poverty, population growth, human health and consumption patterns, b) environmental protection and natural resource management, addressing issues such as land resources, climate, fragile ecosystems, biodiversity, oceans and freshwater resources, c) strengthening the role of major, so far underrepresented groups as e.g. women, children, indigenous people, NGOs, local authorities, workers and trade unions and d) the specification of the means of implementation, addressing issues such as science, education, financial resources, technology transfer and instruments and mechanisms for decision-making.

development, eradicating poverty and fostering social integration, and the Kyoto Climate Agreement from 1997, aiming at reducing the emissions of its signatories[52].

In 2000, the UN organized the Millennium Summit to debate a broad agenda covering both development and environmental concerns and resulting in the adoption of the Millennium Declaration. Restating the support of the international community for Agenda 21 and the Rio Declaration, it resulted in the formulation of the MDGs – a range of time-bound targets to be achieved by 2015 in order to meet the basic needs of the world's poorest and reduce poverty (Holden et al. 2008; Wilderer and von Hauff 2014). In the same year, the Earth Charter was launched after a decade of worldwide, cross-cultural dialogue on the fundamental ethical principles for building a just and peaceful global society.

In 2002, the UN World Summit on Sustainable Development was held in Johannesburg. After the focus set by Rio on global environmental change and the problems of biodiversity, climate change and resource depletion, this conference re-established poverty as priority goal on the development agenda. This shift also reflects the spirit of the MDGs where sustainable development was one of eight goals, consisting itself of 18 targets and 48 indicators that were meant to serve as criteria for evaluating the impact on people's lives. (W. M. Adams 2006)

In 2012, the United Nations Conference on Sustainable Development – also called 'Rio+20' – took place in Rio de Janeiro, Brazil, where the member states of the Agenda 21 reaffirmed their commitment to strive for meeting the predefined objectives, as written down in the conference report "The future we want" (UNCSD 2012). In this vein, they agreed to launch a process to develop a set of Sustainable Development Goals (SDGs), aspiring at ending poverty, fighting inequality and injustice and tackling climate change by 2030 and entering the '2030 Agenda for Sustainable Development' (cf. von Hauff (2019) for a detailed account). The SDGs build on the MDGs described above as well as on lessons drawn from the process and consist of 17 goals that are all accompanied by specific targets, 169 in total, for easier implementation and evaluation.[53] On the overall, great advancements are expected to potentially result from the SDGs, with

[52] The Kyoto Climate Agreement addresses primarily those countries of the industrialized world responsible for the majority of the air pollution and related consequences. The USA remain the only industrialized country not to ratify the protocol, along with South Sudan.

[53] In contrast to the MDGs that only applied to the countries considered to be 'developing', the SDGs extend to all nations and require their collaboration for achieving them. The SDGs are hoped to act as catalyst for wealthier countries to analyze the state of their societies and their overall impact on the world, underlined by SDGs' goal No 10 promoting the reduction of inequality within and among countries.

a smaller fraction of experts being more critical about the SDGs' reach and potential (cf. e.g. Bierman et al. (2017); Steves and Kanie (2016)).[54]

2.2.2 Defining sustainable development

Contrasting the world-wide support sustainable development has been receiving since its 'modern remake' in the 1980s/90s, its actual definition remains contested up to date, resulting in a lack of a widely agreed upon definition of sustainable development. Accordingly, the related literature is vast and displays a broad scope and multi-dimensional heterogeneity (cf. e.g. Burger and Christen (2011)); Redclift (2005); Robinson (2004)), next to recurring to varying ways of conceptual structuring. Correspondingly, there exists a range of classificatory approaches to the phenomenon of sustainable development of which a selection is sketched in the following paragraphs.

Godard (2003), e.g., favors a functionalistic structuration of the field of sustainability, dividing the field into bio-centric, anthropocentric and economic interpretations of sustainable development (cf. Brunner Grandy (2016)). Dobson (1996) distinguishes between four main motivations driving the perspective on sustainable development, as reflected in the four questions characterizing his approach to sustainable development, namely the questions a) what should be sustained, b) why it should be sustained, c) the object(s) of concern[55] and d) the rules regarding the substitutability between different types of capital (Burger 2018).

Following a similar conceptual approach, Kates at al. (2005) identify in their meta-study four different approaches to tackling the issue of sustainable development, namely a) those providing definitions of a potential set of criteria, b) those devising sustainable development as sets of goals ("what to sustain?"), c) those providing reference schemes for measuring it ('indicator systems') and d) those understanding sustainable development as a "societal practice or even a societal movement" (Burger 2018:144).

As for a general structuring of the field, I follow Van Zeijl-Rozema et al. (2008) and Bornemann et al. (2018) in their argumentation that the literature on sustainable development can be divided into two camps in terms of their main perspective: On the one hand there are those favoring what could be called a 'well-being perspective' in which the normative concept of sustainable development is primarily related to the quality of life and, accordingly, characterized by societal concerns and a set of uncertainties. Standing in the Brundtland tradition, Lange argues, such an understanding perceives of

[54] In academia, the SDGs have over the last yeas evolved into the dominant paradigm and serve as general reference point, largely taking the place of the formerly ubiquitary Brundtland definition of sustainable development (Burger 2019, personal communication).

[55] This refers to the question as to who is entitled to being sustained – humans *and* animals or only the former.

sustainable development as “a comprehensive trajectory of societal development towards safeguarding the well-being of present and future generations” (2016:31). The second camp features a more restricted ‘ecological sustainability perspective’ in which sustainable development is defined by ecological limits and objectified recurring to scientific evidence. As Lange condenses, this results in an understanding of sustainable development “as an improved management of ecological resources, furthering resilience in light of limited carrying capacities” (2016:32).

When focusing on the objectives of sustainable development, Brunner Grandy (2016) suggests structuring the plethora of objectives in two groups: process-oriented objectives and result-oriented objectives. The former center on how to exactly organize the processes of policy formulation over what kind of results and impacts are obtained, arguing that suitable processes should in and of themselves lead to satisfying results. In this view, sustainable development has to be conceptualized as a process of negotiation to identify a broadly supported approach – a so-called social learning process according to Dedeurwaerdere (2005) – rather than as a previously defined target state.

In contrast, result-oriented approaches focus on the actual impact of actions and activities and can be divided into two sub-groups: ecologically-oriented and anthropocentrically-oriented approaches (Brunner Grandy 2016). *Ecologically-oriented approaches* directly resonate with the initial use of the term ‘sustainable’ in the realm of forestry where it denotes a consumption that does not surpass the natural regeneration rate. With respect to related contemporary approaches, Ostrom’s (1990; 2002) research on local resource management understands success as preserving a specific common pool resource.

Anthropocentrically-oriented approaches to sustainable development came into existence in the wake of the Brundtland report “Our common future” (1987) where the focus was first set on human needs, foremost the needs of poorer social classes and those of future generations, all the while underlining the importance of a healthy natural environment for satisfying these needs. Going beyond a strictly ecological interpretation of sustainable development, this approach is characterized by the relevance attributed to ‘justice’ in its two expressions: *intra-generational justice,* addressing issues of global justice between different people of the present generation and *inter-generational justice,* addressing issues of justice between present and future generations (cf. also Okerere (2006); Vojnovic (1995)). Although lacking well-defined objectives, this approach to sustainable development can be considered to represent the consensus of agreement by the community of nations.

Alternatively, Allemann (2017:55) suggests that the theory-oriented literature on sustainable development can be structured along its temporal evolution as depicted in his corresponding figure (illustration 1, to be read from top to bottom):

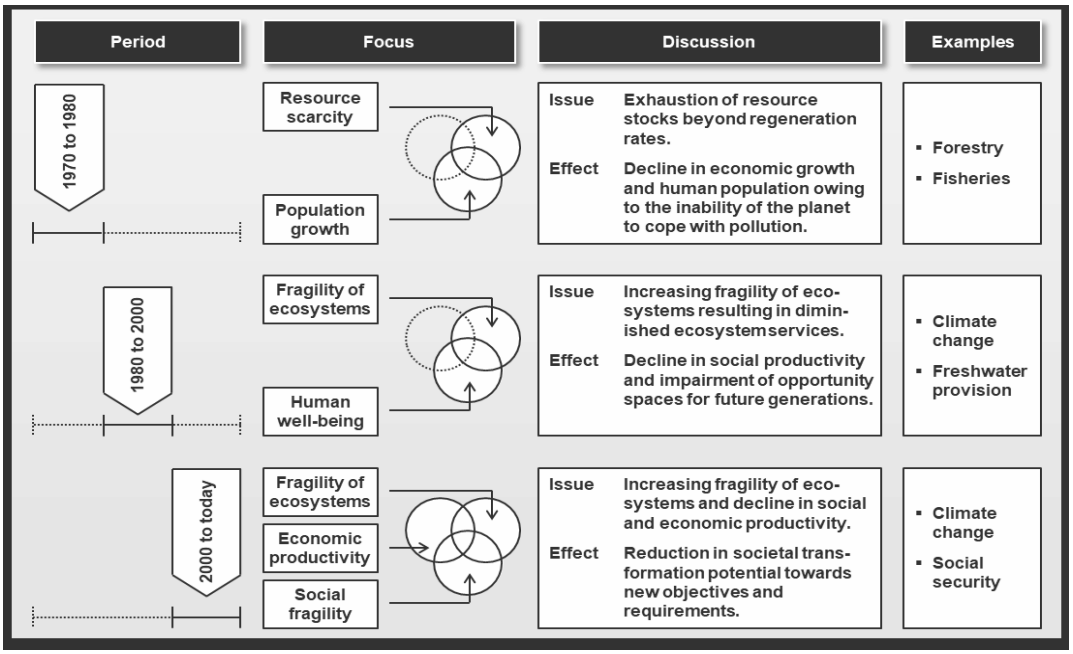

Illustration 1: Evolution of the debate on sustainable development

He observes two main movements: On the one hand, the scope of analysis grew from an initial focus on regional subjects of forestry and fishery to more global issues such as climate change. On the other hand, the key literature moved from discussing resource scarcity and populations growth in the 1970s to fragility of ecosystems and human well-being today, while more recent literature has expanded the scope of analysis to additionally studying economic productivity and social fragility (Allemann 2017).

2.2.3 Operationalizing sustainable development

In terms of the second topic of this chapter – the operationalization of sustainable development to make it productive for implementation and evaluation – the variety of approaches is as heterogeneous as the definitions for sustainable development are numerous (Bruckmeier and Tovey 2008; Burger et al. 2014).

In many national debates, these approaches can be divided into a number of different categories, generally into three or four (von Hauff 2014:13ff.; Kopfmüller 2010; Kopfmüller et al. 2001): *First*, there are one-pillar operationalizations as the least complex approaches focusing predominantly on the aspect of environmental sustainability with one of the most prominent examples being the ecological footprint developed by Wackernagel and Rees (1996). However, by and large, this specific perspective on the

interdisciplinary topic of sustainable development has been considered inadequately complex and – above all – little innovative as it largely equals to the already established notion of environmental protection (Littig and Grießler 2004).

Second, there are the three-dimension approaches that were introduced for conceptualizing the Brundtland definition following the publication of the report in 1987[56]. Up to date, they represent the most widespread approach to operationalizing sustainable development (von Hauff 2012; Kates et al. 2005; Waas et al. 2011), not the least because they mirror traditional disciplines, policy fields and the well-established, sectorially-oriented training of assessment and review experts, enhancing the notion's political palatability and acceptability (Gibson 2006). There, sustainable development is conceived as resting on three dimensions – economic development, social development and environmental protection. The three dimensions are alternatively depicted as pillars or interlocking circles while the model as a whole is sometimes referred to as '3Ps' or 'triple bottom line', signifying 'people-planet-profit' (Waas et al. 2011).

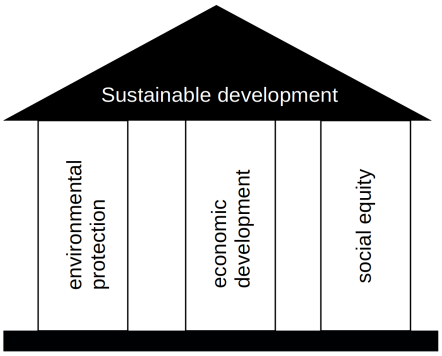

Illustration 2: Three-dimension approach to sustainable development

According to the idea of three-dimension approaches (cf. illustration 2), sustainable development materializes in all three pillars to which equal importance is given, at least theoretically – a claim that gave rise to substantial criticism in view of general doubts regarding a potentially unnecessary division between humans and the environment and, more specifically, in view of decisions by businesses and governments prioritizing the economy over the remaining dimensions (W. M. Adams 2006; Giddings, Hopwood, and O'Brien 2002; Littig and Grießler 2004). In three-pillar approaches, the aim mostly is to reach a balance or trade-off between what is not seldom perceived of as conflicting dimensions[57]. Objectives are defined for each dimension separately and so are the criteria regarding the implementation of activities and the evaluation thereof. In general, three-pillar approaches entail that trade-offs are always possible between the environmental, social and economic dimensions. This tenet, too, gave rise to controversies (W. M. Adams 2006; Kiss 2011) in the wake of which more

[56] Brunner Grandy (2016) questions in this respect whether these three-dimension approaches are able to map the notion of sustainable development in line with the Brundtland definition.

[57] For a critique of the widespread tendency to see the dimensions as conflicting rather than highly interdependent, potentially complementary and mutually supporting cf. e.g. Gibson (2006).

sophisticated approaches were developed such as the ‘integrated sustainability triangle’ by von Hauff and Kleine (2005:14) (cf. illustration 3).

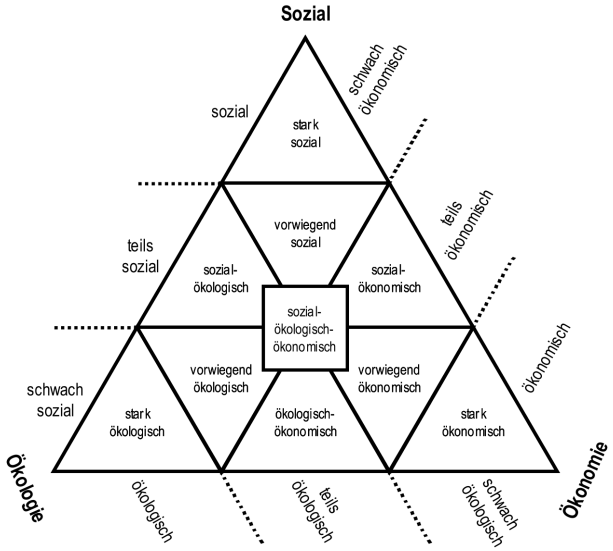

Illustration 3: Integrated sustainability triangle

Furthermore, the debate on the opposition pair of ‘strong sustainability’ (where such trade-offs between the dimensions are restricted or not allowed at all) and ‘weak sustainability’ (where all trade-offs are granted) (Ott 2003; Ott and Döring 2008) began[58]. In a similar vein, the approach was criticized for lacking of any instructions about how to delineate the pillars or about what constitutes topics relevant for sustainability endeavors. This openness, although greatly enhancing a broad acceptance for its low-threshold access, attracted substantial criticism (for a detailed account cf. e.g. Giddings et al. (2002); Lehtonen (2004); Waas (2011)).

At a later stage, the inherent weaknesses of the three-dimension approach were recognized and so-called ‘nested models’ were introduced (cf. illustration 4). These models overcame two fundamental weaknesses by placing human well-being at the center without separating the social and economic dimensions. In addition, they locate society within the environment and its limits, all contributing to promoting the search for integration and ‘win-wins’ instead of a theoretical justification of trade-offs (Giddings et al. 2002; Waas et al. 2011).

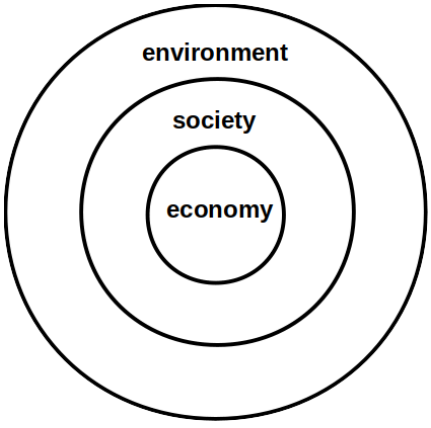

Illustration 4: Nested model of sustainable development

Third, there are four-pillar or four-dimension approaches (cf. illustration 5). They represent an expansion of the three-pillar approach in that a forth one is added to cover whatever dimension is deemed missing. Most often, the additional pillar refers to either

[58] Cf. footnote 46.

the cultural, political or institutional dimension, depending on the respective research perspective and interests (e.g. Waas (2011); for a detailed account on culture as forth dimension cf. e.g. Kopfmüller (2010)). For exemplification purposes, the four-pillar approach displayed here shows the integration of the institutional dimension, often also referred to as 'governance' or 'democracy' dimension (illustration by Waas (2011:1651)).

Forth, so-called 'integrative concepts' were suggested to counter the perceived weaknesses of the above described pillar- or dimension approaches, arguing that a concept as integrative as sustainable development should also be operationalized as an integrative process instead of being split into delineated, hardly interconnected dimensions (Gibson 2006; Robinson 2004). Integrated approaches, Brunner Grandy (2016) outlines, aim at going beyond the frequently encountered sectorial politics, taking account of the mutual interdependencies between activities taking place in the different sectors in order to notice unexpected and undesired external effects. In practice, this implies first operationalizing the normative content of the concept, i.e. detailing the set of goals to be reached under the prevailing understanding of sustainable development in a given place. In a next step, the set of goals – or the specific operationalized sustainability norm – needs to be contextualized, i.e. adapted to the general conditions present in the community, city or region in question. This contextualization can refer to the economic, ecological, social, institutional, cultural or other realms. In other words, the sustainability goals have to be shaped for the local situation or, as Hartmuth condenses, "the aim is the fit of the overarching, global goals of sustainability and the local circumstances" (2008:262). One prominent and often cited example of this endeavor is the Brundtland-based concept of the Helmholtz Association of German research centers, as developed by Kopfmüller et al. (2001). As it is crucial for the understanding of the conception of sustainable development underlying this research, I describe it in chapter 3.2.1 in more detail.

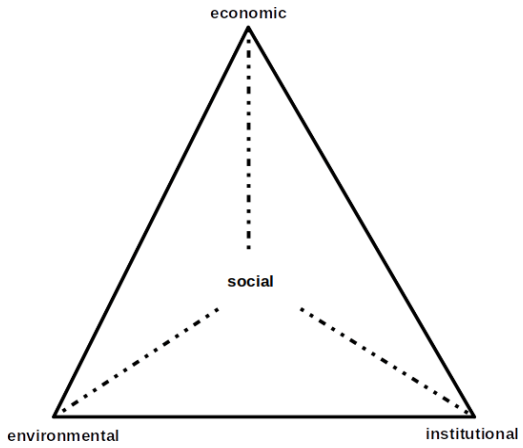

Illustration 5: Four-dimension approach to sustainable development

Another approach to tackling the issue of adequately operationalizing sustainable development consists in determining a set of fundamental sustainability principles – also called 'rules' – to build upon subsequent systems. The rationale behind this approach is that "sustainable development needs to be based on principles that would apply to all

issues whether they are classified as environmental, social, economic or any mix of the three" (Giddings et al. 2002:194). In this respect, the Earth Charter encompasses 16 such principles, clustered into four categories: 1) respect and care for the community of life; 2) ecological integrity; 3) social and economic justice and 4) democracy, nonviolence, and peace. In contrast to this, Haughton (1999) proposes five such equity principles intended to be applicable to all issues: 1) futurity – inter-generational equity; 2) social justice – intra-generational equity; 3) trans-frontier responsibility – geographical equity; 4) procedural equity – people treated openly and fairly and 5) inter-species equity – importance of biodiversity. In the same vein, Burger and Christen (2011) suggest an alternative set of principles, consisting of six items called 'adequacy conditions'; as they too enter the conception of sustainable development underlying this research, I describe them in more detail in chapter 3.2.1.

2.2.4 Summary

This chapter discussed the overarching societal role model of sustainable development – *first* in terms of its historical development, *second* in terms of the multifaceted approaches to defining the concept and, *third*, with respect to operationalizing the notion to make it productive for tackling real-world issues. The motivation behind this excursus stems from the function of the concept of sustainable development in this research: While it is not discussed on its own as outlined in more detail in chapter 1.3.2, it represents the normative canvas against which the framework for understanding local knowledge is elaborated in chapters 4–7. This entails that conceptually, the framework to be construed is compatible with a distinct underlying set of principles that in turn constitutes the notion of sustainable development formative for this research. While the latter is described in detail in the following chapter 3.2, this introductory chapter 2.2 serves to provide an insight into the complexity of the concept and the ramifications involved when working with it.

Notable insights from this chapter encompass that the concept is all but clear-cut, leaving room for many interpretations and related forms of implementation. In fact, the leeway left by the notion's flexible nature requires everybody working with it – be they researchers or development practitioners – to determine their respective understanding of the notion as well as their manner of operationalizing it, i.e. how to translate the abstract idea into actual projects and programs. This last step is crucial as, alternatively, a problematic procedural arbitrariness becomes almost certain and the standards of scientific transparency and accountability are jeopardized, as are those of development project/program accountability and impact assessment.

This tendency can be observed when analyzing the literature presented in the preceding chapters. The concept's often-cited vagueness with respect to clearly defining the object in question is also a characteristic feature of the majority of studies. Often, they lack what I would call an 'integrated understanding' of sustainable development that incorporates the various dimensions constituting the concept. While numerous studies in both the natural and social sciences briefly refer to the seminal Brundtland definition in their introductory paragraphs, they more often than not implicitly rely for the rest of their research on a concept centering on environmental protection and ecological resilience. The latter is firmly rooted in natural sciences, is based on an understanding of natural and social equilibrium and focuses on the socio-ecological axis; it invests in discussing issues of protection and preservation of nature and local cultures while not attributing too much importance to socio-economic issues related to livelihood development. This is also reflected in that these studies commonly only briefly touch upon sustainable development as a comprehensive societal role model and much more often use the adjective in compositions such as 'sustainable use', 'sustainable management' or 'sustainable adaptation'. Other studies reduce sustainable development to a specific area relevant to the respective research question and discuss a specific topic under a sustainability perspective, as e.g in the case of research on sustainable agriculture or in the nominal construction, e.g. ecological, agricultural, neighborhood sustainability etc. Again other scholars refrain from outlining their understanding at all, either equating it with development as such or using it in its mundane temporal notion of 'long-lasting – a widespread, however fundamentally flawed and under-complex understanding of sustainability. On the overall, it is striking that the concept is hardly challenged or critically reflected in terms of its limitations, its usefulness for the respective research question or the potentially problematic effects of related policies on local culture and knowledge.

Next to these fundamental issues regarding definition and operationalization, the concept turned out to carry problematic connotations itself. Conceptually, there is no doubt that in terms of defining and implementing sustainable development, power and development inequalities between industrializing and industrialized countries are at play, reflected and potentially reproduced. These aspects need to be taken into account and mitigated – not at least by providing a solid definition and operationalization of sustainable development at the beginning of every endeavor involving the notion.

In conclusion, while the literature discussed in chapter 2.2 related the notion of sustainable development to a great number of topics and studied their interaction, the majority of these studies lacks an initial outline and/or a reflection of the very sustainability understanding, leaving the subsequent research somewhat in a conceptual void. In prac-

tice, this is quite often reflected in a rather intuitive and mostly ecologically oriented understanding of and approach to sustainability that generally also abstains from reflecting on potential downsides and limitations of the concept itself.

However, notwithstanding these critical issues at times calling for abandoning the concept altogether, the future of the idea of sustainable development seems to be so far secured, not at least by means of the internationally accepted paradigmatic instrument of the SDGs that in the meantime has been widely taken up by both academia and the development sector. The success of the notion can mainly be attributed to sustainable development bringing something rather novel to the table conceptually, namely a pluralistic approach to solving interrelated and multi-dimensional problems. This pluralistic approach invests – and that is the main novelty – in connecting and systematically integrating a whole spectrum of issues (and of potentially competing interests) from the environmental to the human and economic spheres – issues that have generally been tackled in isolation or in competition to each other.

Against this backdrop, one can expect the notion to prevail and further shape debates on both development issues and environmental protection, in academia as well as in the political discourse. Such a development is further strengthened by sustainability's prominent and fairly sustained place in international, national and regional development strategies such as e.g. the MDGs or SDGs. However, even more compelling is probably that the real-world problems leading to its rebirth in the 1980s and 1990s not only continue to persist, but appear to intensify in a number of respects. In other words: The urgency of real-world challenges and issues humankind needs to tackle at the beginning of the 21st century seems to a certain extent to overshadow the inherent limitations of the sustainability concept, not a least due to it being up to date the most encompassing and overarching concept to work with on all levels, from global to local. In view of this, I consider it thus a promising strategy to continue working with the concept, under the condition that the notion is clearly detailed with respect to its specific use in an academic or applied context.

2.3 Interplay between 'local knowledge' and 'sustainable development'

Having discussed the notions of local knowledge (chapter 2.1) and sustainable development (chapter2.2), I describe in chapter 2.3 the interrelationship between the two concepts and sketch the various ways in which both local knowledge and sustainable development bear an influence on each other. *First*, I outline the significance of local knowledge for sustainable development (chapter 2.3.1), describing the numerous func-

tions and roles local knowledge is claimed to cover in the context of sustainable development endeavors. *Second*, the positions are reversed and the significance of sustainable development for local knowledge as stressed in the literature is specified (chapter 2.3.2). This involves describing the various ways in which the concept of sustainable development had and still has a formative influence on local knowledge, shaping and creating more favorable general frame conditions and potentially contributing to strengthening the concept institutionally by means of agreements, political declarations and policies. To this end, I outline the main institutional and political agreements taking account of and integrating local knowledge as pivotal driving factor. Chapter 2.3.3 concludes by summarizing and reflecting on the insights gained in chapter 2.3.

2.3.1 Local knowledge's role for sustainable development: multifunctionality / -valency

In view of pressing social and environmental issues from local to global scales there is a broad consensus[59] that local knowledge is pivotal to a variety of domains and thus has the potential to play a crucial role in advancing sustainable development (Agrawal 2004; Breu, Maselli, and Hurni 2005; Mazzocchi 2008; Obermeister 2019).[60]

In order to gain a more precise understanding of the various functions of local knowledge, I point in the following to a set of seven main functions addressed as such in the academic and applied literature.

First, local knowledge is foremost considered to be knowledge for survival: As outlined above, it is in the first place seen as extended **subsistence knowledge about the natural world for the survival of local communities** (Green et al. 2020; Isla 2007; Jamieson 2010; Quinlan and Quinlan 2007; Reyes-García et al. 2009; Vandebroek et al. 2011; Watson, Alessa, and Glaspell 2003). Reflecting many generations of experimentation and problem solving in close interaction with the natural surrounding, local knowledge is thought to display the ways how local communities around the world make sense of and interact with their ever-changing environments to safeguard their well-being and long-term survival. Such knowledge is commonly composed of "skills

[59] Regardless of all the potential, local knowledge is by far no panacea – on the contrary, some scholars scrutinize its appropriateness for informing global processes as e.g. sustainable development and point to tensions and problems that have led to it appearing less promising than initially hoped. These challenges result, among others, from a fixation on knowledge content and items, the resulting frequent de-contextualization of local knowledge, inadequate notions of the functions of balance and disturbances for overall ecosystem health and biodiversity conservation, general tensions between scientific and indigenous knowledge systems, the incompatibility of contemporary property and governance regimes with respective indigenous notions, an unrecognized complex stratification of knowledge within communities, uneven power relations and, finally, the long-standing romanticization of indigenous knowledge and the 'noble savage' (Briggs 2005; Maragia 2006; Thomas 2003).

[60] Critical voices relativize local knowledge's potential for sustainable development, mostly relating it to a mind-set characterized by backwardness, traditionalism and conservatism (cf. e.g. Nygren (1999); Snodgrass et al. (2008)) – or by "stereotypical constructs" thereof (Sillitoe and Marzano 2009:20).

and acquired intelligence" (Antweiler 2004:1) that represent a reaction to continually changing social and natural environments. As such, local knowledge is said to enable local communities to sustain their livelihoods by providing specified natural-resource related expert knowledge in various domains such as e.g. animal husbandry, agriculture, (agro-)forestry, fishing, hunting and healthcare. This polyvalent, life-preserving function of local knowledge also serves as rationale as to why in times of war, displacement and shortage local knowledge tends to experience a revival, as accounts from Bosnia-Herzegovina, Colombia, Congo, Burma and North Korea underline (Pierce and Emery 2005).

Second, and extending the relevance from local to potentially global levels, local knowledge is considered crucial with respect to **conversation, agricultural and natural resource management**[61] (Agrawal 2004; Briggs 2013; Brokensha et al. 1980; Dixon 2005; Dovie, Witkowski, and Shackleton 2008; Fraser et al. 2006; Heinrich et al. 2005; Mechik and von Hauff 2016; Rist and Dahdouh-Guebas 2006; Shukla and Gardner 2006; Suffice et al. 2017; Vermeylen et al. 2008; Vogl, Kilcher, and Schmidt 2005) as well as, recently, climate change mitigation (e.g. Kieslinger et al. (2019); Vierros and Ota (2019)).

In the last decades, scholars from different disciplinary backgrounds invested in specifying the adaptive capacity of local knowledge or of the specific holders of local knowledge respectively, mostly against the backdrop of the socio-ecological resilience concept (Berkes and Folke 1992). Outside academia, the recognized relevance of local knowledge for conservation and natural resource management crystallized in its integration in a number of contemporary policy documents such as the Rio Declaration, the Convention on Biological Diversity, the Earth Charter (cf. chapters 2.2.1 and 2.3.2) and, prominently, the United Nations Declaration on the Rights of Indigenous Peoples. There, it is officially confirmed and documented "that respect for indigenous knowledge, cultures and traditional practices contributes to sustainable and equitable development and proper management of the environment" (United Nations 2007).

A vast body of research details the various topical areas to which indigenous resource management and conservation knowledge and practices contribute. They include the management of forests (cf. e.g. Charnley et al. (2007); O'Flaherty et al. (2008); Sinclair et al. (1999)), coastal and ocean ecosystems (cf. e.g. Berkes (2007); Galappaththi et al. (2019); Grattani et al. (2011); Olson and Folke (2001); Stoffle and Stoffle (2007)),

[61] For the scope of this research, I refrain from distinguishing between resource management and conservation activities, given that depending on context and perspective the dividing line can be blurry and given that such a distinction is rather a reflection of a Western dichotomy than a perspective held by the local communities who heavily rely on natural resources for subsistence and survival.

biodiversity conservation (cf. e.g. Berkes (2007; 2007); Fischer and Young (2007); Maffi (2001); Nazarea (2006)), medicinal plant species (cf. e.g. da Silva et al. (2019); Hamilton (2004); Neffati and Belgacem (2008); Schippmann et al. (2006)), key species in general (cf. e.g. Castello et al. (2017); Dzerefos et al. (1999); Houehanou et al. (2011); Krupnik and Ray (2007)), issues related to water(shed) management (cf. e.g. Beall et al. (2011); Cremers et al. (2005); de Oliveira Braga et al. (2017); Vigiak et al. (2005)) and the prediction of ecosystem changes based on retrospection (cf. e.g. Dahdouh-Guebas et al. (2004); Ford (2001)). Other studies of that type focus on agroforestry (cf. e.g. Ilham and Esa (2018)) and agro-ecological issues in general (cf. e.g. Bellon (1995); Brodt (2001); Lado (2004)), discussing the relevance of local knowledge for veterinary applications (cf. e.g. Kone et al. (2012); Traoré et al. (2020)); sustainable soil management (cf. e.g. Ali (2003); Malley et al. (2009); Niemeijer and Mazzucato (2003); Pullido and Bocco (2003); Sillitoe (1998a); Tesfahunegn et al. (2011)), pasture/range management (cf. e.g. Bollig (1999); Müller et al. (2007)), reindeer pastoralism (cf. e.g. Tyler et al. (2007)) or for identifying imminent erosion (cf. e.g. Vigiak et al. (2005)). In addition, a number of studies underline the need for integrating local and scientific approaches and systems and suggest as well as review participatory approaches and assessment tools to achieve sustainable solutions (cf. e.g. Hill et al. (2020); Hurni (2000)).

Third, and overlapping with *second*, local knowledge is considered crucial in **preserving and transmitting distinct forms of social organization** that are consistent with the underlying principles of sustainable development (Rist 2007; Rist and Dahdouh-Guebas 2006; Saxena 2020) – knowledge that, as Rist underlines, goes beyond agricultural or forest-related expertise in the stricter sense. Exemplarily, he mentions “community-based regulations of access, distribution and use of natural resources [as well as] considering changing contexts and needs in the perspective of adaptive and learning-oriented reasoning” (2006:477). In addition to these approaches to social organization, local customary belief systems and related behaviors and institutions such as protected sacred groves (cf. e.g. Lebbie and Guries (1995)), buffer zone maintenance and social taboos (cf. e.g. Colding and Folke (2001))[62] were also deemed to be vital in managing natural resources and systems and maintaining such a management over time (Berkes et al. 2000; Ford 2001; Posey 2002; Posey and United Nations Environment Programme 1999; Reyes-García et al. 2006).

[62] Social taboos can come in various forms; prominent examples include specific food taboos, harvesting method taboos, taboos against harvesting in certain seasons or under specific conditions etc.

Forth, and generalizing the *third* aspect, local knowledge is commonly considered playing an important role in **preserving cultural and linguistic diversity in general** (Brosius and Hitchner 2010; Cocks 2006; Xu et al. 2005). In the late 1970s and in the course of the 1980s, it was recognized that numerous of earth's areas of highest biological diversity are inhabited by indigenous and traditional peoples and that biological, linguistic and cultural diversity are linked (Ferguson and Weaselboy 2020; Jamieson 2010). This led to the Declaration of Belém in 1988 (Posey and Dutfield 1996) where the inextricable link between cultural and biological diversity was underlined. Subsequently, increased attention was paid to the relationship between biodiversity and human diversity, a link that came to be known as 'biocultural diversity' (Posey and United Nations Environment Programme 1999). This link is thought to underline the relevance and significance of indigenous knowledge for preserving biodiversity and, thus, the "need to counteract the linguistic and cultural erosion" (Heinrich et al. 2005:7). This generally also extends to local knowledge in heritage conservation (cf. e.g. Aas et al. (2005)).

Fifth, local knowledge is considered and treated as a form of **capital from which products can potentially be developed and monetary value be generated** (Iwata and Hoskins 2020; Lengnick-Hall et al. 2010; Mechik et al. 2017; Orozco and Poonamallee 2014).[63] With respect to poverty reduction at community level, a number of studies explored the highly context-dependent effects of markets and market entries on the loss and retention of local knowledge and practices as well as the significant role of rural innovation and technologies for improving local livelihoods (Godoy et al. 2005; Godoy, Brokaw, and Wilkie 1998; Lu 2007; Reyes-García et al. 2007). In terms of value generation by external players, local knowledge gradually came to be recognized by Western companies as "a valuable strategic resource offering rare, inimitable, non-substitutable and effectively commercialized insights" (Lengnick-Hall et al. 2010:2) for the development of new pharmaceutical, agricultural, biological and aesthetic products. From this (business-oriented) perspective, local knowledge was and is seen as an 'under-used mine of information' or – in Nygren's words – "a culturally and socially free 'human capital' to be harnessed in the service of biobusiness" (1999:273). Reducing the focus to utilitarian purposes[64], local knowledge developed into an effective approach for con-

[63] However, the generation of monetary value was from the very beginning a rather one-sided project with the industrialized partners generally collecting the vast majority, if not all, of the revenues generated from local knowledge sources. This paradoxically results in local knowledge being deemed as "falling within the property commons, or as a knowledge system that is altogether excluded from a property rights, or intellectual capital discourse" (Orozco and Poonamallee 2014:1) – a perspective that turned out to be highly problematic (cf. e.g. Greene (2004); Nigh et al. (2002); van Niekerk and Wynberg (2012); Vermeylen (2007)).

[64] For an exemplary account of the detrimental consequences stemming from local knowledge being used by non-indigenous companies cf. e.g. Lengnick-Hall (2010).

ducting research, in the first place in the form of biological inventories of locally used plants, animals and minerals (Thomas 2003; Vandebroek et al. 2011). And as a matter of fact, bioprospecting activities indeed repeatedly benefited from local knowledge inputs (Agrawal 2004), especially in the beginnings of such endeavors[65], as famous examples such as artemisinin[66] or galanthamine[67] show (cf. e.g. Heinrich (2015b)).

With respect to actual financial revenues, especially profitable fields include the agrarian sector, in the fishing industry (e.g. cf. Quartey (2017)) as well as the domain of medicinal plant knowledge. With respect to the former and according to a study's estimation from 1996, at least $50 million in yearly sales were generated in the United States of America solely from genes isolated from 15 crops that were initially developed by means of traditional methods (Orozco and Poonamallee 2014). As for the domain of medicinal plant knowledge, various and cross-referencing publications, including an estimate by the World Health Organization (WHO), estimate that up to 85%[68] of the world population regularly rely on plant-based medicines for their primary health care (Fabricant and Farnsworth 2001; Farnsworth et al. 1985; Vuori 1982); in terms of market value, plant-based medicines are estimated to sell for e.g. 61 billion dollars in OECD-member nations alone (Dutfield 2000, 2017).

Sixth, local knowledge is generally considered playing a potentially important role in **international cooperation/development cooperation** where it has been advertised as "seemingly offering a way out of the development impasse" and as potentially contributing to sustainable development substantially (Agrawal 1995; Briggs and Sharp 2004; Fernando 2003; Vermeylen et al. 2008). Contrary to the past when local knowledge was generally deemed as static, backward, under-complex and therefore an obstacle to progress and development (Briggs and Sharp 2004), environmental as much as development agencies came to understand over time the actual level of sophistication of this knowledge type and began to correct their previous, undervaluing assumptions. Experience showed that development endeavors integrating and relying on local knowledge displayed a number of critical advantages over projects that abstain from doing so (Antweiler 2004; Gibson 2019). Acknowledging that the perspective contributed by local knowledge was critical for advancing development agendas, development agen-

[65] In the meantime, local knowledge lost some of its appeal and potential for the process of identifying new leads, as described by Graz et al. (2007); Gertsch (2009) and Heinrich (2015b), not at least because a significant number of the most relevant plant constituents have already been identified or, as Moerman coined it, "the low-hanging fruits have already been picked" (Gertsch (2009), reference to personal communication with Moerman therein).

[66] Artemisinin is a drug against the most serious variant of malaria stemming from Plasmodium falciparum and is derived from the Chinese plant Artemisia annua L.

[67] Galanthamine is an anti-Alzheimer's drug first isolated from Galanthus and Leucojum species and from other members of the Amaryllidaceae.

[68] More moderate voices estimate that it amounts to 70-80%, underlining, however, that the estimation is said to be best seen as 'good educated guess' (Püschel 2019, private communication).

cies were increasingly willing to incorporate local knowledge into programs and projects. While a comprehensive and exhaustive integration of local knowledge into development policy remains contested to date (Maragia 2006) and varies depending on the numerous interest groups at play (Fernando 2003), there is generally a broad consensus that local-level participation and the facilitation of the information and technology exchange through local/traditional/indigenous channels instead of traditional extension methods significantly rises the likelihood of achieving more promising results (Dixon 2005).

Finally and *seventh*, local knowledge came to be considered as potentially pivotal for **disaster preparedness and response/mitigation**. This rests upon the realization that such knowledge has been acquired by local communities through persistent observation of and interaction with the environment over long periods of time, resulting in them being able to provide potentially vital contributions in emergency management for natural hazards. It was therefore understood that local knowledge can indeed contribute to making sense of the nature of local hazards, propose adequate risk reduction and response mechanisms and, building on past experiences, even provide potential countermeasures for recovery (Becker et al. 2008; Gyampoh et al. 2009; Tumenjargal et al. 2020). As a result, local knowledge came to be seen as valuable in both short and long term: While some approaches focus on its potential with respect to long-term sustainable adaptation strategies to climate variability and climate change (Eriksen et al. 2011; Lebel 2012)[69], other studies localize the potential of local knowledge in the management of more immediate extreme situations and contexts. On a topical level, this entails, among others, local knowledge on the management of flood protection (Gyampoh et al. 2009; Mavhura et al. 2013; Wilms 2005) and of extreme weather events in general (Aparna and Trivedi 2011). Other studies focus on local knowledge's contribution to managing land slides (Lin and Chang 2020), tsunami hazards (Becker et al. 2008; Walshe and Nunn 2012) or volcanic hazards (Donovan 2010; Jigyasu 2019; Mercer and Kelman 2010; Schmitz and Ocampo 2019).

In general, the various functions outlined above do not occur in isolation, but are often intertwined, to varying degrees. In order to **exemplify this multi-valency of local knowledge** discussed in the literature against the backdrop of sustainable development, I briefly describe these functions hereafter using the case of local medicinal knowledge on plants, animals and minerals and its contribution to healthcare. Such an exemplification specifies the value of local knowledge at different levels and in different

[69] As argued under *second*, these studies are related to measures undertaken with respect to environmental conservation and agricultural and natural resource management.

respects: *First (and subsistence-related)*, it provides indispensable primary healthcare to poor rural people in regions where main-stream bio-medical healthcare is far too expensive, lacking in quantity or quality or is even completely absent (cf. e.g. Alves and Rosa (2007); Panyadee et al. (2019); Salim et al. (2019); Vandebroek et al. (2004))[70]; *second (and related to local/regional commercialization)*, it functions as an alternative, more satisfying healthcare option than bio-medical healthcare for two distinct populations: on the one hand transnational migrants turning to familiar traditional biodiversity-derived remedies and food supplements (cf. e.g. de Medeiros et al. (2012); Mahomoodally et al. (2019); Reiff et al. (2003); Yöney et al. (2010)) and on the other hand Western consumers seeking to avoid the escalating cost spiral linked to sophisticated modern bio-medicine or to lower side effects and prevent over-medication (cf. e.g. Ernst (2003); Nilsson et al. (2001)); *third (and related to global commercialization)*, it represents an avenue for singling out promising candidate plant species for discovering and developing new pharmaceuticals (cf. e.g. Salam and Quave (2019); Schmidt and Ribnicky (2007); ten Kate and Laird (1999); for a critical account cf. Heinrich (2015b), Heinrich and Jäger (2015); Leonti and Casu (2013)). *Forth (and related to conservation/resource management)*, it provides the knowledge base for sustainably managing the medicinal plant species in question in terms of their collection or harvesting, which in turn contributes to resource management and conservation endeavors (cf. e.g. Alves and Rosa (2007); Ghimire et al. (2004); Hamilton (2004)). *Fifth (and related to the preservation of both social organization and cultural/linguistic diversity in general),* in sustainably managing the medicinal plant species in question using the existing social and cultural institutions, local knowledge also contributes to keeping these non-tangible ways of organizing people and nature alive (cf. e.g. Anthwal et al. (2006); Colding et al. (2003); Manasi et al. (2020); Singh et al. (2010)). *Sixth (and related to enhancing development activities)*, local knowledge on medicinal plants can also serve as a cultural repository and result in the production of locally-inspired handicraft made from natural resources that not only provide income, but also promote “synergies between handicraft and conservation of local plants from which resources are derived for handicraft”

[70] Nearly all cultures from ancient times to the present day have used plants as a source of medicines. Despite modernization, this seems unchanged for both industrializing and industrialized countries. As described above, between 70-85% of the residents living in developing countries rely on traditional biodiversity-derived therapies for their primary healthcare needs – partly due to cultural preferences and partly due to exorbitant costs of pharmaceutical products (Shanley and Luz 2003). In industrialized countries, next to serving as compounds in pharmaceutical products, plants came to be seen as viable alternatives or complements to modern medicine. Accordingly, they remain widely used in the form of herbal medicine that is primarily administered to lower side effects, prevent over-medication or to avoid the escalating cost spiral linked to sophisticated health care. In fact, the resurgent public interest in the use of plants as medicines has led to a skyrocketing increase in sales of herbal medicine in Europe and the United States since the 1990ies (Akerele, Heywood, and Synge 1991; Kate and Laird 1999; Lewington 1993; McCaleb 1997; Schippmann et al. 2003).

(cf. e.g. Giraldo-Cañas (2010); Jain et al. (2005); Kotze and Traynor (2011); Tori (2014:419)).[71]

2.3.2 Sustainable development's role for local knowledge: institutional-political support

The last few decades have been characterized by a broad shift in valuations, including with respect to natural resources, the access to them as well as the distribution of benefits resulting thereof. It was understood that ever since humans started to inhabit the planet, natural resources were indispensable for their development. In fact, collecting wild plants and animals has been crucial for human survival and subsistence (cf. e.g. Heywood (2015); Leonti et al. (2003); for a historical account cf. Dias et al. (2012); Leonti and Verpoorte (2017))[72]. In this vein, plants and animals from around the world were collected by local populations as well as outsiders[73] since ancient time to be used as food, medicine, fiber, oil or energy crops. With the beginning of the age of discovery and conquest, adventurers and academics of diverse backgrounds, foremost naturalists and biologists, were involved in sampling animals and plants that could potentially be exploited, either directly in the country of the natural products' origin or in their own (often European) home countries. Interestingly, over all these centuries, the freedom of individuals, organizations or companies to do so was hardly restricted. In fact, the world's biodiversity – i.e. its plants, animals and microorganisms – was considered to be "the 'common heritage of mankind' and there to be exploited more or less at will" (Heywood 2015:42). This is the case in particular in the 20th century with a range of Western pharmaceutical companies heavily investing in exploring plants and screening large quantities of species to identify unknown sources of natural products that might potentially result in the development of new drugs.

In terms of ethical considerations, until approximately 30 years ago, the basic assumptions underlying such an exploration approach were not questioned. On the contrary, it represented an essential part of the colonial process with specific practices even persisting to the present day under, what Heywood calls, "various guises" (Heywood 2015:42).

---

71 The seventh application of local knowledge in the context of 'disaster preparedness and mitigation' does not apply to the example of local medicinal knowledge on plants, animals and minerals and its contribution to healthcare.

72 According to these authors, records on the use of e.g. herbal medicine date back to the ancient civilizations of Mesopotamia, Egypt, China and Greece.

73 In fact, people non-indigenous to a specific place collecting and exploiting local animals and plants has a long-standing tradition with the first accounts dating back to the "expedition to Punt (probably today's Somalia) sent by Queen Hatshepsut of Egypt in 1495 BCE to bring back trees with fragrant resin" (Heywood 2015:42).

In the last decades, however, this situation changed, foremost in the course of the late 1980s and 1990s: The ever-increasing destruction and depletion of nature and a growing understanding of the endangered wealth hidden in biological (and, for that matter, cultural) diversity resulted in a renewed appreciation of the natural world and of the people that were recognized to be often highly knowledgeable about this world. It was realized that the knowledge of these local populations has a role to play in the overall endeavors to move towards sustainable development.

This understanding gradually resulted in a number of policies, agreements and permits that are founded on international and bilateral treaties. These aim at conserving biological and cultural diversity in the context of economic initiatives, development endeavors and academic research activities involving the use of a country's biological and cultural resources. The most important schemes and policies that were agreed upon in the wake of the Earth Summit in Rio in 1992 include a) the CBD, specifically b) its 3rd article addressing the equitable and fair sharing of benefits through Access and Benefit Sharing (ABS), c) the Nagoya Protocol, c) the BioTrade Initiative and d) additional treaties as well as various declarations and 'soft law approaches'. As Lienert (2017) underlines, these schemes all share two objectives: They address the conservation of biodiversity as well as the sustainable use of biological resources, aiming at making room for a co-existence of humans and the natural world.[74] In the following, I briefly describe the schemes and policies mentioned above.

a) The Convention on Biological Diversity

The CBD, signed at the 1992 Earth Summit in Rio de Janeiro and put into force in 1993, is the principal international regulatory agreement to deal with ownership of genetic resources. It looks at the rights and tasks associated with biodiversity at an international level, recognizes national sovereignty over biological and cultural resources and "calls for the respect and maintenance of local knowledge practices" (Escobar 1998:58). Determining the rights of countries, it provides a biodiversity-based frame-

[74] While many see advantages and merits in preserving local biological and cultural knowledge by means of institutional and political arrangements, other scholars point to a number of problematic aspects linked to this approach. The main concerns extend to the issue of intellectual property rights (cf. e.g. Agrawal (2002); Marinova and Raven (2006); Mgbeoji (2006)) and to the issue of 'de-contextualization' of biodiversity components and their appropriation and extraction (cf. e.g. Escobar (1998)). The latter results in threatening the "sacred balance" between all life and "violat[ing] the kinship relationships that indigenous and traditional peoples maintain with their 'extended family' of all living things" (Posey 2002:11). Other critics argue from specific perspectives as e.g. the 'ecofeminist' perspective advocated by Isla (2007) who, as Heinrich (2015b) reports, perceives of "the current triumphant neoliberal agenda as a continuation of a long history of capitalist, patriarchal, and racist colonization of women, peasants, indigenous peoples, land, and nature" (2007:323). This takes up the argument of the capital's predation of local ecologies and knowledge brought up by Shiva (1997), stressing the lack of equity in a number of respects, given that often, not all knowledge holders are consulted or compensated and more often than not, knowledge ownership cannot easily be located. Problematically, such issues of missing equity can worsen the overall situation for the local population as conflicts can ensue within a community and among communities (cf. e.g. Shiva (2007), referred to in Heinrich (2015b)).

work for research and development at an international level (Heinrich 2015a) and has tree main objectives, namely a) the conservation of biological diversity, b) the sustainable use of components of biological diversity and c) the equitable and fair sharing of the benefits ensuing the utilization of genetic resources[75] (for the latter cf. the following paragraph).

The rights of indigenous peoples and other keepers of local knowledge is clearly stated in article 8j (United Nations 1992):

> '(j) Subject to its national legislation, respect, preserve and maintain knowledge, innovations and practices of indigenous and local communities embodying traditional lifestyles relevant for the conservation and sustainable use of biological diversity and promote their wider application with the approval and involvement of the holders of such knowledge, innovations and practices and encourage the equitable sharing of the benefits arising from the utilization of such knowledge, innovations and practices.'

In other words, the CBD strives for establishing a sound basis for the commercial use of natural products by creating ownership rights in genetic resources that, in turn, promote and regulate that use (Greene et al. 2004) – a use that, as Hesketh stresses, can subsequently be complemented and reinforced "by other forms of I[ntellectual] P[roperty], such as patents" (2015:87). Countries possessing resources relevant for natural product research and drug development are attributed well-defined rights that also extend to the contested topic of sharing potential benefits arising from such research (Greene et al. 2004; Heinrich 2015b).

Next to promoting the conservation and sustainable use of natural resources, the CBD concentrates on allocating more direct benefits to the peoples and states where biological resources and related local knowledge originate. It does so on the basis of the understanding that biodiversity constitutes a rich source for a potentially broad palette of commercial products and that in view of potential benefits, regulations need to be established. Concretely, in its 3rd article, the CBD requires its signatories to share the benefits arising from the use of genetic resources and associated local knowledge with those who granted access in the first place – an approach commonly known as ABS (Heinrich and Hesketh 2019; van Niekerk and Wynberg 2012).

However, the CBD provides only the general framework for ABS measures designed to establish sound business relations. The actual implementation remains challenging. To facilitate the implementation process and promote access and benefit sharing, the so-

[75] Genetic resources include all living organisms, on the basis of the argument that even microbes carry genetic information that could potentially benefit humans. Such resources are sourced in-situ (i.e. from the environments they naturally can be found) or ex-situ (i.e. from human collections such as seed banks or botanical gardens).

called ‘Bonn Guidelines’ and the ‘Nagoya Protocol’ were formulated. These two regimes are briefly described in the following paragraphs.

b) Access and Benefit Sharing I: The Bonn Guidelines

At the sixth meeting of the Conference of Parties to the Convention on Biological Diversity in 2002, the ‘Bonn Guidelines on Access to Genetic Resources and Fair and Equitable Sharing of Benefits Arising out of their Utilization’ (BGL) were adopted, allocating great emphasis to the interests of local people. This approach was designed to promote ABS by providing a transparent framework to facilitate and ensure said access and sharing of benefits. It is expected “to contribute to poverty alleviation and be supportive to the realization of human food security, health, and cultural integrity, especially in developing countries” (CBD 2002, Art 11(k)). Importantly, with respect to the knowledge of local communities, the BGL’s scope explicitly extends to both commercial and non-commercial benefits from biological resources and related traditional (local) knowledge. As Geck (2011) specifies, the BGL center on contractual agreements, i.e. the establishment of national authorities and strategies, the compliance to requirements regarding ‘prior-informed consent’ and ‘mutually agreed terms’ and, centrally, local capacity-building, namely foremost in local communities and among the rural and indigenous population in industrializing countries to equip them with a proper understanding of the ABS regime. In the frame of the BGL, benefits need to be allocated such that they “promote conservation and sustainable use of biological diversity” (CBD 2002:14). Thus, they are to be distributed adequately among all parties involved, including local communities and academic institutions. Such benefits can be both monetary and non-monetary. For the latter, Geck (2011) lists a number of examples from the CBD, including providing access to scientific information on the conservation and sustainable use of locally occurring biodiversity, contributions to education and training in the research area, contributions to the local economy and research on priority needs of the local community such as e.g. local food and health security.

While, historically speaking, the BGL are indispensable in developing appropriate approaches for implementing CBD’s concerns, they were limited in their scope given their voluntary character that proved unable to provide legal certainty for the usually most vulnerable of stakeholders involved, the local communities.

c) Access and Benefit Sharing II: The Nagoya Protocol

Additionally reinforcing rights of ownership by operationalizing the ABS system, a second supplementary agreement to the CBD entitled ‘Nagoya Protocol’ deals with the access to genetic resources and the fair and equitable sharing of benefits resulting their

utilization. Specifying the CBD, it aims at sharing the benefits arising from genetic resources in a fair and equitable way, "including by appropriate access to genetic resources and by appropriate transfer of relevant technologies, taking into account all rights over those resources and to technologies, and by appropriate funding" (CBD 2011, Art 1), thereby contributing to the conservation of biological diversity and the sustainable use of its components. It was adopted in 2010 at the 10th meeting of the Conference of Parties to the CBD and came into force in 2014; currently, it has been ratified by 113 UN member states and the European Union. Based on the insights stemming from working with the BGL and reassuring many of its positions, the Nagoya protocol aims at establishing an international, legally binding framework to promote a transparent and effective implementation of the ABS system at local, regional and national levels by means of compliance provisions (cf. e.g. Greiber et al. (2012); Heywood (2015); Lienert (2017)). As for the implementation of the ABS regime itself, the Nagoya protocol requires it to be consistent with "local communities' customary law, community protocols and procedures, as applicable" (CBD 2011:9). Chiefly, in contrast to the voluntary nature of its precursor (the BGL), the Nagoya protocol is legally binding for its parties (Geck 2011). As Hesketh (2015:88) specifies, article 15 of the CBD underlying the Nagoya Protocol obliges all ratifying countries to guarantee that "natural products used in that country have been correctly accessed and mutually agreed terms have been established". Though the protocol has the potential for poverty eradication and ensuring environmental protection, establishing suitable national frameworks for ABS is still pending, with one of the bigger barriers consisting in determining conclusively "what the sharing of benefits actually means" (Lienert 2017:49).[76]

d) Access and Benefit Sharing III: The BioTrade Initiative

Complementing the ABS system addressing products from biological resources that require complex research and development processes, the BioTrade Initiative initiated by the United Nations Conference on Trade and Development (UNCTAD) in 2007 aims at structuring on domestic and international level the trade involving the vast palette of products collected, derived or harvested directly from nature. To do so, it elaborated a collection of criteria and principles constituting a framework that steers the development of integrated policies for trading biological resources sustainably at national levels.

The overall guiding principles are shown in the following table 2 by Lienert (2017), adapted from UNCTAD (2007):

[76] For an analysis of the current state of the art of Access and Benefit Sharing under the Nagoya Protocol in six Latin American case studies cf. Echeverría et al. (2020).

1	Conservation of biodiversity
2	Sustainable use of biodiversity
3	Equitable sharing of benefits derived from the use of biodiversity
4	Socio-economic sustainability (management, production and markets)
5	Compliance with national and international legislation
6	Respect for the rights of actors involved in biotrade activities
7	Clarity about land tenure, use and access to natural resources and knowledge

Table 2: The BioTrade criteria and principles

For trade activities to constitute BioTrade according to the definition by UNCTAD, they need to necessarily involve “activities of collection, production, transformation and commercialization of goods and services derived from native biodiversity under the criteria of environmental, social and economic sustainability” (UNCTAD 2007:9)

Building on these efforts by UNCTAD and reacting to the need formulated by small and medium-sized enterprises in industrializing countries for approaches to discriminate biodiversity-based products in their markets, the Union for Ethical BioTrade (UEBT) was founded in 2007 in Geneva, Switzerland. Its main goal consists in providing practical guidance for the private sector regarding ethical sourcing of biodiversity in accordance with the objectives of the CBD.

e) Additional treaties and soft law approaches

Recognizing the relevance of and the simultaneous threat to local knowledge, a number of additional, complementing conferences were held and policies signed. All these endeavors aim at strengthening local self-reliance and subsistence economy, guarantee fair access to natural resources as well as markets and strive for an overall decentralization of decision-making. Notable events, publications or declarations include the 1999 Budapest Conference of the United Nations Educational, Scientific and Cultural Organization (UNESCO) (Gomez-Baggethun et al. 2010), the Millennium Ecosystem Assessment (Reid 2006), the United Nations Decade of Indigenous Peoples 1995-2004 (Durie 2004), the establishment of the United Nations Permanent Forum on Indigenous Issues in 2002 (Durie 2004), the Indigenous Peoples International Declaration on Self-Determination and Sustainable Development prepared for the 2012 Rio+20 Summit (Davidson-Hunt et al. 2012), the Convention on International Trade in Endangered Species of Wild Flora and Fauna (CITES) (Heywood 2015) as well as numerous international agreements such as e.g. the one on Trade-related Aspects of Intellectual Property Rights (TRIPS) by the World Trade Organization (WTO) or convention 169 by the International Labour Organization (ILO) (Heinrich 2015b). Additional soft law approaches are specifically targeted at securing the conservation of medicinal and aro-

matic plants, not at last against the adverse effects of over-harvesting. Examples of such guidelines listed by Heywood (2015) include e.g. the WHO (2003) Guidelines on Good Agricultural and Collection Practices (GACP) for Medicinal Plants, the International Standard for Sustainable Wild Collection of Medicinal and Aromatic Plants (ISSC-MAP) (2005) or the FairWild Standard version 2 (2010).

2.3.3 Summary

Looking at the vast literature dealing with the topic of local knowledge in the context of sustainable development, the highly diverse character of the debates becomes apparent. This is all but surprising given that the multifarious notions of local knowledge stemming from both academia and applied development research (cf. chapter 2.1) are met by a comparably broad range of conceptualizations of the normative and all but clear-cut concept of sustainable development (cf. chapter 2.2). Discussing the interrelationship between the two concepts and the respective impacts on each other, I first crystallized from the literature seven main functions and roles of local knowledge for sustainable development (cf. chapter 2.3.1). Complementing this perspective, I outlined in chapter 2.3.2 the various sustainability-related institutional and political agreements, treaties and declarations that acknowledge and potentially strengthen local knowledge's role and potential for sustainable development.[77]

Analyzing the two bodies of literature reveals a certain imbalance in how these two concepts are related to each other with the concept of sustainable development being favored and that of local knowledge being mostly attributed a subordinate role. Although both debates share the characteristic of a strong emphasis on, if not bias towards the ecological dimension and environmental concerns, their overall integration is marginal. This can be seen in that a vast majority of studies discussing sustainability and local knowledge issues is primarily concerned with describing the manifold, mostly management-related and rather pragmatic applications and functions of local knowledge for the purpose of advancing sustainable development, on all scales from single resource management activities to the management of whole regions or ecosystems.

Thus, most of the research subscribes to a somewhat unilateral perspective, focusing on the benefits for sustainable development stemming from local knowledge. Accordingly, they describe role, value and function of local knowledge for advancing and sup-

[77] An alternative approach of relating 'local knowledge' and 'sustainability' would consist in turning to the already existing Agenda 21 (cf. chapter 2.2.1) as there, similar considerations regarding the mutual relationship between local knowledge and sustainable development are made. While such an approach would have the merit of being more implementation-oriented, it would necessarily do so at the expense of covering the breadth of the interdisciplinary academic and applied literature. Given that this research subscribes, among others, to compiling and analyzing a broad interdisciplinary literature body on 'understanding local knowledge in the context of sustainable development', I opt for directly accessing the literature instead of recurring to Agenda 21.

porting sustainable development and underline its importance. Not seldom, holders of local knowledge are thereby presented as stewards of natural resources, regardless of whether their specific way of interacting with the environment can indeed be said to subscribe to an attitude of stewardship.

In a similarly over-simplifying vein, only few studies critically discuss the different relevance attributed to the two concepts and the power configurations resulting thereof. This extends to contradictions arising between the objectives of nature conservation and those of preserving the physical and social integrity of the local communities living within the territories in question. Experience has shown that situations of that type often result in tensions between the environmental and social dimensions of sustainable development with the environmental dimension having a tendency to being privileged over the social one.[78]

When it comes to the significance of sustainable development for strengthening local knowledge, one has to acknowledge the absence of a comparable body of research. In fact, publications on how sustainable development can foster local knowledge are genuinely rare and comparably little attention appears to have been given to the potential of the umbrella concept of sustainable development for supporting and strengthening local knowledge more adequately and efficiently. The underlying reasons for this bias and the ensuing imbalance can be expected to be more political in nature than a direct result from the ever-evolving academic and applied debates.

Consequently, the relationship between the notions of local knowledge and sustainable development can be said to be to a certain extent unidirectional in character and to border at an instrumentalization of the former. In this respect, I share Raynaut et al.'s (2007) conclusion in which they argue that the decisive questions boils down to determining for whom exactly sustainable development is to be attained and whether local interests are thereby considered playing a substantial role.

2.4 Synthesis of the three debates

Analyzing the three debates outlined above – on local knowledge, sustainable development and the interrelationship between the two concepts – reveals that on the overall, they not only remain rather vague in terms of developing systematic and conceptual approaches, but are also not yet systematically related to each other. In the following I detail this statement with respect to all three debates outlined earlier (cf. chapter 2.4.1, describe the related knowledge gaps they exhibit (cf. chapter 2.4.2) and close with an

[78] Exemplary publications covering this topic include Pullman et al. (2009) and Sarkis et al. (2010).

outline on how I intend to contribute to mitigating these knowledge gaps in the frame of this project (cf. chapter 2.4.3).

2.4.1 Analysis of the three debates

Local knowledge is mostly discussed in the context of specific natural resource systems, often in the form of single, rather pragmatic case studies, and in the majority of cases in terms of its conservationist functionality. When it comes to describing actual local knowledge forms, current research has a clear tendency to study local knowledge in terms of its epistemic content, mostly almost exclusively with respect to knowledge about the environmental dimension. This involves questions regarding what is to be known about the natural world, but leaves aside questions that investigate other aspects of a given local knowledge form that reflect local institutions and traditions, inquiring e.g. how the knowledge in question is generated and transmitted, where it originates from or how newly generated knowledge is legitimized locally. Consequently, the majority of studies only invest in learning about specific sections of a given local knowledge body, which in turn entails partial descriptions. Resulting from such an unbalanced approach, the majority of studies are descriptive and enumerative in character and focus on the collection of items from the natural world, including corresponding specimen vouchers for later archiving. They do, however, not invest in elaborating a conceptual-analytical and systematic approach to understanding local knowledge in a balance manner. Consequently, overarching, interdisciplinary, theoretical and conceptually-driven studies are largely missing.

Research on *sustainable development* runs the risk of being characterized by the inherent definitional vagueness of the concept that, as a matter of fact, would require researchers to first determine the type of sustainability approach suitable for the research in question – a step often left out in research as well as development projects. As a result, the approaches to sustainable development to be found in respective publications are not seldom somewhat superficial and under-complex. Often on the basis of a brief reference to the Brundtland definition with no further specification[79], such studies tend to rely on a distorted understanding of sustainability that either only acknowledges the temporal dimension, equating sustainable with ‘long-lasting’ or that centers on ecological resilience, a concept from the natural sciences that does not leave much room for socio-economic questions and issues related to livelihood and development strategies. In a similar vein, over the last few years the SDGs became a second, often cited point

[79] This has a certain irony as the Brundtland definition of sustainable development does – in fact – not allow for prioritizing the environmental over the social dimension in positioning the ‘needs of humans’ at the center of all sustainability endeavors.

of reference[80], resulting in the concept of sustainable development being at times simply equated to the 17 goals constituting the SDGs – an approach considered potentially under-complex by scholars studying the multilayered concept from a theoretical perspective (Burger 2019, personal communication). Overall, there is a lack of what could be called an integrated understanding of sustainable development that incorporates the various dimensions of sustainable development and does not shy the inherent weighting of the (not seldom contradicting) dimensions of the concept.

In view of the biases and limitations of the debates on local knowledge and sustainable development and their interrelationship, it comes as no surprise that the combination of the two strands – the literature on *local knowledge in a sustainability context* – displays similar characteristics: *First*, a certain imbalance can be observed: While local knowledge is assigned a range of various roles and functions within the overall endeavors towards sustainable development, relatively little scrutiny is applied when it comes to studying the potential of the umbrella concept of sustainable development for supporting and strengthening local knowledge.

Second and related to his, hardly any research discusses the potential contribution of sustainable development to advancing 'local knowledge'. In fact, the overarching concept of sustainable development is not challenged or critically reflected in terms of its usefulness and appropriateness for handling 'local knowledge'. This, in turn, results in a rather intuitive and mostly ecologically-oriented approach to the topic that is limited per se and therefore leads to an incomplete and distorted notion.

Third, there is a bias towards the environmental dimension in both debates in that while acknowledging the need for management interventions, most research primarily studies management with respect to its relevance for adaptation and ecological resilience/ sustainability. This strong focus on the ecological dimension reflects the communities' undisputed dependency from natural resources, but comes at the risk of not adequately considering the human development perspective for which the integration of social or economic activities to foster local and regional development is paramount.[81]

2.4.2 Identification of the knowledge gaps

Against the backdrop of this analysis on the three debates, I see the following four knowledge gaps in the literature strands discussed above.

[80] Some scholars go as far as claiming that the prevalence of the Brundtland-definiton for substantiating sustainable development in the first decades of the debate has been replaced by an understanding that equates the complex notion to sustainable development as characterized and operationalized in the SDGs – a potentially problematic simplification (Burger 2019, personal communication).

[81] This can e.g. take place by means of instruments such as micro financing, fair trade schemes or cooperative organization forms (von Hauff and Claus 2012; Mechik et al. 2017).

First, there is a need to base future research in this field from the start on notions of 'local knowledge' and 'sustainable development' that are conceptualized in a way that is complex and comprehensive enough for these genuinely multifaceted notions. Opting for an interdisciplinary approach to integrate a number of differing perspectives on the same topic represents a vital step towards establishing a solid conceptual basis to start with that allows for a broader and more balanced approach to local knowledge. Such an approach would not only aim at extracting specific, mostly ecology-related knowledge items from local knowledge repositories, but rather at gaining a more encompassing understanding of the complex character, structure and facets of the knowledge body itself, in addition to learning about specific knowledge items. This way, these individual knowledge items could subsequently be contextualized at appropriate levels of sophistication and complexity.

Second, future studies in academia and applied development research would greatly benefit from a theory-based approach to local knowledge, ideally conceptual-analytical in character – as opposed to the descriptive-enumerative approaches that were prominent in the last decades. Importantly, such an approach has to at the same time remain localized in character in view of the overarching topic being '*local* knowledge' (cf. chapter 6 for the aspect of the localization). A theory-based and -driven approach would have the additional benefit of being structured and systematic and, thus, of allowing for comparative research due to the shared framework structure. It might also facilitate its uptake across academic disciplines, especially in the natural sciences where scholars might be more inclined to embrace a heuristic that is heavily influenced by social sciences if it adheres to a certain systematization.

Third, future research on local knowledge issues (regardless of whether in a sustainability context or not) would greatly benefit from approaching studies on alien knowledge environments with more epistemological caution and an awareness of the fundamental perceptional and mental challenges involved in attempting to make sense across epistemologies and cultures. Such epistemological caution can take different forms, but integrating into one's research design a reflexive layer that guides one in critically assessing what is intuitively thought to represent knowledge seems more than advisable, if scientific standards are to be upheld.

Forth, future research on local knowledge subscribing to a sustainability orientation would greatly benefit from specifying not only the individual concepts formative for the research as stated above, but should in fact also strive for detailing the interrelationship between these two concepts. This is all the more the case as both 'local knowledge'

and ‘sustainable development’ are notions far too multifaceted for confining them to individual disciplinary debates. In fact, the two notions almost suggest that one strives for integrating the discourses across academic debate traditions to do justice to their inherent complexity. In any case, it is paramount to ensure that the sustainability conception selected is broad enough to accommodate and integrate the many characteristics of local knowledge. In a similar vein, the relationship between the two concepts needs to be established beforehand; this involves clarifying whether both concepts are considered to be on equal par or whether one of the concepts involved takes up an auxiliary function. Clarity in these regards prevents an arbitrary and uncontrolled hierarchization of the concepts involved which tends to be decided in favor of the more abstract concept, which is in the given case ‘sustainable development’.

2.4.3 Mitigation of the knowledge gaps

Given that this project strives to develop a heuristic instead of providing answers to specific research questions, the procedure how knowledge gaps are handled is adapted accordingly. In this setting, I consider it best to ensure that the framework developed in the course of this research is designed such that it does not lend itself to reproducing the knowledge gaps identified in the three debates discussed above. To facilitate this, I propose to derive from these four knowledge gaps a set of specifications as to how the framework needs to be construed or, more precisely, what topical aspects that were found missing in the literature reviews need to be taken account of and integrated accordingly. This way, I can ensure that the knowledge gaps are taken into consideration in the very process of developing the framework.

The following table 3 translates these knowledge gaps into the specifications for the framework development (cf. Chapter 1.3.2).

Four knowledge gaps identified in the three debates (cf. chapter 2.4.2)	**Five specifications for the framework development (cf. chapter 1.3.2)**
1) lack of complexity and comprehensiveness in the way how local knowledge is conceptualized and, related to this, 2) lack of conceptual-analytical approaches that are structured and systematic in character	Interdisciplinary and conceptual-analytical approach to ‘local knowledge’ by means of analyzing the components individually, i.e. a) focus on ‘knowledge’ as main notion with b) locality serving as modifier
3) lack of reflexive layer to mitigate epistemological challenges related to the process of ‘*understanding* local knowledge’	c) integration of a reflexive layer by d) clarifying the function and character of the concept of ‘understanding’
4) lack of clarifying the interrelation between the concepts of ‘local knowledge’ and ‘sustainable development’	e) clarification of the function and character of the concept of ‘sustainable development’

Table 3: Relationship between knowledge gaps and framework specifications

3 Conceptualizing the key concepts for the framework development

Against the backdrop of the literature reviews on local knowledge, sustainable development and their interplay in chapter 2, chapter 3 invests in setting the ground and clarifying the notions formative for this research – 'local knowledge', 'sustainable development' and, to a lesser extent, 'understanding'. In a first step, this entails briefly sketching the notion of 'local knowledge' pertinent to this research (chapter 3.1) – obviously only in its broadest terms in the form of a working definition as the actual exploration of local knowledge and its understanding represents the actual task and scope of this research. Chapter 3.2 outlines the notion of 'sustainable development' underlying and informing this research where it serves as the normative canvas against which the framework for understanding local knowledge is developed. Both chapters follow the same structure: First, I discuss terminological issues (chapters 3.1.1 and 3.2.1) before describing the respective conceptual understandings (chapters 3.1.2 and 3.2.2).

Concluding the triplet, chapter 3.3 turns to the third term relevant for this research, namely' 'understanding', understood in the sense of a 'reflexive understanding'. In contrast to the two preceding notions, 'understanding' plays an auxiliary role in this project (cf. chapter 1.3.2), which also explains why I only sketch the notion along very general lines. This implies that I refrain from entering into any terminological or conceptual discussions and limit myself to outlining the broad lines.

3.1 Conceptualizing 'local knowledge' for this research

In the following, I start in chapter by explaining the rationales behind my preference for the term 'local knowledge' among the many options, ranging from farmers' knowledge, to ecological, indigenous and traditional knowledge, to only name a few (chapter 3.1.1). In a second step and on the basis of the literature review (cf. chapter 2.1), I outline the conceptual understanding of local knowledge informing this research (chapter 3.1.2).

3.1.1 Terminological questions

As argued in chapter 2.1.1, there is a myriad of terms used for what I call 'local knowledge' in this research in both the scientific discourse and the applied development context. This variety of terminologies, definitions and concepts reflects the various underlying geographical, historical, social, political and – with respect to the scientific discourse – disciplinary considerations. These designations are not insignificant as they "say something about the direction from which one approaches the subject and the un-

derlying assumptions" (Ellen and Harris 2000:2). Opting for one notion thus also implies avoiding some connotations of other terms, as briefly touched upon in chapter 2.1.1. However, regardless of all these differences in emphasis, the various designations are usually said to share a certain common semantic load (Sillitoe 1998a:188).[82]

In view of this and the research's overall aim, I opt for taking as broad an approach as possible to the topic regarding the terminological delimitation and granularity[83]. Starting from the realization that due to the high context-dependency of alternative ways of knowing there is no single, agreed upon definition, I position this exact **context-dependency at the center** of my attempts to come to terms with other ways of knowing. I opt therefore for a spatially inspired approach, on the basis that for all its drawbacks, a spatial perspective connotes one important dimension, situatedness in local culture and environment. Moreover, taking a spatial perspective allows extending the scope of local knowledge to geographical areas that commonly are rather rarely associated with local knowledge such as industrialized countries or urban areas. In that respect I follow Cocks (2006) who argued that local knowledge must not be perceived as limited to indigenous communities living in remote, often tropical regions of developing countries. Consequently, I look at local knowledge as a phenomenon that occurs worldwide, in industrializing and rural regions as well as in industrialized and urban centers across all climate zones.

Against this backdrop and following Breitlied, I understand these alternative ways of knowing as delimited geographically and culturally such that "the emphasis is on place, e.g. the homestead" (2009:141). As a result, they vary significantly from place to place and over time due to adaptations to local particularities. Such **knowledge is therefore intrinsically linked to its place in space and time** in that it informs the knowledge holders and their communities on how to respond to and interact with their ever-changing social and natural environment. In this vein, such knowledge "reflects many generations of experience and problem solving by humans around the world" (Antweiler 2004:xi), representing an irreplaceable resource for survival and subsistence to build upon and expand, according to the changes and necessities arising.

With respect to advancing the **academic debate** on local knowledge, opting for a spatial determination of the notion carries the additional advantage of being able to build

[82] In contrast to other scholars, I refrain from taking a systemic perspective and do not treat local knowledge as necessarily constituting a 'local knowledge *system*', given that while this can be the case, by far not all instances of local knowledge come in the form of comprehensive systems, an assessment also shared by e.g. Antweiler (2004).

[83] As such, I only marginally contribute to the longstanding debate in anthropology on how to most appropriately denote and delimit this knowledge type. For the purpose of this research, I consider it to be more productive and promising to opt for an inclusive approach that strives for integrating the various specific characteristics stressed in the various variants rather than for investing into an even greater particularization.

on the substantial body of literature on spatiality from different disciplines that has been gradually built up over the last decades. In this respect, focusing on the spatial dimension holds the promise to provide ample inspiration from a vivid and multifaceted interdisciplinary debate for advancing the topic of local knowledge accordingly.

Striving to **emphasize the spatial character** of the type of knowledge in question, I opt for this research for the term ‘local knowledge’. Aiming at as broad and inclusive a definition as possible, I coin local knowledge for this research as a collective term for a variety of concepts such as indigenous knowledge, traditional knowledge, traditional ecological knowledge, farmers’ knowledge, folk knowledge etc. Representing a ‘social product’ (Antweiler 2016), local knowledge according to my understanding comprises knowledge, beliefs, traditions, practices, institutions and worldviews developed by local or indigenous communities in developing as well as developed countries in response to constantly changing social and natural environments, in rural regions as much as in urban agglomerations. Consisting of knowledge in the strict sense of shared information along with less clear-cut ‘ways of knowing’, ‘ontology’, ‘framing reality’, ‘being acquainted with’ as well as ‘bodily knowledge’, local knowledge is not only cognitive in nature, but encompasses also corporeal and emotive aspects (Antweiler 2004; Nygren 1999). As such, local knowledge entails situated practices, but cannot and should not be reduced to solely practical, mundane and everyday knowledge, as it is often encountered in the literature (cf. e.g. Hobart (1993)). On the contrary, from the perspective of knowledge holders, a substantial part of the knowledge concerns ethical and spiritual contents, reaffirming their place in the web of life as much as what is often called the ‘sacredness of all existence’.

To sum up: Among the many variants denoting the knowledge type central to this research, I opt for the term 'local knowledge' as it best suits the need for a broad and inclusive notion and reflects the context-dependency I consider crucial for this knowledge type in that it is intrinsically linked to its place in space and time. In addition, choosing a spatially-oriented term promises the most potential in terms of advancing the academic debate across disciplinary boundaries as it can take advantage of the insights from a rich interdisciplinary debate spanning the last decades.

3.1.2 Conceptual understanding

Chapter 2.1 has shown that ‘local knowledge’ is an utterly diverse, multifaceted and globally relevant topic that evades any straightforward characterization. On all continents and across all cultures local knowledge exists in a multitude of forms, varying

over time as well as from place to place. This explains the multitude of perspectives on what local knowledge in fact constitutes and on how it can be best characterized. When it comes to the latter, in many instances, a specific 'local way of knowing' is chosen, analyzed and generalized based on the characteristics identified, with the specific case serving as model case. Correspondingly, overarching definitions striving to cover local knowledge in general or to at least address a collection of differing local ways of knowing are much more rare, if not largely absent, resulting in a lack of systematic theory-based approaches to the topic, as shown in the analysis in chapter 2.1. Thus, in view of the research question at hand – understanding local knowledge generically –, these existing, mostly specific and context-dependent approaches are not applicable as more often than not, their contributions result from generalizing insights drawn from a specific local knowledge form and therefore remain bound to and potentially limited by it.

In view of this, I refrain at this point from discussing the notion any further and limit myself to providing a general working definition and a number of basic guiding principles as to how this study conceptualizes local knowledge in its broadest terms.

In terms of a **working definition** for local knowledge, I reiterate the one presented in chapter 1.1: For this research, I characterize local knowledge as broadly and inclusively as possible as the main goal does not consist in concentrating on a specific instance of localized knowledge, but to provide a framework that guides the understanding of – theoretically – any given local knowledge form. In this vein, the notion 'local knowledge' is in this research understood as...

> *….a collective or 'umbrella' term for a variety of concepts found in all societies such as indigenous knowledge, traditional knowledge, traditional ecological knowledge, farmers' knowledge, folk knowledge etc. As such, local knowledge comprises knowledge, beliefs, traditions, practices, institutions and worldviews developed by local or indigenous communities in rural and urban areas in industrializing and industrialized countries in response to permanently changing social and natural environments.*

With respect to **guiding principles** for the elaboration of the framework, there are five interrelated aspects that are generic enough that it is safe to assume that they might be valid for the huge majority – if not all – instances of local knowledge. They include the following characteristics:

First, being culturally situated and consisting of both knowledge in the strict sense of shared information as much as "'ways of knowing', 'ontology', 'framing reality', 'being acquainted with' and 'bodily knowledge'" (Antweiler 2012:56), local knowledge **tran-**

scends the exclusively cognitive and encompasses emotive and corporeal aspects. Rather than just a system of knowledge, it is regarded as a "way of life, […] embodying this knowledge"[84] (Mazzocchi 2008:44).

Second, as a 'way of life', local knowledge is often described as representing **embodied or enskilled knowledge** (Sillitoe 2010), meaning knowledge "which individuals learn to act upon without necessarily seeking to express in words" (Sillitoe (2010:21), with reference to Ayer (1971:13)). As such, local knowledge is said to be part of the person, confronting interested external parties used to trading in (mostly written) words with the challenge of enskilled local knowledge not being reducible to words, or, as Sillitoe, specifies, "certainly not that non-practitioners can appreciate"[85] (2010:22). Although the close link between knowledge and language seems rather intuitive at first sight[86], perception and knowledge without language does exist which, in turn, leads to me following Crick who claims that knowledge is not coded in linguistic systems exclusively ((1982), referred to in Sillitoe (2010)). According to him, explaining practical behavior in language can be akin to "let[ting] the left brain explicate right brain formulations" (1982:31).

Consequently and *third*, local knowledge **may be stored in a number of places**, including people's heads and (to a lesser extent) written documents as in the Western World, but predominantly in routine practices, bodily practices and memories, rituals and material objects (Antweiler 2004). In fact, in contrast to the Western perception where 'knowledge' and 'language' are closely intertwined, **local knowledge does not need to be coded in linguistic systems**. Rather, it is stored in practices and is best learned and acquired by doing it instead of talking about it (Bloch 1991; Borofsky 1994) so that you come to know it "[…] as part of your person" (Sillitoe 2010:21). This also prevents one from altering it by inadequate mental approaches, as Sillitoe (2010), building on Crick, argues: "Since we can perceive and know without language, this semiotic transmutation whereby language is the privileged system for explanation will certainly distort the phenomena being explained" (1982:300).[87]

---

84 As Mazzocchi underlines, the commonly encountered eurocentric (and thus etic) definition of local knowledge conceptualizes it as "a noun, a thing, knowledge; but to indigenous people, it is much more than knowledge. Indigenous knowledge cannot be separated from the people who hold and practice it, nor can it be separated from the land/environment/Creation" ((2008:44), citing Anishinaabe scholar McGregor (2004:389–90)).

85 As a matter of fact, capturing and understanding such enskilled knowledge for program development pertains to the challenging tasks in development cooperation.

86 This is at least expected to be the case for Western minds.

87 This characteristic represents a substantial challenge for research and development intervention projects where, more often than not, conventionally trained people used to trading in (written) words struggle to gain a coherent idea of a given knowledge form as it cannot be reduced to words helpful to people that lack the practical experience in the context in question.

Forth, as a 'way of life', local knowledge is **highly relational and interdependent** in character and often seen as a gift from some form of spiritual entity, being or force, sent to provide instructions to be transmitted over generations as to how to appropriately conduct oneself and relate to the environment and all beings in it (Maragia 2006). As such, local knowledge "is the way one relates" (McGregor (2004:394), cited in Mazzocchi (2008:44)), to creation as well as to the creator or spiritual entities seen in or behind it; accordingly it also includes a range of responsibilities towards the creation – responsibilities that are meant to ensure the continuation of creation.[88] In line with this, the world of humans and nature are not seen as separate domains at all, but as interdependent and interconnected through a form of "symbiotic relationship" (2008:46) in which indigenous populations contribute to preserving the natural milieu while at the same time receiving their subsistence from it. This characteristic of local knowledge leads some scholars to stress that it can rather be lived than studied (Maragia 2006; McGregor 2004).

Fifth and lastly, I consider local knowledge to be a locally situated, experience-based and action-oriented form of knowledge found in all societies. Sharing Antweiler's (2004, 2008) **universalistic claim**, I understand local knowledge as a social product arising from a universal human capacity to be encountered in all cultures. In other words, I posit axiomatically that there is a universal form of practical, empirically-based and action-oriented knowledge that can be encountered in all cultures and on all continents. Acknowledging the incompatibility of such a universalistic approach with postmodern, strong constructivist and cultural-relativist reflections and insights, I opt for focusing on similarities in the worldviews among cultures – a position that is already inherent in the research's topic and aim: Elaborating a generic, overarching framework for understanding local knowledge across cultures is only sensible if generic, universal structures are presumed. Interestingly, the conceptions of how the world is structured and how it works on a universal level (Antweiler 2008:84) are rather under-researched – partially due to a significant number of scholars concentrating on culturally specific cognition and representations. In contrast to this and opting for a universalistic position, this research deems alternative ways of knowing as "resulting form a universal human capa-

[88] McGregor, an indigenous scholar from North America, translates the "continuation of creation" (2004:389) into what contemporary scholars might refer to as 'sustainable development'. However, while the academic notion of sustainability does without the idea of a creator or 'sustainer' behind it and thus lacks an inherent transcendent or spiritual component, the worldview underlying the majority of local knowledge forms indeed posits some form of higher entity – a fact that is hard to impossible to adequately integrate into a scientific approach. Academic research therefore often refrains from discussing this aspect (with some notable exceptions such as e.g. Posey (2002; 1999)), leaving out what many holders of local knowledge consider representing a vital and paramount cornerstone of their worldview.

bility, but having specific culturally and environmentally situated content in every instance" (Antweiler 2004:2).

To sum up, local knowledge is understood in this research as a locally situated way of knowing that can be found all over the globe as it arises from a universal human capacity. It is highly relational in nature, underlining the interdependency of humans and nature and it includes enskilled and embodied knowledge, transcending the purely cognitive. It therefore does not need to be necessarily coded in linguistic systems and, consequently, is often stored in a multitude of different places, mainly in bodily practices, rituals and material objects, but to a lesser extent also in people's heads and in written documents.

3.2 Conceptualizing 'sustainable development' for this research

Having outlined how local knowledge is specifically conceptualized, chapter 3.2 invests into describing the notion of sustainable development formative for this research, building on the respective literature detailed in chapter 2.2.[89] First, I address some terminological issues (chapter 3.2.1) before detailing the underlying assumptions and characteristics of this research's notion of sustainable development (chapter 3.2.2). The understanding developed in the chapter 3.2 eventually serves as a set of characteristics determining the notion of sustainable development for this research. As outlined in some detail in chapter 1.3.2 on the methodology applied in this research, 'sustainable development' does not form part of the framework nor is the term examined in its own right. Rather, it serves as the normative canvas according to and against which the framework for understanding local knowledge is elaborated in the following chapters 4-7. In other words: Once elaborated, the canvas moves to the background for much of the reminder of this research project. However, having such a normative reference system in place allows verifying in a concluding assessment whether the framework is compatible with the idea of sustainable development established at the beginning and whether – or to what extent – the basic normative tenets of the latter are taken up and reflected. Such a review takes place in chapter 8.2.3 where I analyze and discuss whether the characteristics detailed below are reflected in the heuristic developed.

[89] In contrast to the central notion of 'local knowledge', the term 'sustainable development' is not examined per se, but has the function of the normative reference system underlying this project (cf. chapter 1.3.2). After this chapter, it therefore takes a backseat until chapter 8 where the framework developed in chapters 4–7 is scrutinized against the backdrop of the sustainability principles determined here.

3.2.1 Terminological questions

Throughout the scholarly literature, the notions ‘sustainable development’, ‘sustainable’ and ‘sustainability’ are used in a number of ways and with differing meanings (cf. e.g. Waas et al. (2011)) as explicable by the multitude of perspectives on the topic (cf. chapter 2.2.2). Often, researchers – or at times even entire academic sub-disciplines – favor one of the terms and go for either ‘sustainable development’ or ‘sustainability’. To make things even more complex, in the case of both terms featuring in a given research project, a majority of researchers uses them interchangeably with only a minority drawing some distinction. In view of this, the following paragraphs aim at shedding some light on these terminological issues, including on how this research intends to deal with them.

The notion ‘sustainable development’ represents the original term as coined in its modern understanding in the 1987 Brundtland-report (cf. chapter 2.2.1 for the historical development of the notion). There, ‘sustainable’ is combined with the term ‘development’ to a new notion, whereby ‘sustainable’ is a qualification criteria for development and denotes the way in which said development is expected to unfold. Importantly, ‘sustainable development’ has to be necessarily understood as a development, i.e. as a process, and not as some sort of static state. The qualifying adjective ‘sustainable’ serves two purposes, namely *first,* to assess the current state of affairs with respect to the development envisaged and *second,* to provide a criterion for public decision-making processes. In other words: ‘sustainable’ qualifies development and juxtapositions it to classic economic societal development, which most often amounts to a growth strategy based on substituting natural capital for welfare.

In addition to the usage in the composite term of ‘sustainable development’, ‘sustainable’ can also be applied separately, as examples such as ‘sustainable business’, ‘sustainable forestry’ or ‘sustainable agriculture’ show. In these cases, the qualifying adjective generally recurs to the underlying concept of ‘sustainable development’ and implies that the role model’s constitutive principles are integrated and covered with respect to the specific topic at hand, e.g. business, forestry or agriculture. (Waas et al. 2011)

Lastly, ‘sustainability’ is often used as a synonym of ‘sustainable development’.[90] However, for certain academics, ‘sustainable development’ is foremost about economic growth and societal development whereas ‘sustainability’ is said to prioritize the environment over the socio-economic dimensions (cf. e.g. Huge et al. (2011)). As Waas et al. (2011) and Robinson (2004) underline, the actual differences are not substantial in

[90] I agree with Waas et al. (2011) that etymologically, equating the two terms is not all too convincing as this would imply that the term ‘development’ makes no difference in meaning and could easily be dropped entirely.

nature. The proponents of both terms agree on the importance of integrating environmental aspects with the only difference consisting in those favoring 'sustainability' taking a generally critical stance towards economic growth in view of the planet's environmental limits and those preferring 'sustainable development' striving to improve economic growth as remedy while trying to reconcile it with environmental considerations. Other scholars argue that 'sustainable development' underlines the 'process' to reach said goal whereas 'sustainability' emphasizes the actual 'goal' to be reached (Reid 2013).

Regardless of the specifics discussed, there is no consensus among scholars regarding how to meaningfully distinguish between the two expressions, let alone regarding whether such a division line can be drawn at all. In fact, questions have been raised whether such a distinction is useful and helpful at all – not only in terms of unnecessarily burdening the debate on sustainable development with conceptual subtleties, but also with respect to potential political fallout by "driv[ing] a wedge into the strong international consensus for sustainable development" (Waas et al. 2011:1639).

In view of both this situation and the project's specific research interest, this distinction plays no significant role, which is why the terms are used interchangeably with no difference in meaning, but by personal habit with a certain inclination towards 'sustainable development'.

3.2.2 Conceptual understanding

As primary foundation, I base my research on an interpretation of sustainable development that combines traditional conceptualizations – namely the **well-known Brundtland definition**[91] – with contemporary perspectives and insights from the academic discourse on sustainable development. This amalgamation of initial and more recent perspectives constitutes this research's notion of sustainable development and features the following three approaches:

First, I draw upon the Brundtland-based **concept of the Helmholtz Society of German Research Centers** that has been elaborated by Kopfmüller and colleagues (2001). Being integrative as outstanding characteristic, the dimensions of sustainable development are no longer separately listed and balanced against each other, but looked at in such a way that orients itself with respect to super-ordinate, aggregated sustainability goals (for a detailed account cf. e.g. Schultz et al. (2008)). Next to its integrative approach, I adopt the three core elements that are regarded as constitutive.

[91] It defines sustainable development as a "development that meets the needs of the present without compromising the ability of future generations to meet their own needs" (WCED 1987:43).

These include a) *justice*, namely inter- and intra-generational justice, translating into justice for present and future generations, b) the *global perspective*, broadening the scope of concern massively and, on a methodological level, requiring solutions that are scalable and c) the *anthropocentric view*, setting people at the center of endeavors and attention and delineating sustainable development from related concepts such as e.g. environmental protection that focuses on the well-being of the natural world.[92]

Second, I adopt the six properties characterizing sustainable development and the related societal discourse crystallized by Burger and Christen (2011). According to these so-called **six adequacy statements**, the following characteristics have to be met for something to be considered reflecting the idea of sustainable development. Namely, it has 1) to be future-oriented in that 'sustainable' refers to development that is bound to take place in the future; 2) to have normative power and potential to steer action; 3) to encompasses intra- and inter-generational justice which in turn is founded on 4) displaying a certain degree of universality. In addition, sustainable development must cover the aspect of 5) limited, scare natural conditions and, eventually, 6) reflect the institutional and structural complexity in terms of diversity of agents and components (Burger and Christen 2011).

Third and in view of the overarching topic of this research – understanding a knowledge type that, by and large, is most prominent and widespread in regions with lower income and development indices – a distinct **emphasis is set on development, action and options of action** when it comes to determining the characteristics of the specific sustainable development perspective in place. This is apparent in two ways: *On the one hand*, linking back to the adequacy statements described above – more specifically to number one (focus on development, future-orientation) and two (normative power to steer action) – this research's concept of sustainable development is additionally committed to and informed by Sen's capability approach (for a detailed account cf. Burger and Christen (2011)) and focuses on capabilities for fostering individual well-being and human development (Nussbaum 2011; Sen 2009).[93] *On the other hand*, more generally, but still intrinsically related to Sen's perspective, this research's perspective on sustainable development is committed to human freedom, freedom of choice and responsibility to shape one's own environment and therefore has a definite

[92] In view of the significance of natural resources for the context of sustainable development, this approach is alternatively labeled as 'eco-anthropocentric' (von Hauff 2012).

[93] Sen, an Indian economist, studied the relationship between economics and social justice, namely with respect to the phenomena of starvation and famine following the implementation of faulty economic policies. Advocating his idea of development as capability expansion (cf. e.g. Sen (2003)), he criticized the rights commonly provided by governments such as right to vote, freedom of speech etc. as rather empty benefits. He argues that unless the citizens are also provided with so-called 'functionings' such as transportation to voting locations, access to food, education etc. they are unable to make use of these formally bestowed rights.

focus on self-determination and endogenous development choices. This characteristic represents a safeguard against two pitfalls described among others by Sillitoe (2010), namely *first* 'one-size-fits-all-approaches' to development and, *second*, in the case of tailored approaches, an almost exclusive focus on structural constraints and donor's evaluation methodologies instead of an attention to the local people's evaluations of and responses to development options.[94] Against this backdrop, this research's notion of sustainable development includes a focus on maintaining and preserving[95] this array of options and, thereby, the freedom of future generations to determine their own development path. Such an endogenously driven development may also encompass economic considerations and choices by local communities that might challenge or run counter to specific outside interests by players such as e.g. Non-Governmental Organizations (NGOs) pursuing their own agenda of development or environmental protection and therefore clearly prioritizing socially and ecologically oriented initiatives.

In this research, the **three above described components** – a) the core elements of the Brundtland-based notion of the Helmholtz Society of German Research Centers, b) the six adequacy statements and c) a strong focus on endogenous development choices – are combined and serve as the previously described normative canvas (cf. chapter 1.3.2). In its function, it requires that any attempt at structurally understanding local knowledge and designing a related approach necessarily needs to take into account this set of aspects. *First*, it entails reflecting sustainable development's focus on development and its normative power to steer action (two of the adequacy conditions) such that the actual process of understanding is empowered – through a transparent and easily comprehensible and structured approach as well as through a comprehensive perspective that gives room to perspectives surpassing common Western ideas. *Second*, it includes fairness towards co-humans (covering the aspects of intra-generational justice, universality of approach/global view and anthropocentric view) as well as a consideration of the fragility, scarcity and finiteness of natural resources upon all local knowledge builds in order to ensure its existence and use for coming generations (covering the aspects of limited, scare natural resources, inter-generational justice and future-orientation). *Finally*, any consideration of understanding local knowledge against the backdrop of the sustainability notion also needs to take into account that knowledge is no individual undertaking. It therefore needs to factor in the range and diversity of in-

[94] The situation can be further complicated, Sillitoe (2010) stresses, in that local people may very well differ when it comes to assessing the validity of proposals or the effectiveness of practices suggested. He therefore considers the task of "bring[ing] such alternative ways of constituting, authorizing and validating knowledge to the attention of development agencies" (2010:25) as one of the major challenges of contemporary development cooperation.

[95] If 'maintaining' and 'preserving' are objectives set too high, the next best is to try to restrict the local development options in the least possible way, adhering to the fundamental principle of sustainable development of 'doing no harm' (cf. for this e.g. Gordon (2006)).

dividual as well as institutional actors and components (local and non-local) constituting and shaping this knowledge (covering the aspect of institutional actors and components).

Concluding, in this research I perceive of ‘sustainable development’ as of a societal role model directed at safeguarding the well-being of present and future generation based on endogenous development choices and contingent on both fragile social-environmental systems and finite environmental and social resources. Accordingly, chapter 8.2.3 discusses the framework construed in chapter 4–7 against the backdrop of this conception of sustainable development and examines whether the components of this research’s notion of sustainable development have been considered adequately.

3.3 Sketching ‘understanding’ for this research

As outlined in chapter 1.4, sketching ‘understanding’ follows an independent approach, differing from those taken for ‘knowledge’ (cf. chapter 3.1) and ‘locality’ (cf. chapter 3.2). There, conceptualizations were based on extensive literature analyses while for ‘reflexive understanding’ I have to restrict myself to sketching the concept along what I expect to represent generally acknowledged lines characterizing the notion. Before doing so and suggesting a generic and reflexive notion of and approach to ‘understanding’ for this project (chapter 3.3.2), I describe in general terms what ‘reflexivity’ and ‘reflexive understanding’ denote (chapter 3.3.1)[96].

3.3.1 Brief theoretical excursus on reflexivity

Intellectually, working with local knowledge requires researchers or development practitioners to make meaning based on observations in unfamiliar contexts while simultaneously being part of the world they study. In other words, they are typically involved in what they are simultaneously meant to study as impartially as feasible – an entanglement that is considered to be bound to influence the very outcome of the research (Attia and Edge 2017). The involvement itself is manifold and can extend to ones’ value system or basic frame of reference, to one’s cultural biases, experiences and to one’s position in relationships of power – in society in general as much as within the research-researcher relationship (cf. e.g. Gabriel (2018)).

However structured, such an involvement is thought to bear an influence on how reality is perceived, constructed and eventually reproduced – a phenomenon that came to be seen as problematic in recent years, especially in regard to gaining an understanding

[96] For an extensive overview on the debate cf. e.g. Alvesson and Sköldberg (2017).

that can rightfully live up to the requirements of scientific research or, in the case of development practitioners, to the mission statements formulated by development organizations. Consequently, it was understood that henceforth, some form of critical consideration of one's own knowledge generation process – a form of reflexive stepping-back – needs to be integrated as essential component into interpretative studies (Malaurent and Avison 2017).

At this point, 'reflexivity' enters the field. In most simple terms, reflexivity can be thought of the "process of becoming self-aware" (Begoray and Banister 2010:789), the attempt to consider one's own thoughts and actions in the light of the contexts at hand – on the premise that "knowledge cannot be separated from the knower" (Steedman 1991:53, cited in Anderson 2011). Reflexivity thus denotes the ongoing critical reflection of own biases and preconceptions and of their influence on all stages of a research or development process, starting with critically reflecting upon the origins of seemingly universal or neutral explanatory frameworks commonly used in academia and development cooperation. Reflexivity can therefore be seen as a 'means' for researchers and practitioners supporting them in being sensitive to cultural, class, race and gender differences and to power differentials of all colors – as such, it can be seen as an investment into quality and validity of the findings. Furthermore, 'reflexivity' (if made explicit) has also the informative value of informing whoever comes into contact with the results about preconceptions and biases underlying them, thus helping to take the researcher's/practitioner's particular situatedness into account when studying the findings presented. (Anderson 2008; Begoray and Banister 2010; Gabriel 2018)

In order to operationalize 'reflexivity', different approaches have been proposed. In terms of concrete techniques, adhering to a reflexive understanding of science entails incorporating techniques for documenting the researcher's or development practitioner's reflexive process. One such example is keeping a reflexive journal that documents one's prior understandings about the task at hand, project-related decision-making processes and one's own interactions with the local population, "from initial contact to when they leave the field" (Begoray and Banister 2010:789). This technique serves the purpose of making explicit not only the knowledge discovered, but also the ways and means that led to this discovery. In addition, with the aim of establishing more equal partnerships across cultures and epistemologies, some scholars turn to using multiple authorship or different models of participatory or action research, as e.g. described by Jacobs (2015) for the academic discipline of geography[97].

[97] She speaks in this context of "readjust[ing] colonial or neocolonial structures of authorization with respect to who speaks and with what authority" (2015:644).

In addition to concrete techniques, theoretical approaches invest in conceptualizing reflexivity in various ways, proposing different sub-classifications for operationalizing it. Examples include the tripartite division into a) self-reflexivity, b) domain reflexivity and c) collaborative reflexivity proposed by Malaurent and Avison (2017), Anderson's (2008) classification into a) introspective reflexivity, b) 'methodological reflexivity' and c) epistemological reflexivity or Breuer and Roth's (2003) approach that characterizes reflexivity along four lines, namely a) perspectivity/positionality, b) horizonality of knowledge and perception, c) structuring of knowledge through instruments of knowledge production and d) interactivity and the interventionist nature of research. For all these sub-classifications' specifications, these operationalizations of reflexivity also share some common features. These features underline that one can only rightfully talk of reflexivity once researchers or development practitioners[98] are guided in their analysis of how to spot the omnipresent relatedness and potential entanglement between their research or intervention endeavors and themselves. This concerns, as Begoray and Banister (2010) argue, in the first place their specific way of being related – to their specific research or development community, to the methods prevalent for data and information gathering, to the local population providing insights and information and, eventually, to the information gathered and the methods applied for interpreting and representing this information.

3.3.2 Conceptual understanding

As argued earlier, reflexivity is here best tackled when designing is such that it allows for specifically scrutinizing the particular research interest at hand against the backdrop of the manifold connections and feedback-loops between the researcher and the researched topic.

In view of this, I suggest integrating a reflexive layer into the framework for understanding local knowledge by opting for a generic, tripartite approach to 'understanding' that aims at characterizing the *process of making sense* along three general lines. This condensation represents an attempt at depicting the phenomenon if not in detail, but along its main characteristics. It strives to shed some light on a variety of general sources

[98] Theoretical underpinnings are an intrinsic part of academic publications. The same is true, in general, for the field of development research, if also to a lesser extent given their practical and applied orientation. Publications from this field tend to be founded on an initial situational analysis and generally rest on a set of specific assumptions and principles as to how to facilitate change processes. In the last years, the approach of 'evidence-based development' has gained significant momentum in development economics and policy (cf. e.g. Jones et al. (2012); Marshall (2018), for a critical voice cf. e.g. Abdelghafour (2017)), culminating in Esther Duflo, Michael Kremer and Abhijit Banerjee being awarded the Nobel Prize in Economic Sciences in 2019 "for their experimental approach to alleviating global poverty" (Royal Swedish Academy of Sciences 2019:1).

that influence and shape the actual process of gaining an understanding – sources that more often than not lack critical scrutinizing.

The three general lines or sub-features that I propose introducing for dividing the overarching topic of understanding into three meaningful topical foci are the following: *First*, I postulate to take into account and pay close attention to the fundamental **uncertainty inherently linked to gaining an understanding** itself. This focus goes back to the insight that generating an understanding of whatever topic in an unfamiliar epistemological context needs to be viewed as a potentially risky, uncertain and open-ended undertaking.[99] This results on a very fundamental level from the way how understanding constitutes, namely based on individual perception and interpretation. For obvious reasons, such an individualized approach does not allow postulating access to an all-encompassing objectivity or truth[100]. Thus, understanding in the sense of this project has to be considered contingent one's ability to make sense of what he/she encounters while building on already existing categories and presumptions and integrating new ones to a meaningful whole. *Second*, I suggest that one takes notice of the broader field of **structural and organizational constraints** that steer and influence the course and outcome of research by pre-determining the scope and mode of action for the actors in the field. Examples for this type encompass e.g power differentials between outsiders and locals or differing epistemologies for 'structural constraints'. For 'organizational constraints', examples would include e.g. topical donor preferences for both science and development cooperation or differing time-frames between locals and outsiders for carrying out research or implement development interventions. *Third*, I advocate for incorporating a self-reflexive layer that draws the attention to **personal biases** influencing understanding; this layer is meant to guide the researcher or practitioner in the analysis of his/her own inner configuration that results from his/her personal background, (professional) training and experience and is expressed in his/her preconditions, personal assumptions and preferences.

Concluding, I comprehend 'reflexive understanding' in this project as a meta-level or layer of self-reference complementing the preceding topical notions of 'local knowledge' and 'sustainable development'. More precisely, it is a tripartite layer meant to guide the researcher or development practitioner to critically reflect on his/her insights and findings and check for potential influences by one's own inner configuration. In detail, this entails watching out for the following three aspects: a) the fundamental uncertainty of

[99] Importantly, this fundamental uncertainty is equally present in contexts that are epistemologically familiar. In this project, however, I focus on 'understanding *local knowledge*' and therefore specifically discuss the ways in which cross-epistemological understanding can constitute.

[100] There are exceptions as in the case of the understanding of a priori knowledge (cf. chapter 5.2.3.1).

gaining an adequate understanding itself, b) structural and organizational constraints influencing the results and insights obtained and c) personal biases resulting from one's personal background, experience and training that run the risk of distorting the process of understanding.

4 Methodology for the framework development

Analyzing the insights from the literature reviews in the preceding chapters 2 and 3 shows that existing research on local knowledge in a sustainability context can be said to be hardly able to do justice to the complex topic. In fact, overarching conceptual and theoretical studies are as rare as is research displaying distinct traits of reflexivity. Accordingly, generic, encompassing framework approaches to understanding local knowledge allowing the researcher to critically assess his/her insights do not seem to exist or be in use so far (cf. chapter 2.1.7 and 2.4).

This general assessment is shared by a number of scholars who strive to conceptualize local knowledge alternatively. Briggs (2013), e.g., argues that investigating the topic of local knowledge descriptively by means of specific, applied research questions within distinct local knowledge settings was vital in demonstrating the importance of local knowledge repertoires and the manifold ways how local communities develop and apply such knowledge in their everyday lives. However, for the topic to have a "wider impact on development practice and poverty reduction" (Briggs 2013:240), the research focus needs to shift from content to processes, practices, contexts and epistemology. A similar argument is brought forward by Sillitoe who claims that next to political reasons the "cultural relativity of knowledge" (2010:12) was responsible for the limited up-take of the so-called 'indigenous knowledge initiative' for development[101]. He then concludes that "alternative ways of constituting, authorizing, and validating knowledge" (2010:25) need to be integrated into development discourse and practice. This view is also shared by Antweiler who states the lack of a "systematic but localized approach for the proper and humane use of local knowledge in development" (2004:1) and underlines that the practical application of local knowledge is less of a technological problem than theoretical and political in nature.

Against this backdrop, this research sets out to explore these so far rather unchartered waters and to contribute to advancing a more generic and encompassing perspective on 'local knowledge' that allows for comparative studies given the shared framework structure as well as for critically reflecting upon one's insights. With the political dimension mentioned above by Antweiler reaching beyond what is attainable in the frame of this research, I concentrate on contributing to the theoretical discussion by suggesting a social-science based, generic, conceptual-analytical approach to 'understanding local knowledge' that allows for gaining a categorial understanding of potentially any local

[101] The 'indigenous knowledge initiative' was led by the World Bank with the aim to "stimulate recognition, utilization and exchange of indigenous knowledge in the development process" (Woytek and Gorjestani 1998:15). It resulted from the Global Knowledge Conference in 1997 in Toronto, Canada where the immediate need to take stock, learn, preserve and mediate exchange between different indigenous knowledge forms was recognized.

knowledge form while also including a critical meta-level reflection on the contingency of the insights on external and internal biases and constraints.

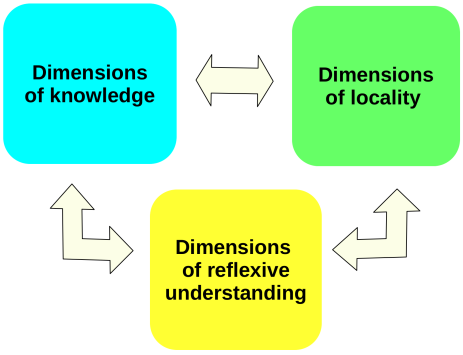

Illustration 6: Three types of dimensions

With this in mind, I concentrate in chapter 4 on describing this conceptual-analytical approach in some detail before applying it in the subsequent chapters 5–7. In more detail, this entails describing the relevant preliminary assumptions and motivations informing how I approach the topic in chapter 4.1 before explicating the methodology involved in chapter 4.2. In chapter 4.3, I introduce the preliminary systematizations of the terms involved, i.e. of 'knowledge', 'understanding' and 'locality'. Chapter 4.4 outlines the basic dimensions constituting the framework, i.e. the dimensions of knowledge (chapter 4.4.1), of locality (chapter 4.4.2) and of reflexive understanding (chapter 4.4.3), as displayed in illustration 6.

These dimensions represent the basic reference categories that are fundamental at a later stage in chapter 7 when I elaborate the actual overarching concepts constituting the framework for understanding local knowledge – i.e. the concept of analyzing knowledge (chapter 7.2), the concept of analyzing locality (chapter 7.3) and the concept of reflexive understanding (chapter 7.4), as shown in illustration 7.

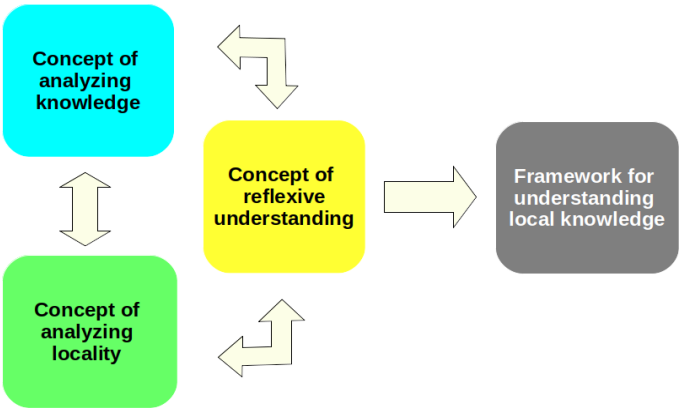

Illustration 7: Three types of concepts constituting the framework

4.1 Motivation for the framework approach

The literature review on local knowledge in chapter 2.1 led to the realization that in order to develop and propose an alternative perspective on conceptualizing local knowledge, the topic needs to be approached from an angle that qualitatively differs from previously chosen ones. I would need to abstain from simply asserting the obvious[102] and from suggesting yet another descriptive-enumerative account of what I consider lo-

[102] The (too) simple (an) assertion being that local knowledge is e.g. "complex, variable, wise and (often) sustainable" (Antweiler 2004:1).

cal knowledge to represent, ideally based on extended field studies of my own in local communities.

Instead of such a case-study-oriented and localized approach that has undeniably its own merits as the rich literature on case studies from all over the world demonstrates (cf. literature review in chap. 2.1), I opt for focusing on understanding the phenomenon on a more structural and generic level that would, as additional feature, allow for comparative research. I do this by striving to identify basic and universal dimensions that are expected to be valid as much as relevant for characterizing any local knowledge form in terms of its basic configuration; in a second step these dimensions are translated into concepts and arranged in a framework. Identifying an appropriate and theoretically well-founded set of characteristics for conceptualizing the multifaceted and highly heterogeneous phenomenon of local knowledge therefore represents a crucial step in my approach. Importantly, however, in order to distinguish the approach from existing descriptive-enumerative assertions that tend to exude a great deal of confidence and certitude as to what local knowledge in fact constitutes, I consider it paramount to integrate an additional critical layer. The function of this layer consists in allowing to and guiding researchers and practitioners in taking one step back and critically reflecting on the inherent uncertainty related to gaining an understanding across epistemologies as well as on the influence of external and internal biases on the actual processes of perceiving, interpreting and, thus, understanding.

Such an approach focused on identifying fundamental dimensions is motivated in three respects: *First*, it builds on the literature on the development of methodological (mostly participatory) instruments for approaching complex issues in real-world scenarios.[103] There, it is proposed to invest as starting point in crystallizing shared characteristics and features, based on the argument that shared mental models are critical for mutual comprehension and cooperation across cultures. This characteristic – i.e. shared basic categories – is also paramount in striving to design the approach such that it allows for comparative research across academic disciplines, preparing the ground for more inclusive consideration of the phenomenon of local knowledge.

Second, and importantly, striving to identify basic dimensions reflects an influential underlying idea, i.e. that there *are* in fact fundamental categories that apply regardless of all cultural relativism. With respect to local knowledge, this idea is in turn based on the

[103] This refers in the first place to approaches and tool boxes designed for investigating local livelihoods in the context of initiatives fostering e.g. development or environmental protection. Such tools are meant to provide information on how to incorporate knowledge, experience and choices of local communities in the planning and management of development initiatives (cf. e.g. Narayanasamy (2009)). They include well-known instruments such as e.g. Rapid Rural Appraisal (RRA) or Participatory Rural Appraisal (PRA) (cf. e.g. Chambers (1994); Campbell (2001), for a critique cf. e.g. Cornwall (2011); Richards (1995)).

insight crystallized from a multitude of worldwide studies and stating that worldviews, i.e. conceptions on the structure and functioning of the world, exhibit salient cross-cultural similarities. This position is also strongly advocated for by Antweiler who identifies their "shared claim to convey the order of a world" (2008:85, translated from German by the author). Importantly, such a position – commonly subsumed under the notion of an 'universalistic approach' and often diametrically opposed to a pronounced constructionist view of the world – is also an expression of a personal investment or positioning of mine in that it reflects my interest in cross-cultural parallels and similarities.[104] However, the universalism I am interested in is moderate in character in that it strives for taking account and, to the greatest extent possible, integrate culturally relativistic positions, resulting in what could be called a "self-reflexive instead of dogmatic universalism" (Antweiler 2008:72, translated from German by the author).

Third, integrating a critical layer for reflecting on how structural, organizational and personal constraints and biases shape the research process and outcome underlines the importance of being able to take a step back from one's research and thus mitigate the risk of arriving at absolute statements across epistemologies – an attitude that is particularly problematic in local knowledge contexts, epistemologically and ethically.

Having said that, I expect that it should be feasible to meaningfully embark on the quest to gaining an understanding of potentially any form of local knowledge by means of a set of basic dimensions specifying separately 'knowledge', 'locality' and 'understanding' and providing some guidance in critically reflecting on the inherent uncertainty of the understanding achieved. I postulate that this set of dimensions represents the general reference frame with the help of which any given local knowledge form can be studied in a generic and structured way that allows for a critical reflection.

4.2 Methodology

In order to identify the generic features that meaningfully describe and characterize the composite term of 'understanding local knowledge', I opt for conducting systematic and in-depth literature analyses for all three notions constituting the composite term, i.e. 'knowledge', 'locality' and 'understanding'. More precisely, the procedure consists of three, at times overlapping steps and is as follows:

In a *first* step, I invest in a tentative systematization of the notions constituting the composite notion of 'understanding local knowledge', i.e. 'knowledge', 'locality' and 'under-

[104] As such, this statement is to be understood as part of the 'critical reflection' upon one's own personal investments and theoretical and topical inclinations that steer and shape research process and outcome, as discussed earlier in chapter 3.3 on 'reflexive understanding'.

standing'. To this end, I start with developing preliminary characterizations that sketch significant traits of these notions (cf. chapter 4.3). These preliminary notions serve two purposes: *First*, they provide me with a rudimentary idea of all three notions given their inherent complexity and the related, often multi-disciplinary debates in academia and applied research. *Second*, they inform the remainder of the analysis in terms of the general direction the analysis should take. Thus, this first step consists in establishing a tentative systematization of the formative terms on the basis of limited knowledge. Necessarily non-exhaustive and preliminary, this systematization is best seen as a first cartography of the terrain or – in more scientific terms – as an 'inference to the best knowledge'.[105]

In a *second* step, next to validating and grounding this preliminary systematization in the literature, I focus on identifying and assembling what I consider representing meaningful additional traits characterizing each of the three notions. This identification is based on systematic and extended literature analyses across multiple academic disciplines covering social and natural sciences (cf. chapters 5 and 6). Thereby, the initial tentative systematizations or characteristics from chapter 4.3 serve as reference or starting point in the identification of salient, complimentary characteristics.

In this research, I denote such characteristics as *dimensions*. 'Dimensions' describe and frame the respective notions in the sense of 'minimal requirements' that are grounded in respective academic literature. In fact, for characteristics – be it the initial tentative ones from step 1 (cf. chapter 4.3) or the additionally identified ones during the literature analysis – to transform into dimensions, they need to founded in relevant academic literature. Grounding them this way ensures not only that the identification itself suffices scientific standards, but also contributes to promoting the uptake of insights across disciplinary boundaries.

For the literature reviews in chapters 5 and 6, I choose a multidisciplinary approach considering that I strive for integrating as many disciplinary perspectives as possible with the aim to open up the debate for cross-disciplinary exchange. Accordingly, for the notions of 'knowledge' and 'understanding', I consult salient literature from philosophy (chapter 5.2), sociology (chapter 5.3) and anthropology (chapter 5.4) to discuss different disciplinary approaches and their respective potential for adjusting and complementing the preliminary systematization from chapter 4.3. For the notion of 'locality', I consult a set of various academic disciplines and sub-disciplines given that the overarching topic of 'spatiality' has been quite en vogue across academia in the last period.

[105] Notwithstanding a certain resemblance, this step does not represent 'inductive reasoning' in the classical sense, given that I do not aim at generalizing, but only at sketching a basic understanding.

This includes salient literature from geography, history, ecology, area, cultural and development studies and the various ethnosciences (i.e. ethnobiology, ethnobotany, ethnozoology, ethnopedology etc.) (chapters 6.3.1 – 6.3.6).[106]

As for the actual depth of the literature reviews, the respective investments correlate with the role these notions play in this research (in more detail cf. chapters 1.3.2): The main term 'knowledge' is allocated the most extensive literature analysis; the modifying term 'locality' still receives considerable consideration, given that it specifies the main term 'knowledge' along spatial categories. The term 'understanding', however, plays an auxiliary role in this research, resulting in it not receiving a separate literature analysis (cf. chapter 1.3.2). Instead, given the significant overlaps in the semantic fields of 'understanding' and 'knowledge', the literature on 'knowledge' serves the double purpose of also informing the basic dimensions characterizing 'understanding'.[107]

In a *third* step, I aim at establishing a set of coherent dimensions describing the three terms. To do so, I analyze, revise and combine the identified characteristics – the preliminary ones from step 1 (cf. chapter 4.3) and the additionally identified ones during the literature analyses (step 2, cf. chapters 5 and 6) – into a meaningful final set of dimensions, thoroughly grounded in the academic literature. In reality, a substantial part of this process already takes place during the literature review itself. Notwithstanding the sequential order implied, the characteristics turn into dimensions and are additionally complemented and revised *while* analyzing the literature, i.e. in parallel to step 2. Thus, rather than consecutive actions, steps 2 and 3 occur in parallel and are closely intertwined. Accordingly, the act of 'complementing' covers a broad range of potential actions involving reviewing, validating, adding, rejecting and merging traits and characteristics into a minimal sets salient dimensions. This entails a permanently re-iterated process of analysis consisting of looping back and forth between the literature and the dimensions already identified with the latter also influencing each other and steering the following steps in designing the remaining ones etc. The main technique used thereby could be compared to 'theoretical sampling' applied in doing grounded theory[108]; there, 'theoretical sampling' implies that insights from initial data collection and analysis inform and guide subsequent data collection and analysis with the actual

[106] However, given the dissimilar histories and development paths of academic disciplines, the actual bodies of literature on 'knowledge' and 'locality' genuinely differ in structure, size and quantity of meta-studies: The debate on 'knowledge' – having originated eons ago in the context Greek philosophy – is by far more extensive, structured and self-reflexive than the academic debate on the rather recently re-discovered topic of 'locality'. Correspondingly, the latter seems to lack thoroughly defined categories and a generally approved mode of discussing spatial issues. As a result, structural and categorical decisions are much more at the discretion of the respective author.

[107] Given that the references informing the notion of 'understanding' were determined in the literature on 'knowledge', they are presented in a condensed form in the frame of chapter 5 on analyzing 'knowledge' (cf. chapter 5.3.5).

[108] However, in contrast to this literature-based research, research subscribing to grounded theory builds on extensive sets of empirical data.

grounded theory emerging over time through iterative and deeply intertwined cycles of data collection and analysis.

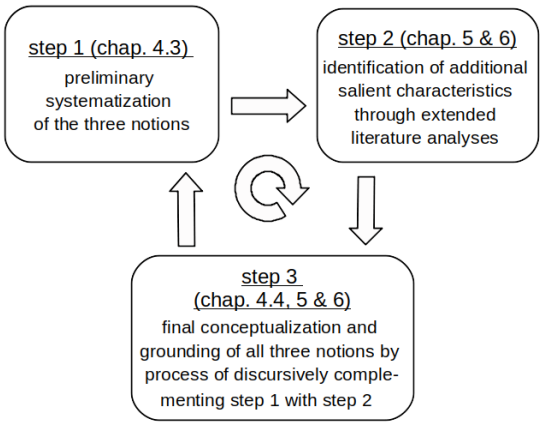

Illustration 8: Procedure for conceptualizing the key notions, steps 1-3

Illustration 8 shows this intertwined process. The main attention is attributed to the process of identifying and distilling concluding sets of meaningful dimensions that characterize the three terms saliently. The result of this process – namely the three sets of dimensions for 'knowledge', 'locality' and 'understanding' constituting the framework components – is outlined in chapter 4.4, notably before the actual literature reviews. I opt for listing these sets at this early point as I expect such a procedure to facilitate a step-by-step understanding of how the dimension sets came about. As such, one could say that chapter 4.4 anticipates the results of the literature analyses in chapters 5 and 6 in order to be able to structure the literature reviews such that the abstraction processes are maximally transparent to the reader.

In sum, it could be said that the sets of dimensions for 'knowledge', 'locality' and 'understanding' resulting from this process represent my personal investment in the sense of an 'inference to the best explanation' in a figurative sense, based on an initial heuristic and on subsequent in-depth literature analyses. In fact, these dimensions crystallized as the most plausible structuring elements and represent the framework components with which the actual framework for understanding is construed in chapter 7.

Lastly, to increase the framework's relevance as theoretical basis for potential future instruments for applied research, it seems appropriate to operationalize each of the dimensions of knowledge, locality and understanding introduced above by relating them to a corresponding *fundamental question*. These questions are expected to arise when one is confronted with an unfamiliar knowledge form and has to make sense of it in a way that portrays the specific local knowledge form in a structured, comprehensive and comprehensible manner.[109] They represent the basic structuring questions one would

[109] The idea of linking the dimensions of knowledge, locality and understanding with corresponding fundamental questions in order to operationalize them and render them more graspable arose a couple of years ago during my research stays in remote rural areas in developing countries. There, I found myself in need of practical orientation while at the same time realizing that any understanding that emerges is highly likely to be influenced and colored by a plethora of factors external to the local situation. In this situation, I came to understand that the only justifiable reaction to this indeterminacy was to remain in an inquiring attitude and never stop to ask questions, while at the same time continuing to critically reflect on one's own cognitive processes. It is against the backdrop of this insight that I decided to complement the dimensions with related questions – questions that are based in and cross-

need having answered to being able to orient oneself in an unknown territory while also remaining aware of potentially self-imported biases and constraints steering and shaping the research or development initiative.

4.3 Tentative systematization of the terms constituting 'understanding local knowledge'

As outlined in chapter 4.2, this research starts out from a preliminary systematization of the terms involved in the notion of 'understanding local knowledge', i.e. 'knowledge'. 'locality' and 'understanding'. These initial collections of traits that I expect to enter the notions' eventual characterizations in one way or another are the following:

For 'knowledge', the initial inventory consists of five topical ideas[110], namely:

1) aspect of knowing facts;
2) aspect of knowing processes and methods;
3) aspect of transmitting knowledge;
4) aspect of the knowledge's provenance;
5) aspect of the knowledge's legitimacy.

For 'locality', the initial inventory comprises three aspects that I consider characteristic to the extent that they need to be covered in the final set of dimensions, namely:

1) aspect of the physicality/materiality of the locality;
2) aspect of the influence of human actors on the locality;
3) aspect of the role of immaterial, imagined localities.

Lastly, for 'understanding', I expect that the following two aspects somehow enter the eventual set of dimensions, namely:

1) aspect of the fragility and contingency of gaining an understanding;
2) aspect of disturbances of all sorts potentially distorting understanding.

4.4 Framework components: 16 dimensions of 'understanding local knowledge'

Having outlined in preparatory chapters 4.1–4.3 the underlying motivation, methodological considerations and first tentative systematizations of all three notions, chapter 4.4 anticipates the concluding sets of dimensions for the three notions. As described above, these concluding sets emerge from a) extended literature analyses (cf. chapters 5 and 6) and b) a parallel integration of the dimensions resulting thereof with the tenta-

checked with the respective academic literature.

[110] The topical ideas on 'knowledge' were gained in the course of a pilot study in 2011 preceding this research that dealt with the question of how local knowledge is transmitted in contemporary Switzerland (cf. chapter b of this project).

tive systematization from chapter 4.3. As such, this chapter is an anticipation, intended to facilitate the understanding of how these sets of dimensions constituted.

Having said that, I eventually arrived at identifying a total of 16 dimensions to characterize the process of ‘understanding local knowledge’ in a generic, structured and as comprehensive as practicable a way: With respect to the central term of ‘knowledge’ (chapter 4.4.1) I identified eight dimensions, with respect to the modifying element of ’local/’locality’ (chapter 4.4.2) I singled out five dimensions and, lastly, with respect to the auxiliary notion of ‘understanding’ (chapter 4.4.3) three generalized dimensions turned out to represent a meaningful minimal set. In the following, I briefly outline these three sets of dimensions.

4.4.1 Eight basic dimensions of ‘knowledge’

With respect to the topic of *‘knowledge’*, the eight basic dimensions identified are the following:

(1) epistemic dimension of knowledge;
(2) procedural dimension of knowledge;
(3) actor-related dimension of knowledge;
(4) dimension of the social organization of knowledge;
(5) contextual dimension of knowledge;
(6) ontological dimension of knowledge;
(7) legitimational dimension of knowledge;
(8) representational dimension of knowledge.

In the following, I briefly sketch them, coupling them with the respective guiding question as described in the context of the methodology applied (cf. chapter 4.2):

(1) **Epistemic dimension of knowledge:** *What is being known (i.e. what knowledge content/items, facts of the world)?*

This question focuses on the propositional or epistemic dimension of the respective knowledge form and relates to the very knowledge content, i.e. the facts and knowledge items. It includes what is – epistemologically speaking – being called the ‘declarative part’ of the knowledge body related to specific propositional domains. It represents the dimension that is commonly covered in the vast majority of traditional approaches to local knowledge.

(2) **Procedural dimension of knowledge**: *What skills are related and linked to the knowledge content?*

This question centers on the procedural dimension of knowledge and draws the attention to skills, procedures, techniques and methods linked to the epistemic dimension of knowledge. In my understanding this dimension also covers the notion of explicit and implicit knowledge.

(3) **Actor-related dimension of knowledge:** *Who knows it?*

This question addresses the actor-related dimension and refers to the knowledge holders themselves, situating them in the specific social context. I expect this dimension to include, among others, knowledge-related information on social roles and the related social structure, power relations as well as forms of decision-making processes.

(4) **Dimension of the social organization of knowledge:** *How are social processes related to knowledge organized?*

This question aims at the organizational dimension of the respective knowledge form and addresses the social processes and interactions shaping and characterizing it. Presumably, these processes extend to issues such as e.g. knowledge generation, acquisition and transmission.

(5) **Contextual dimension of knowledge:** *What is the broader cultural, social, political, environmental, economic and religious context in which the knowledge form in question is embedded?*

This question concentrates on the contextual dimension of the knowledge form in question and explores how these embedding factors shape the knowledge form or are reflected in it. In my understanding, the embedding factors include the natural environment as well as (often closely related) cultural, social, religious, economic and political ways of social organization.

(6) **Ontological dimension of knowledge:** *What are the knowledge sources?*

This question focuses on the ontological dimension of the respective knowledge form and examines the actual sources of knowledge. It inquires where the knowledge form involved has originated, thereby adopting an emic perspective to the greatest extent possible, i.e. exploring this question from the perspective and understanding of the knowledge holders.

(7) **Legitimational dimension of knowledge:** *How is the knowledge legitimized?*

This question addresses the legitimational dimension of the respective knowledge form and centers on its justificatory foundation, tracing its legitimational

status as proclaimed by the respective knowledge holders. Supposedly, this dimension includes information about the epistemological justification of the specific knowledge form as well as criteria for its validity.

(8) **Representational dimension of knowledge:** *In which media and forms is the knowledge represented?*

This question centers on the ways and modes how the knowledge form in question is represented in the respective cultural context. I expect that these representations include a range of diverse visual and auditive forms of representation and even potentially extend to rituals and performances.

4.4.2 Five modifying dimensions of 'locality'

With respect to locality, the overarching question in this research addresses the ways in which a specific locality influences the knowledge body of the people present there or moving through the area, or, to phrase the issue the other way round, how a specific locality is reflected and expressed in a given local knowledge form. With this modifying function of locality in mind, I distilled in the course of the literature review on 'locality' and the overarching topic of 'spatiality' a total of five basic dimensions of locality that in my understanding describe the relevant and generic characteristics of a given locality (cf. chapter 4.2 for the methodology applied). Consequently, I expect them to saliently describe the influences of a given locality on the local knowledge form in place.

The five dimensions are the following[111]:

(9) physical-material dimension of locality;
(10) actor dimension of locality;
(11) network dimension of locality;
(12) influx/response dimension of locality;
(13) relevance dimension of locality (functional-symbolical).

In the following, I briefly sketch these five dimensions, again coupling them with the respective guiding questions as for the dimensions of knowledge in chapter 4.4.1:

(9) **Physical-material dimension of locality:** *What are the physical, material and resource-related characteristics of the locality in question?*

This question describes space in its basic material quality and condition. It includes a broad variety of data on material-physical properties including e.g. the

[111] In view of developing a single framework that is expected to integrate the aspects of 'knowledge, 'locality' and 'understanding', I opted for numbering the dimensions consequentially, i.e. dimensions 1-8 are dimensions of knowledge, dimensions 9-13 concern dimensions of locality and dimensions 14-16 discuss dimensions of understanding.

material location, sunshine and precipitation levels, soil type and quality, vegetation zone and related flora/fauna, types of natural resources available etc.

(10) **Actor dimension of locality:** *What kind of living actors (humans, animals, plants etc.) and non-living actors (artifacts of all types, structures, objects, stories, practices, ideas etc.)*[112] *are characteristic for the respective locality and constitute its basic configuration? Are these actors physically present in the locality in question, do they move through it or do the encounters take place on an imaginary/virtual plane?*

This question covers the influencing actors that characterize and shape localities. This includes both living and non-living entities that spend time in the locality in question, shaping it accordingly and constituting what could be called the local (more or less stable) configuration of living and non-living actors. Moreover, it also encompasses the more migratory type of actors that move through a given locality and influence it while doing so (such as migratory workers for 'living actors' or monthly recurring markets for 'non-living actors'). Lastly, in view of modern means of communication – in the first place the internet – this dimension also covers whether these interactions necessarily involve the co-presence of all parties involved or whether the interactions take place on virtual or imaginary levels, mediated by technological devices that no longer require real, physical co-presence in a specific locality.

(11) **Network dimension of locality:** *How is the locality in question interconnected with other localities and what are the characteristics of this network?*

This question aims at gaining an understanding of the network aspect of locality and studies the interconnectedness between localities as well as the characteristics of this network.

(12) **Influx/response dimension of locality:** *What kind of influencing factors from the outside – living actors (humans/animals/plants etc.) as much as non-living actors (objects/stories/ideas/practices etc.) – enter the locality in question (=influx) and what is the locality's reaction to the influencing factors (=response)? Are the reactions rather receptive or defensive and does the language usage*

[112] Although the actor dimension bears resemblance to Bruno Latour's notion of 'actants', which equally denotes human and non-human actors (1994, 1996), it was not inspired by his contribution nor do I commit to it or its implications. Rather, integrating the entity of non-living actors and relating them to the living ones in one single dimension represents one of the fundamental initial decisions of mine. It is motivated by the often observed tendency of researchers and development practitioners to exclusively attribute a steering influence to humans or, at the utmost, animals or plants, overlooking the paramount influence inanimate objects, stories, practices and ideas can exert (e.g. mobile devices or the omnipresent debate on terrorism).

show signs of double-accentedness indicating acts of resistance to power hierarchies and structures[113]*?*

This question centers on the response of a given locality to the influencing factors/actors (living and non-living ones) entering from the outside. This aspect is especially important in view of the contemporary, ever-increasing levels of mobility and globalization: While contact and exchange among local communities has always been existent and formative, the quantity and diversity of influencing factors meeting and shaping a given locality has reached unprecedented levels. Consequently, this question inquires whether the response is of an integrating, accommodating nature – potentially leading to acceptance and adaptation and resulting in higher levels of interconnectedness, mixture and hybridity – or of a rather defensive, preservative nature – potentially resulting in rejection and fragmentation. With respect to the local language usage it additionally studies (where feasible) whether there are incidents of double-accentedness in the language usage – i.e. ruptures counter-marking the officially told version – pointing to tensions in the local power structure.

(13) **Relevance dimension of locality (functional-symbolical):** *What kind of different functions does a given locality embody for the different actors in it ('functional') and what different symbolic meanings are attributed to the location in question ('symbolical')?*

Given the multivalent nature of localities this question addresses the broad spectrum of relevance-related characteristics that render a given locality significant in the eyes of the inhabitants or of the people moving through it. This relevance extends to both functional and symbolic aspects: In terms of a pragmatic approach, it encompasses on the one hand the range of actualized functions a locality embodies for the variety of actors present in it or moving through it. On the other hand and complementing this utilitarian perspective, the relevance dimension also takes account of the symbolic meanings and layers that different actors attribute to a given locality, including the various identities ascribed to localities. Concerning a distinction between functional and symbolic relevance, there is no clear-cut line to orient oneself nor is there any absolute position from which to objectively assess said demarcation line: Certain elements that characterize a given locality might have specific functions while at the same time

[113] 'Double-accentedness' is a concept introduced by Russian scholar Mikhail Bakhtin and points to the potential of oral or written communication to contain two generally conflicting styles, belief systems or social languages with the purpose of the second layer offering resistance to power hierarchies and structures. Cf. in detail in chapter 6.3.6 on 'hybridity'.

also serving symbolic purposes. Other elements might just be functional in and of themselves without addressing any symbolic aspects whereas others might just focus on the symbolic plane without pursuing any function in the material world, at least no readily apparent ones.

4.4.3 Three generalized dimensions of 'understanding'

In the process of establishing and detailing the dimensions of knowledge and locality a third, qualitatively different and complementing perspective emerged that needed to be taken into consideration and integrated when striving to grasp the complex phenomenon of *understanding local knowledge* as comprehensively as possible. Taking one step back, this perspective is primarily related to the process of actually *understanding* local knowledge in the sense of an empirical activity. It denotes the processes of perceiving, pre-structuring, processing, contextualizing and interpreting unfamiliar impressions and information against the backdrop of one's assumptions, preconceptions and biases stemming mainly from one's social background, professional training and life experience.

Given the 'mediating' role of *understanding* – mediating between the person coming into contact with local knowledge and local knowledge itself – I opt for calling this meta-level *'reflexive understanding*'. For convenience and simplicity reasons, it is in the following mostly abbreviated to *'understanding'* whereby the reflexive character is always assumed (cf. chapter 1.3.2).

Moreover, due to the scope of this research, the actual literature analysis of 'understanding' is more limited than those on 'knowledge' and 'locality' (cf. chapter 1.3.2).[114] Instead of a separate review on 'understanding', I resort to the literature on 'knowledge' (chapter 5) for identifying a set of fundamental and generic dimensions that I expect to apply to all cases or situations. In my view, turning to 'knowledge' for enlightening 'understanding' seems justified given the semantic closeness of 'knowledge' and 'understanding', the overlappings resulting thereof and the overall role of 'understanding' in this project.

In this respect, the meta-dimensions of understanding remain in a somewhat more sketched state that is, however, by no means indicative of their relevance, but rather contingent on what can be explored in the scope of this research. The alternative route of omitting the dimension of 'reflexive understanding' altogether in view of this limitation

[114] As outlining the debate is therefore beyond the scope of this research, I confine myself to pointing to some more recent publications providing an overview on the elusive topic of 'understanding'. They include e.g. Baumberger et al. (2016), Grimm et al. (2016), Hofer (2008) and Khalifa (2017).

was however no option as it would have jeopardized the overarching undertaking to conceptualize 'understanding local knowledge' as broadly as possible.

With this particular approach to 'reflexive understanding' in mind, I propose a total of three generic dimensions that in my view should detail the fundamental characteristics of any given perceptional and interpretational situation. Thereupon, I expect that these three dimensions saliently and generically describe potential influences guiding the knowledge process of a researcher or practitioner who finds him-/herself in an unfamiliar context of which he/she needs to make sense of, while also providing for a critical reflection on his/her cognitive processes.

The three meta-level dimensions of 'reflexive understanding' are the following[115]:

(14) dimension of the uncertainty of gaining an adequate understanding;
(15) dimension of structural and organizational constraints influencing understanding;
(16) dimension of personal biases influencing understanding.

In the following, I briefly sketch these three dimensions, coupling them with the respective guiding question as for 'knowledge' and 'locality'.

(14) **Dimension of the uncertainty of gaining an adequate understanding:** *Does the research or development initiative in question show any awareness of the inherent uncertainty related to attempting to understand unfamiliar knowledge environments? Is there an awareness of the epistemological complexity of the undertaking and the possibility of failing to reach an adequate understanding?*[116]

This question aims at the inevitable core challenge involved in attempting to understand local knowledge forms, namely the fundamental uncertainty related to the processes of gaining a robust understanding across epistemologies. It explores to what extent the actors involved are aware of and reflect on the provisional status of their knowledge and account of the possibility of potentially misinterpreting the local context.

(15) **Dimension of structural and organizational constraints influencing understanding:** *Are there any biases resulting from external factors such as struc-*

[115] In parallel to 'locality', I opt for consecutively numbering the dimensions of understanding in view of the overall framework, cf. footnote 111.

[116] As mentioned earlier (cf. footnote 99), this project's focus on challenges related to cross-epistemological understanding does not imply that the above mentioned fundamental uncertainty is absent in communications that do not require cross epistemological bridging.

tural and organizational constraints and if so, what are they and how can their influence be assessed in the overall picture?

This question acknowledges the potentially crucial influence of external factors on one's process of understanding. It explores and analyzes what kind of external factors can be identified that can be assumed to bear an influence on how the topic at hand is addressed and approached. In this research, 'external factors' relates to biases resulting from structural and organizational settings under which research or development projects are initiated and carried out. Examples for *structural constraints* primarily result from political, cultural or religious settings and relate to factors such as e.g. age, race, sex or religion. Examples for *organizational constraint*s on the other hand include basic organizational configurations such as e.g. an organization's basic 'raison d'être'[117], its mission statements and guidelines, the set of theories and methodologies commonly applied, strategic donor interests as well as a specific self-perception as actor in the respective field.

(16) **Dimension of personal biases influencing understanding:** *Are there any biases resulting from factors internal to the subject involved in the research or development project and if so, what are they and how can their influence be assessed in the overall picture?*

This question draws the attention to another type of influencing factors. They are located internal to the individuals involved in the research or development project and potentially bear a significant influence on the setting, course and outcome of such endeavors. Examples of internal biases include mostly unconscious assumptions, preconceptions and valuations that stem from one's own personal background and were instilled in the course of one's socialization, schooling and professional training.

[117] For academia, this extends to 'understanding the world' by arriving at new insights; development cooperation, in turn, is generally more concerned with 'changing the world' by implementing targeted interventions.

4.4.4 Summary

In light of the above considerations, I propose to organize the field of ‘understanding local knowledge’ for the purpose of this research along 16 dimensions – a set of eight dimensions for ‘knowledge’, five modifying dimensions for ‘locality’ and three generalized dimensions for ‘reflexive understanding’, as displayed in illustration 9.

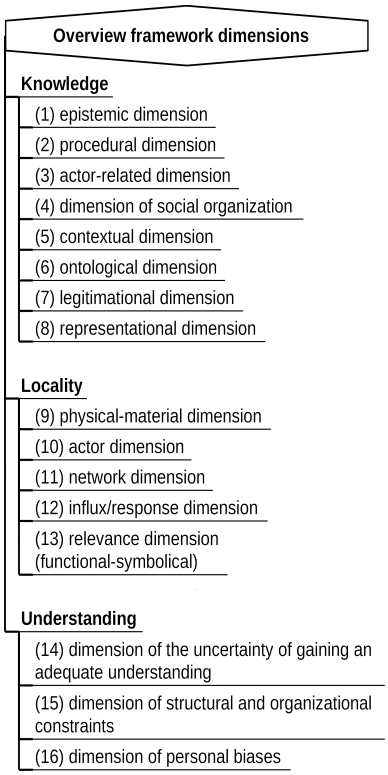

Illustration 9: Overview on the framework dimensions

5 Multi-perspective analyses of ‘knowledge’ and ‘understanding’

We live in a sea of assertions and
little if any of our knowledge
would exist without it.

Lipton (1998:1)

There is no doubt that knowledge is a highly heterogeneous phenomenon; correspondingly, there is no single, agreed upon definition of knowledge presently known or any prospect of one, but only numerous competing theories stemming from different lines of thoughts or academic disciplines (cf. e.g. Constantinescu (2012); Keselvic (2013)). The central notion of this research – *local* knowledge – only increases this complexity given the numerous ideas about what constitutes and legitimizes knowledge between different societies, communities or ethnic groups. In view of this starting position, I consider it most promising to invest in reflecting on the culturally formative, yet often unconsciously adopted Western or scientific conceptions of ‘knowledge’.

The reason for choosing this approach is the assumption that realizing one's own conceptual pre-conditioning is indispensable when asking how other traditions of knowledge are structured and potentially differ from one's own. In this respect I transfer Antweiler's general statement on anthropology and its position towards the 'alien' of other cultures (2008:79) to the case of local knowledge. Against this backdrop I posit that the 'alien' or 'exotic' and the familiar should be understood in their coherence and not separately: What is alien is in the first place not a characteristic of the object in question itself, but of its relationship with the familiar. Such a 'double approach' establishes a ground on which I show that the different ways how people construe their worlds by constituting, authorizing and validating their knowledge can be structured and pictured conceptually and categorially and, eventually, be combined in an overarching framework.

In view of this, chapter 5 invests in describing the different disciplinary approaches to ‘knowledge’, the focal notion in ‘understanding local knowledge’ (cf. chapter 1.3.2). The insights gained from these disciplinary approaches serve to provide the theoretical foundation informing a set of dimensions that are designed such that they meaningfully and generically characterize ‘knowledge’. These dimensions of knowledge – anticipated in chapter 4.4.1 for ease of understanding, but elaborated in the proper sense in the following sub-chapters 5.2–5.4 – later serve in chapter 7 as building blocks for the

development of the corresponding concepts and the eventual framework for 'understanding local knowledge'.

However, importantly, given the semantic overlap between 'knowledge' and 'understanding' described earlier (cf. chapter 1.3.2), the literature in chapter 5 is not only analyzed with respect to 'knowledge', but also in terms of simultaneously informing the notion of 'understanding', another building block of the notion of 'understanding local knowledge'.[118] Insofar, one could say that 'understanding' has no individual literature analysis, but is informed by the literature selected for the main term 'knowledge'.

Such an analytical approach to the issue at hand is also intended to counter existing tendencies such as the focus on exploring particular local knowledge forms or specific ecological functions, with a simultaneous absence of theoretical and conceptual contributions exploring the topic broadly and analytically (cf. chapter 2.1). I intend to contribute to countering this situation by taking the above described step back and by focusing on the concept of *knowledge* itself. I aim at exploring it from disciplinary perspectives complementing those usually put forward in the debate on local knowledge.[119] This explains why, for the larger part of chapter 5, I turn to theoretical contributions from philosophy and sociology before complementing them with anthropological approaches to knowledge.

Against the backdrop of these functions, chapter 5 is divided into five sub-chapters and has the following structure: In 5.1, I outline the methodology applied, including the way how this chapter additionally tackles the analysis of the auxiliary notion of 'understanding'. The remaining sub-chapters are dedicated to the multi-perspective analysis of 'knowledge' and – to a lesser extent – 'understanding': Chapter 5.2 sets out with the philosophical contributions, followed by the sociological ones in chapter 5.3 and concluded by the anthropological ones in chapter 5.4. All sub-chapters close with describing how the literature discussed contributes to informing the sets of the dimensions of knowledge and understanding (cf. chapters 4.4.1 and 4.4.3). Finally, chapter 5.5 closes with summaries illustrating the conceptual insights into 'knowledge' and 'understanding' gained from the three disciplines.

5.1 On the method

In view of paving the way for the interdisciplinary literature analyses in chapters 5.2–5.4, I start in chapter 5.1 by describing some methodological aspects, namely *first* the

[118] Complementing the picture, chapter 6 focuses on characterizing the second component, namely the auxiliary notion of 'locality', by means of an interdisciplinary literature review.

[119] Undisputedly, anthropology is considered to be the home discipline of this debate.

general intention underlying the selection of literature on ‘knowledge’ from philosophy, sociology and anthropology (chapter 5.1.1).[120] The following chapter 5.1.2 outlines how the in-depth literature analysis on knowledge simultaneously serves to inform the auxiliary notion of understanding. In a *third* step, I discuss the expectations towards the interdisciplinary literature body (chapter 5.1.3) in terms of grounding and informing the dimensions of knowledge (chapter 4.4.1) as well as, to a lesser degree, those of understanding (chapter 4.4.3).

5.1.1 On the interdisciplinary literature selection for ‘knowledge’

The selection of the specific theoretical approaches from the vast body of literature on knowledge available is informed and guided by the basic intention of this research: Instead of providing disciplinary contributions from e.g. the ethnosciences, sociology of knowledge, epistemology or cognitive anthropology, I intend to move beyond discussing the legitimate and productive controversies aiming at contributing to furthering the disciplinary development. In other words, in lieu of the controversies I look for shared or complementing perspectives. In doing so, I in no way intend to advocate one discipline over another; to the contrary, every discipline offers another welcome – if not even much-needed – perspective on the multi-layered and complex topic of knowledge.

With this in mind, the reason for this research’s specific literature selection lies in the very objective of the framework: Given that its purpose consists in providing *systematic guidance in the form of a categorial and generic framework approach to the phenomenon of local knowledge that allows for comparative studies*, I chose the contributions according to whether they approach the topic from a conceptual-analytical perspective and provide systematic insights into the topic. The fact that so far local knowledge has often been dealt with in an enumerative-descriptive manner inspired me to opt for a somewhat different path. This entailed resorting to theories that at first sight might not be obviously associated with the debate on local knowledge, but are productive with respect to providing elements to understanding the phenomenon of knowledge from a novel perspective.

The approach chosen is interdisciplinary in the sense that it investigates local knowledge on the background of the wider topic of knowledge as such. It builds on extensive studies on knowledge carried out in disciplines in which the specific topic of 'local knowledge' is no subject of discussion (as in the case of philosophy and sociology) or where it is discussed in the frame of a specific, already well-established debate that

[120] The notion of ‘understanding’ only played a minor role in selecting the literature on ‘knowledge’ for this research, which is why it is not referred to at this point.

might benefit from some expansion and complementation (as in the case of anthropology).

This multidisciplinary collection of perspectives can at the same time be challenging in that it involves differing disciplinary traditions in terms of how topics and issues are discussed – traditions that inform and form the various debates themselves, resulting in somewhat diverse ways of approaching and structuring said debate. This, in turn, renders the comparison of bodies of debate in different academic disciplines more challenging.[121] For the discussion on 'knowledge', the specific situation in terms of disciplinary characteristics is as follows:

Philosophy, for one, generally structures the long-established and prestigious debate along thematic key topics (e.g. justice, will, ideology or, for that matter, knowledge) that are controversially debated by a range of scholars with, however, comparably little focus on the authors themselves. In contrast, the majority of research in sociology and anthropology centers around influential scholars and their topical contributions. This does not imply that debates on key topics do not occur; it only implies that such debates are commonly more closely linked and discussed with reference to their creators. This general tendency is also reflected in chapters 5.2–5.4 outlining the philosophical, sociological and anthropological foundations of knowledge: While chapter 5.2 on the philosophical foundations is sub-divided along three renowned and widely debated discussion strands detailing the topic of knowledge, chapters 5.3 and 5.4 on sociology and anthropology focus on a number of exemplary scholars whose contributions are crucial with respect to both 'knowledge' and 'local knowledge', with the latter being the actual focus of this research.

As for *sociology*, it might come as a bit of a surprise that the debate on 'sociology of knowledge' – generally said to have culminated in Berger and Luckmann's publication "The social construction of reality: a treatise in the sociology of knowledge" (1966) – does not play a more prominent role in this research. The reason for this is that said flagship publication does not focus on the analysis of knowledge itself; rather, it centers on the question of how social order arises and how people's knowledge, i.e. what they take for reality, becomes ingrained in the institutional fabric of society. The perspective is therefore a procedural one and centers on issues such as habitualization, typification, institutionalization and internalization as well as their role in the social construction of reality. In contrast to this, the literature review in chapter 5 examines the topic of knowledge itself and adopts a conceptual-analytical perspective by centering on cate-

[121] I consider this to represent no problem in itself, given disciplinary traditions and potential deviations resulting thereof are adequately addressed and properly taken into account in the analysis.

gories and structural elements characterizing knowledge itself rather than on societal processes related to knowledge.

In the *anthropological literature*, for all its richness in case studies on specific instances of local (or, for that matter, traditional, indigenous etc.) knowledge all over the world, most studies restrict themselves to descriptively outlining a given local knowledge form in great detail, resulting in a treasure of anthropological studies on specific knowledge instances. Interestingly, from an interdisciplinary perspective, notwithstanding anthropology being the home discipline of the debate on local knowledge, it does, on the overall, not seem to significantly invest in developing a theoretical approach to the topic that strives for a conceptual-analytical clarity. Accordingly, only few anthropological publications on 'knowledge' address the issue of local knowledge detached from specific case studies or instances of local knowledge.

5.1.2 Integrating the aspect of 'understanding' into the equation

As mentioned earlier, this chapter has the additional function of providing the theoretical underpinning for conceptual-analytically describing 'understanding' – and thus for grounding and informing the third notion's set of dimensions in the interdisciplinary body of literature on 'knowledge'. I consider recurring to the literature on 'knowledge' to represent a justifiable step for describing 'understanding', given the semantic proximity of the two terms and topical similarities in the two academic debates. As a result, the dimensions of understanding remain on a somewhat more sketched level compared to those characterizing 'knowledge' and 'locality'. Moreover, not all literature selected for this project lends itself to such a translation; more specifically only a number of publications from sociology and anthropology contribute to characterizing 'understanding'.[122] The insights from these two disciplines are condensed in individual summaries concluding the disciplinary chapters 5.2–5.4, next to being illustrated in an overview in chapter 5.5.

5.1.3 Expectations toward informing the dimensions of 'knowledge'

In terms of rooting the notion of 'knowledge' in the literature, I expect that the in-depth literature analysis on 'knowledge' serves to theoretically inform all the eight dimensions described in chapter 4.4.1 – namely the (1) epistemic dimension, the (2) procedural dimension, the (3) actor-related dimension, the (4) dimension of the social organization, the (5) contextual dimension, the (6) ontological dimension, the (7) legitimational di-

[122] By implication, the philosophical contributions do not contribute to informing the dimensions of understanding at all (cf. chapter 5.1.3).

mension and the (8) representational dimension. In other words: The different disciplines – philosophy, sociology and anthropology – are expected to contribute in complementing ways to grounding the dimensions of knowledge.

With respect to the *philosophical foundations* in chapter 5.2, I turn to epistemology and explore the basics of what came to be today's scientific concept of knowledge, given that our reasoning on and understanding of knowledge is up to date crucially shaped by the philosophical deliberations since Greek times. In terms of the basic dimensions outlined above, I expect that epistemology provides structural insights into the following four dimensions of knowledge: the (1) epistemic dimension, the (2) procedural dimension, the (6) ontological dimension and the (7) legitimational dimension[123].

In a second step, given that thinking about knowledge from an individualistic perspective only represents one possible approach to illuminating the topic, I outline *sociological approaches* to the issue (chapter 5.3). These take into account that knowledge emerges in social contexts and is intrinsically socially construed, rendering this second approach to knowledge complimentary to the philosophical, which concentrates on the analysis of the nature of knowledge and its relations to notions such as belief, truth and justification. In terms of the basic dimensions discussed above, I assume that sociological theory contributes greatly to elucidating ‘knowledge’. For ‘knowledge’, I expect it to concern the (1) epistemic dimension, the (3) actor-related dimension, the (4) dimension of social organization, the (5) contextual dimension, the (7) legitimational dimension and the (8) representational dimension.

In a third step I turn to *anthropological theories* to complement the picture with the cultural dimension shaping knowledge forms (chapter 5.4). Theories from this discipline stress that the very nature and epistemic content of knowledge and its social rootedness are situated in and embodied into a specific cultural context that characterizes it decisively. In terms of the dimensions outlined above, I expect that anthropology gives insight into a wide array of dimensions of knowledge, including the (1) epistemic dimension, the (2) procedural dimension, the (3) actor-related dimension, the (4) dimension of the social organization, the (5) contextual dimension, the (7) legitimational dimension and the (8) representational dimension.

[123] The numbering of the dimensions is based on the listing outlined in chapter 4.4.

5.1.4 Expectations toward informing the dimensions of 'understanding'

Due to the topical and semantic closeness, I expect that a considerable part of the literature selected for 'knowledge' furnishes the material to inform the three dimensions of understanding anticipatorily sketched in chapter 4.4.3 – namely the (14) dimension of the uncertainty of gaining an adequate understanding, the (15) dimension of structural and organizational constraints influencing understanding and the (16) dimension of personal biases influencing understanding.

With respect to *philosophy*, I anticipate no contributions to 'understanding' from the literature on 'knowledge'. This results primarily from the philosophical literature selected for this research mainly elaborating on the structure and the nature of knowledge and muss less on the ways in which knowledge is processed and interpreted – aspects that are, however, paramount for grounding 'understanding' as conceptualized here in the theoretical literature.

In contrast, I expect the *sociological literature* on 'knowledge' to substantially inform the notion of 'understanding' given its explicit focus on social interaction and interpretation. In this light, I anticipate that all three dimensions – (14) dimension of the uncertainty of gaining an adequate understanding, the (15) dimension of organizational constraints influencing understanding and the (16) dimension of personal biases influencing understanding – are informed and grounded in the literature on 'knowledge'.

A similar situation applies to the contributions from *anthropology* where I assume that two dimensions of understanding are addressed by the literature selected for this research, namely the (14) dimension of the uncertainty of gaining an adequate understanding and the (15) dimension of organizational constraints influencing 'understanding.

5.2 Philosophical foundations

The following chapters 5.2.1–5.2.3 describe a number of basic characteristic aspects of the knowledge debate in philosophy. However, I thereby do not aspire at providing a comprehensive overview on the discourse or discuss its multitudinous ramifications, arguments and counterarguments in detail. Rather, I focus on certain early developments of the debate and, more specifically, on a number of fundamental typological epistemological aspects that seem promising with respect to enlightening some of the eight knowledge dimensions central to this research (cf. chapter 4.4.1).

With this in mind, I discuss in the following three specific aspects from the philosophical literature: *First*, the classification of knowledge in different knowledge types with respect to the different areas they are concerned with, *second* the distinction of a number of theories of truth, justifying in diverse ways the very knowledge content, and *third*, the classification of knowledge in terms of the sources the respective knowledge is derived from. The reason for this selection is based on the expectation that these contributions might ideally contribute to informing the dimension of 'knowledge' (cf. chapter 4.4.1) in that they represent building blocks crucial for gaining a structural idea about a given knowledge form, its content, origin and sources. More precisely, I anticipate them to inform four of the knowledge dimensions, namely the (1) epistemic dimension, the (2) procedural dimension, the (6) ontological dimensions and the (7) legitimational dimension.

Against this backdrop, I *first* describe different types of knowledge – propositional knowledge and procedural/practical knowledge (chapter 5.2.1). More specifically, in the context of propositional knowledge, I briefly outline the so-called justified-true-belief (JTB)-account, the related Gettier problem as well as subsequent approaches to the justification problem. When sketching procedural/practical knowledge, I also touch upon the concept of tacit knowledge proposed by Polanyi, as it plays a crucial role with respect to local knowledge. In a *second* step, I touch upon the interconnection between knowledge and truth (chapter 5.2.2). More precisely, I sketch different approaches to the validation of knowledge, commonly referred to as theories or criteria of truth and concentrate on those I consider relevant in view of the topic of knowledge. They include the three theories commonly called 'neoclassical theories of truth', i.e. correspondence theory, coherence theory and consensus theory. In a *third* and last step, I discuss another epistemological perspective crucial for analytically comprehending knowledge, i.e. the classification of knowledge in terms of its sources (namely perception, reason, introspection, intuition, memory and testimony) (cf. chapter 5.2.3).

Eventually, reflecting on the contributions of the philosophical theories to grounding and informing the knowledge dimensions, I summarize in concluding chapter 5.2.4 the insights from this discipline and condense how they contribute to informing the dimensions of knowledge[124] identified earlier (chapter 4.4.1).

[124] As detailed in chapter 5.1.4, the philosophical contributions only elaborate on 'knowledge' and do not contribute to informing the term 'understanding'.

5.2.1 Types of knowledge

In epistemology, a number of knowledge types are commonly debated, the main two of which I discuss in more detail in the following: propositional knowledge ('knowledge-that', chapter 5.2.1.1) and procedural knowledge ('knowledge-how', chapter 5.2.1.2). Subsequent chapter 5.2.1.3 summarizes the main characteristics of the two knowledge types and describes how they inform some of the dimensions of knowledge determined earlier (chapter 4.4.1).

5.2.1.1 Propositional knowledge

Most of the vast research body on epistemology from the ancient Greeks to the present is concerned with *propositional knowledge*. Notwithstanding the accompanying vivid and controversial discussion, it is widely acknowledged that this knowledge type, sometimes also referred to as *declarative knowledge* or *'knowledge-that'*, is knowledge that something is the case. As outlined by e.g. Audi (1998) or Steup (2012), this knowledge type, defined as factual information, represents the part of knowledge that describes how things are, i.e. facts or states of affairs such as 'whales are mammals', 'C is the third letter of the alphabet', 'Moscow is the capital of Russia' or 'stars are the root cause of all natural light on earth'. Statements of propositional knowledge are expressed by declarative sentences and may be true or false; they need not actually express a true fact, as i.e. in the example of '3+3=8', which still counts a proposition (albeit a false one). Propositional knowledge is conscious, and it can often be verbalized.

With epistemology being one of the core areas of philosophy (Knoblauch 2005:15) and with it being primarily concerned with 'knowledge-that' (Truncellito 2007), the concept of propositional knowledge has a long-standing tradition in the philosophical discourse during which it remained relatively uncontested for quite a long period. The so-called tripartite definition of knowledge at the core of the traditional analysis of propositional knowledge can be traced back to Plato's "Theaetetus" (from approx. 400 BCE) and Kant's "Critique of Pure Reason" (1908) (originally from 1781) (Bernecker and Dretske 2000a). It specifies the three criteria a statement must meet in order to be considered as knowledge: It must be (1) believed, (2) true and (3) justified, resulting in the so-called JTB-account. In other words, knowledge is considered to be a kind of (1) belief, (2) this belief is of something true, and (3) one must have a valid reason for holding it. Historically, the majority of epistemological theories were concerned with studying each of these conditions and their interrelationship (for an overview on the debates cf. Steup (2012); Truncellito (2007)). This definition of knowledge was widely accepted for a long period until 1963 when it was challenged by a short, but ground-breaking paper by Ed-

mund Gettier (1963) entitled “Is Justified True Belief Knowledge?”. In this publication, Gettier describes supposed counterexamples by illustrating two examples for which all three conditions are fulfilled, yet one would not attribute knowledge to the people involved, as the respective beliefs resulted from wrong or inadequate reasons. By demonstrating that cases of JTB are not necessarily cases of knowledge and that therefore, the three components outlined above do not provide sufficient conditions for knowledge, he showed the limits of the traditional analysis of knowledge (for a detailed analysis cf. Hetherington (2014); Ichikawa and Steup (2012)). With respect to the theoretical debate, this meant that the longstanding, tripartite definition that philosophers since Plato generally have endorsed was, strictly speaking, formally inadequate and therefore in need of readjustment.

The response to Gettier’s article was enormous and subsequently, ever since 1963, philosophers have been trying to come up with a better analysis. As Bernecker and Dretske (2000b) describe, the approaches sought to either defend the tripartite definition, to amend the traditional analysis by suggesting additional conditions on knowledge sketched to exclude Gettier-type cases, or, rather than adding conditions, to propose changes in the understanding of existing conditions (for a detailed analysis cf. Shope (2002)). However, so far no consensus could be reached among philosophers regarding a fully satisfying definition of knowledge. In its core, the debate mainly focused and still focuses on the third component – the justification – for differentiating knowledge from mere true belief as well as lucky guessing. In Klein’s words, the fundamental question was what “must be added to true beliefs to convert them into knowledge” (2005:1). With respect to the so-called justification condition, Steup (2012) argues that for an exploration to be meaningful, it first needs to be clarified what is actually meant by justification (deontological and non-deontological justification) before moving on to discuss what makes justified beliefs justified (evidence vs. reliability and internalism vs. externalism) is a useful step. Without going into the details of the debate, I briefly describe the related main arguments, given the relevance of the justification aspect for understanding knowledge conceptions.

As Pappas (2013) describes with respect to the definitional issue, the *deontological justification* builds on the idea that to believe something is equivalent to being under no obligation not to believe it. In contrast to this, he argues, the *non-deontological justification* claims that to believe something is equivalent to believing it because the correct processes result in the belief. In other words, phenomena are analyzed in two ways: in the first case in terms of the emergent belief formation or, rather, the absence of contra-arguments, and in the second case in terms of good reasoning.

With respect to the question as to what renders justified beliefs justified, the two positions of *evidentialists and reliabilists* differ significantly. From the perspective of the former, the possession of evidence is the decisive justifying factor. In this understanding, evidence includes perceptual, introspective, memorial and intuitional experiences; possessing evidence is understood as having an experience of this sort (Steup 2012). While many reliabilists consider such experiences as relevant, they are not considered to be sufficient for a justification of true belief. In their conception, only beliefs that are generated by a process deemed reliable are considered to amount to justified true beliefs. The reliability of the origin itself builds on the origin tending to produce true beliefs, thereby probabilifying the belief. Whereas for evidentialists the justification is derived from the very experience, reliabilists locate it in the specific types of processes such as e.g. perception, introspection, memory or rational intuition (Steup 2012).

Further, the construction of justification was and is being extensively discussed in terms of whether justification is to be thought of as internal or external (for an overview cf. Audi (1998); Poston (2014)). Internalists explain it in terms of the believer's mind, while externalists conceptualize it in terms of the outer world. From the perspective of *internalists*, the justification of a belief can be determined by studying the thought-processes of the believer during its formation; hence, Steup (2012) argues, justification is based on a belief's relation to other beliefs and as such, everything necessary to provide justification for a belief is available to an agent's consciousness. Given that such a process is governed by factors *internal* to the subject, the justification of true beliefs is therefore considered to be identifiable by the internal states or reasons of a subject whereby a distinction is made between 'access internalism' and 'state internalism' (Steup 2012). The former understanding of 'internal' only includes the features of a subject's experience that are directly or introspectively available, while for the latter, only intrinsic states of the subject are considered 'internal'. In contrast to the internalists' approach, Steup (2012) underlines, *externalists* mostly[125] argue that justification involves more than internal states or reasons, but requires additional external factors, i.e. factors outside the psychological state of a person and therefore factors other than the individual's other beliefs. They claim that the justification depends exclusively or primarily on such factors as how the belief was caused or how reliable the belief forming process or mechanism is by which the subject came to hold the belief. In other words, justification grounds in the way a belief is formed and is derived from the right process of belief formation, ultimately leading to knowledge.

[125] Some externalists argue that knowledge does not require justification at all.

5.2.1.2 Procedural knowledge

The second type of knowledge to be discussed in the frame of this chapter is *practical or procedural knowledge*, sometimes also referred to as *'knowledge-how'* (in this research, the different terms are used interchangeably; for a detailed terminological discussion cf. Fantl (2012)). It is the knowledge of how to perform or operate something, it involves knowing how to do something and relates to practices, techniques, methods and strategies. It is the type of knowledge someone has and demonstrates through the procedure of doing something with the most often cited example being 'riding a bike' (Fantl 2012; Steup 2012).

According to Fantl (2012), the debates in epistemology about practical knowledge center around two main topics. *First,* there is the question as to what degree practical knowledge is independent of propositional knowledge or, more generally, how the two knowledge types are related to each other. According to Fantl, it is controversially discussed whether to know a set of suitable propositional facts about something is sufficient for knowing how to do something and whether one has to implicitly or explicitly consider a fact about how to do something before one is able to exercise specific knowledge.

With respect to these questions, Gilbert Ryle's contribution (1949) was seminal in emphasizing the distinct difference between 'knowledge-how' and 'knowledge-that'. He claims that failing to acknowledge this distinction prompts vicious regresses. His argumentation resulted in the majority opinion of current academic philosophy attesting 'knowledge-how' "a considerable degree of independence" (Fantl 2012:1). Following Ryle, the view that to know the right facts about how to do something does not amount to knowing how to do it is called 'anti-intellectualism'. It also implies that no implicit or explicit considerations of facts about how to do things are necessary before being able to exercise 'knowledge-how' (Adams 2009). Fantl points to a more radical form of anti-intellectualism brought forward e.g. by Roland (1958) or Hetherington (2006) that considers 'knowledge-that' to be reducible to 'knowledge-how'. In contrast to these versions of anti-intellectualism, the moderate as well as the more radical one, intellectualism in its numerous variations as e.g. proposed by Stanley and Williamson (2001) views the two knowledge types as dependent. It claims on the one hand that to know the right kind of facts equals knowing how to do something and on the other hand that an implicit or explicit consideration of a proposition is necessary before being able to exercise know-how (for a detailed discussion on the two positions cf. Bengson and Moffet (2012)).

Circling back to Fantl's two main topics discussed in the debate on practical knowledge, the *second issue* extends to the question what practical knowledge exactly consists in. While for the intellectualist, practical knowledge consists in the knowledge that certain propositions are true, anti-intellectualists refer to knowledge consisting either of some sort of ability or some sort of disposition (Fantl 2012).

A characteristic feature of practical knowledge especially relevant with respect to the debate on (local) knowledge consists in 'knowledge-how' involving implicit knowledge or learning. Its acquisition as well as structure are often unconscious, not considered in detail and therefore unavailable to the subject. While one might well be able to demonstrate something, he/she might not be able to verbally express how it is actually done, as in the example of the baker 'knowing' when the dough is ready be 'feeling' it, without being able to verbalize this knowledge precisely.

Arguing for differentiating between 'knowledge-how' and 'knowledge-that' like Ryle and for understanding how both types are grounded using the example of the act of balance when riding a bicycle, Polanyi introduced the distinction between explicit and tacit knowledge in his publication "Personal Knowledge" (1958). Explicit knowledge generally refers to objective, rational and formalized knowledge that can be – and in fact is – expressed in words, sentences, numbers or formulas such as theoretical approaches, databases, problem solving approaches, manuals etc. In contrast to this, tacit knowledge is described as informal, subjective, embodied and experiential knowledge that generally cannot be described in terms other than its skillful performance. For Polanyi, subjective and context-bound elements are inherent elements in the process of knowing, a process that is strongly shaped by the affective motivations and the personal commitment of the subject – a characteristic underlined by Grant (2007). Given its elusive character, tacit knowledge is characterized exactly by not being available explicitly, but by being best seen by its action. Transmission is therefore required to take place from person to person, by means of what is generally linked to the idea of an apprenticeship: observation and imitation, accompanied – if possible – by verbal feedback and advises on the very process (Tsoukas 2011). Tacit knowledge includes technical skills such as know-how as well as cognitive skills such as beliefs, images, perspectives and mental models. In contrast to this, explicit knowledge is characterized by the subject holding this knowledge consciously and being able, if necessary, to express it verbally. However, according to Polanyi, the part of knowledge that can be put in words is always based on a significantly more extensive, hidden foundation of tacit knowledge or in Polanyi's own words: "We can know more than we can tell." (1958:4)

5.2.1.3 Summary of the dimensions of 'knowledge' informed

Summarizing the two debates outlined above in terms of their contribution to elucidating some of the knowledge dimensions determined in chapter 4.4.1, the description of propositional and procedural knowledge by means of some basic epistemological characteristics is informative in a number of ways (cf. illustration 10 for an overview). Importantly, it introduces the general distinction between the epistemic dimension and the procedural dimension of knowledge, differentiating 'knowledge-that' from 'knowledge-how' and thus informing the first two knowledge dimensions, i.e. the (1) epistemic dimension and the (2) procedural dimension.

Propositional knowledge or 'knowledge that something is the case' constitutes factual information and relates to the knowledge content, representing the knowledge type which traditionally receives most attention in studies on knowledge (including studies on local knowledge). Procedural knowledge or 'knowledge-how' designates the knowledge how to perform or operate something and involves practices, techniques, methods and strategies. It has been shown that at least a part of 'knowledge-how' is of implicit nature and can only hardly – if at all – be verbalized and made explicit.

Moreover, the epistemological debate on the degree to which practical knowledge is independent of propositional knowledge is significant with respect to analytically comprehending knowledge; the reason for this being that the respective positioning vis-à-vis this question influences the degree to which skills are considered to be teachable to people unfamiliar with the context and its implicit layers. This, in turn, influences the degree to which knowledge-related processes such as e.g. knowledge transmission are considered feasible and/or worth pursuing.

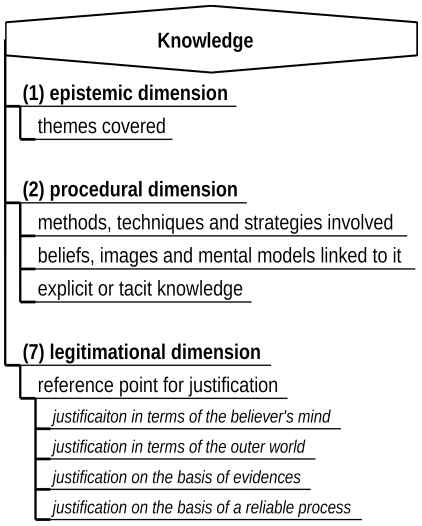

Illustration 10: Dimensions of knowledge informed by philosophy – types of knowledge

Next to grounding the epistemic and procedural dimensions of knowledge, the discussion of the two knowledge types also contributes to elucidating another dimension of knowledge, i.e. the (7) legitimational dimension. The reference to the tripartite definition and its limitations aims at outlining the generally accepted basic structure of content-related knowledge[126] and especially the outstanding significance of the justification condition. It indicates that knowledge content needs

[126] As such, the discussion on justification is also pivotal in terms of grounding specific factual information and, thus, knowledge content, informing again the epistemic dimension.

to be seen against the backdrop and in the context of its justificatory basis. This factor is all the more important for local knowledge as one cannot presuppose modes of legitimation given that they may significantly differ from the scientific ones Western actors are most familiar with.

The epistemological debates regarding the legitimation of knowledge discuss the need for clarifying what is actually meant by justification, distinguishing between a number of approaches. On the one hand, there is the differentiation between deontological and non-deontological justifications that covers the distinction of whether a justification is based on the absence of contra-arguments (deontological justification) or on a correct reasoning process (non-deontological justification). On the other hand, the justification problem is discussed in terms of what instance or reason exactly renders justified beliefs justified.

This approach is detailed in two sub-debates – one on the issue of evidence vs. reliability and a second one on the issue of internalism vs. externalism. The first debate on evidence vs. reliability amounts to the argumentative weight being placed on experience: Whereas evidentialists consider experience to represent the decisive evidence for justifying a so-called true belief, experience is not considered to be sufficiently a viable argument for reliabilists.

From their perspective, only true beliefs generated by processes deemed reliable deserve to be considered as justified. In other words, justification is strongly connected to specific types of processes related to perception, introspection, memory or rational intuition. The second debate on internalism vs. externalism circles around the issue whether justification is thought of as internal or external to the subject. Internalists locate it in the agent's inner world or mind whereas externalists pinpoint it in the outer world and in factors external to the subject.

5.2.2 Criteria of validity for knowledge

The topics of knowledge and truth are intrinsically dependent and linked to each other. How truth is conceived by the majority of people within a knowledge system has a profound influence upon what sorts of criteria are used for differentiating between truth and falsehood and for establishing what eventually counts as accepted knowledge. What is true is, in turn, profoundly reliant on what is considered real. What is considered real constitutes the fundamental categories that are to a large extent unconscious and emerge as categorial conceptualizations. The concepts of truth and falsehood are therefore heavily influencing the very content and structure of reasoning and are pivotal

for communication and mutual understanding as they spell out how true claims are distinguished from false ones and on what basis divergent assertions, potentially even contradicting ones, are to be handled, i.e. accepted or rejected. A theory of truth is therefore in essence an interpretation of the nature of truth and a body of 'laws' with which 'true' things comply within a wider metaphysical system, at least with respect to theories belonging to the neoclassical ones as outlined by Glanzberg (2014). Criteria of truth represent rules and standards to assess the accuracy of statements and claims. Recognizing a knowledge system's criteria of truth as formulated from an inside perspective is pivotal for a clear understanding of its basic functioning and characteristics from the outside.

With respect to the overarching topic of knowledge, getting an understanding of different approaches to truth is fundamental in two ways. On the one hand, it is crucial in a conceptual-analytical sense in that it allows grasping what is considered to be true on a conceptual basis within a given knowledge system and to reflect on it in a structured way. On the other hand, it is indispensable with respect to interacting with the knowledge system in question, as it facilitates a meaningful and constructive communication and paves the way for establishing a common ground and facilitating mutual understanding. In terms of the comprehending knowledge in a structured and conceptual-analytical way, the three theories of truth are substantive as they point to the justificatory basis of any given knowledge form.

Against this backdrop, the following paragraphs outline the neoclassical theories of truth widely discussed in epistemology, namely the correspondence theory (chapter 5.2.2.1), the coherence theory (chapter 5.2.2.2) and the consensus/pragmatic theory (chapter 5.2.2.3). This collection is not comprehensive, but tailored to the overarching topic of ‘local knowledge’. In a similar vein, I only sketch the basic ideas and arguments of these approaches, without outlining the controversial debates surrounding each of these approaches. Concluding chapter 5.2.2.4 summarizes the main insights gained from studying different approaches to truth, outlining how they inform some of the dimensions of knowledge defined earlier (chapter 4.4.1).

5.2.2.1 Correspondence approaches

Correspondence approaches to truth as outlined in detail by David (2013) claim that something is true when the claim one makes corresponds to reality; when it does not correspond, the claim is considered to be false. What is thus needed to render something true is a clear correspondence between the claims made and an external set of facts or the reality in the world; in any case, the truth of one’s claims or beliefs must not

be mind-dependent (Audi 1998). Historically the most popular theory and going back to Plato and Aristotle, correspondence theory considers a claim (or more precisely: a proposition) to be true on condition that there exists a fact corresponding to it (Dowden and Swartz 2014). In other words, truth amounts to a certain relationship between proposition and corresponding fact. The main focus of this theory lies on the relationship between claims or propositions on the one hand and facts or objects on the other hand; the truth ultimately depends on whether the claim in question correctly describes reality empirically.

Many philosophers hold correspondence theory to be the most valid criteria of truth; it is also compatible with the scientific idea of truth which claims that truth is only graspable if there is some reference in nature one can point to. However, correspondence as criterion of truth is not only endorsed by science and by a respectable number of philosophers, it is also the most accepted approach to truth by (Western) lay people. Generally, it is incontestable that an idea corresponding to its object is true, however, there are a number of controversies around this topic as e.g. outlined by David (2013). These issues relate to the question of how 'facts' as such are characterized and whether the relationship of correspondence can be satisfyingly described (cf. e.g. McDermid (2014)), given it is concerned with linking physical facts and mental representations, leading certain theorists to the conclusion that additional factors such as e.g. language need to be analyzed to illuminate this very correspondence.

5.2.2.2 Coherence approaches

Coherence approaches to truth as the one elaborated by Young (2013) argue that truth is in the first place about coherence. They postulate that a claim or proposition is true if and only if it coheres with some specified set of sentences, propositions or beliefs in one's mind that are held to be true (Audi 1998). In contrast, a belief is considered false and is to be doubted if it contradicts other beliefs that are considered to be true. Unlike correspondence approaches that ascertain truth to facts of the real world and hence to something outside the subject, coherence approaches define truth in terms of the correspondence with the facts of mind and hence internal to the subject.

In view of the vast complexity of reality surpassing human understanding, the most important characteristic of truth claims as originally formulated by Hegel and Spinoza is considered their fit into some sort of coherent and consistent arrangement, thereby contributing to an overarching overall explanation. In other words, truth is made from a web or system of propositions or beliefs each of which implies the other stands in some relation of evidential support. Thus, as truth applies to the system as a whole and not to

the single propositions, truth claims are not believed individually. Subsequently, ascribing truth to individual propositions is only possible in so far as they cohere with the whole system. In addition, truth becomes a matter of degree as the web of beliefs and propositions can be interconnected to more or less convincing degrees.

There exists a number of objections against this theoretical approach (cf. e.g. Glanzberg et al. (2014); Young (2013)). An often cited critique relates to the possibility that there could be two equally coherent, but mutually exclusive belief systems, which would amount to a violation of the law of non-contradiction – an objection that only applies to some early version of the coherence theory, according to Young (2013). Another problem is that a belief can be consistent with the existing set of propositions, yet still lack an independent supporting evidence (as e.g. in the case of metaphysical versions of coherence theories).

5.2.2.3 Consensus approaches

Consensus approaches, introduced around the turn of the 20th century in first place by Pierce, James and Dewey and often also subsumed under the label of 'pragmatic theory of truth', focus on truth claims that can be used to solve problems. According to this conception, truth is not to be found in the facts of world nor the mind as in correspondence and coherence approaches sketched above, but in an active process of engagement with the world, followed by verifications. As outlined in detail by McDermid (2014) or Hookway (2013), statements are true if they allow one to interact effectively and efficiently with the world. Thus, if an idea works in the actual practice, it must be true; whatever is expedient for human living amounts to truth. Given that in the frame of this approach, truth is based on individual perception, a wide range of ideas about truth are potentially acceptable, depending on the positions and perspectives of those perceiving, resulting in reality being determined by what seems functional and probable. Moreover, truth is not only understood as relative, but also as gradual: The less true a belief is, the less it assists the subject in the interaction with the world. Once no interaction is taking place, the belief has proven to be false. The means to determine the actual truth value rests in an in-depth examination of the results. The truth becomes self-apparent in its concrete application as e.g. in the case of medications directed at and proven effective against certain diseases. As such, truth does not primarily correspond to an agreement with reality, but to an agreement among humans as to what is effective. Ideally, as postulated by Pierce and James, such an agreement should be reached by means of a scientific investigation culminating in a collective consensus on the topic in question. Correspondingly, as Audi describes (1998:289f.), false beliefs are expected to

eventually lead, at least after a sufficiently long period of 'testing' them, to disconformation, thereby revealing their epistemic status. A variation of the pragmatic theory of truth called 'negative pragmatism' and introduced by Hocking at the beginning of the 20th century, takes this interrelationship one step further and states that what fails during this testing phase, cannot be true as the truth always works, whereas what works may or may not be true, the status of the latter is undefined.

The critiques directed at consensus approaches to truth extend to a number of issues as outlined e.g. in Dowden and Swartz (2014). They include the inclination towards relativism as in the case of beliefs compatible with all conditions, the inherent rejection of the law of non-contradiction due to the notion that there are degrees of truth, the vagueness and ambiguity of the notion of 'what works' or 'what is useful to believe', leading to overestimating the relevance and strength of the connection between truth and usefulness and, finally, the potential for false positives occurring when untrue concepts could seem to deliver positive results contrary to the objective of the pragmatic test.

5.2.2.4 Summary of the dimensions of 'knowledge' informed

An analysis of the three debates outlined above in terms of their contribution to specifying the basic dimensions of knowledge determined in chapter 4.4.1 shows that the main insight consists in specifying the (7) legitimational dimension of knowledge (cf. illustration 11).

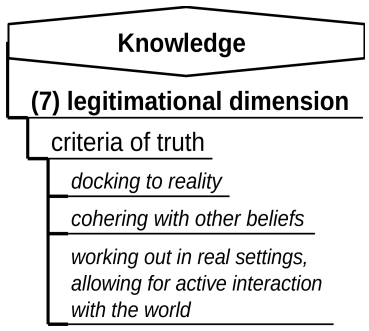

Illustration 11: Dimensions of knowledge informed by philosophy - criteria of truth

Recapitulating the three theories of truth, they represent different approaches to specifying the means by which truth of knowledge content is attained: Correspondence approaches rest upon a clear correspondence between the actual claims and an external set of factors, i.e. the observable reality in the world; for something to be considered true, it needs to correctly describe empirical reality.

In contrast to this, coherence approaches are mind-dependent in that they define truth in terms of claims cohering with some specified set of sentences, propositions or beliefs that already exist in one's mind and that are held to be true. Truth claims in this conception are not believed individually, but have to cohere with what is already considered true. Finally, consensus or pragmatic approaches are characterized by their usability. Instead of locating

truth in the facts of the world or the mind, these approaches consider to be true what works in practice and what allows one to interact effectively and efficiently with the world while not being disproved by rigorous practical testing.

In other words, correspondence approaches are based on a reliable docking and matching to reality. Coherence approaches rest upon a web or system of coherent beliefs whereas consensus approaches establish truth in a successful interaction and handling with and of the world.

5.2.3 Sources of knowledge

Next to investigating what knowledge is and what types of knowledge occur, epistemology is also interested in how knowledge arises or is obtained. This search is partly motivated by the assumption that the origins of knowledge might provide some information about the actual nature of knowledge (Martinich and Stroll 2014). Two intertwined debates are characteristic in this respect: The first one relates to whether knowledge is acquired through experience or is innate, i.e. possessed from birth (cf. e.g. Martinich and Stroll (2014), on innate knowledge cf. e.g. Carruthers (1992); Markie (2013b)), while the second debate discusses the ultimate source of human knowledge, i.e. whether knowledge is obtained through rational reflection on ideas (rationalism) or through the senses (empiricism) (Truncellito 2007).

Next to the dualistic division into empiristic and rationalistic positions, another approach consists in describing the sources commonly considered providing 'raw' material for inductive generalizations. In this vein, several approaches invest in designating and organizing these sources such as e.g. dividing them into basic and nonbasic sources (Audi 2002). However, as the main purpose of this chapter consists in outlining basic characteristics of knowledge discussed in epistemology that have the potential of informing some of the dimensions of knowledge detailed earlier (cf. chapter 4.4.1), I refrain from discussing these differing classificatory approaches in detail and rather focus on describing the actual sources. With respect to local knowledge, the focus of this research, I consider six of them to be especially relevant: (a) perception/senses, (b) reason/reasoning, (c) introspection, (d) intuition, (e) memory and (f) testimony.

5.2.3.1 Senses / sensual perception

Knowledge derived from sensual perception is commonly called empirical knowledge (for an introduction into the philosophy of perception and the related core epistemological issues cf. Fish (2010)). For empiricists, perception represents the fundamental source and the ultimate touchstone of all knowledge and is therefore of primary impor-

tance in providing knowledge of the world. The senses figure as exploratory organs, whatever is being learned is done so through perception as getting acquainted with the world happens through the use of the senses. As such, this knowledge represents a posteriori knowledge (Markie 2013b).

Understanding knowledge as derived from perception is a position widely compatible with a scientific world-view that emphasizes experimentation and observation (Truncellito 2007). In contrast, knowledge without experience (with the possible exception of trivial semantic and logical truths) is considered impossible. Consequently, classical empiricists reject the existence of innate, in-born knowledge or concepts (Markie 2013b). A prominent exponent of this conception is John Locke; he described the mind as a ‘tabula rasa’, a 'blank slate' upon birth. At that time, a person does not know anything, according to him; it is only through time that the mind is equipped with information attained through experience and perception. While 'radical empiricism' claims that all knowledge with no exception is derived from the senses and that statements lacking a foundation in experience are meaningless, 'moderate empiricism' acknowledges on an exceptional basis the existence of cases in which perception does not ground knowledge, i.e. cases of a priori knowledge – however, without attesting these cases to represent any significant knowledge content (Martinich and Stroll 2014).

One of the main criticism is directed at the fallibility of sensual perception that renders such knowledge unreliable. Assuring oneself of the reliability of one's perceptual faculties does not represent a way out as it entails in turn recurring to memory, which is not considered to be more reliable – putting aside that such procedure would amount to a circular argument ((Steup 2012); for a discussion of the various responses to this challenge cf. Crane (2011)). Another central concern, primarily uttered by rationalists, is that empiricism is not able to provide a satisfying explanation for certain types of knowledge – knowledge of pure mathematics or ethics being examples of such knowledge – as the content of these concepts seems to transcend whatever could be gained from experience (Markie 2013b).

5.2.3.2 Reason

From the perspective of rationalists, reason – not experience – is considered to play the decisive role when it comes to obtaining knowledge; reasoning can be understood as process of using valid known facts to arrive at new insights, thus generating knowledge, as Markie (2013b) outlines. He argues that the rationalist perspective is closely associated with the concept of 'innate' ideas and truth and underlines that some knowl-

edge is already present and known before one experiences the world as e.g. in the case of the ‘faculty for language’ studied in-depth by Noam Chomsky.

Moreover, rationalism argues that there is knowledge derived entirely from reason, without involving empirical evidence at all; such knowledge is commonly called a priori knowledge (Steup 2012). These truths, though probably not known innately, can be worked out without the need to base them experientially, the argument goes; they extend e.g. to truths of logic or mathematics or to ethical truths. Finally, rationalism argues that while some knowledge is arguably grounded in part in experience, it is not derivable from experience alone. While not denying the limits of learning through abstract reasoning alone, rationalism still argues that perception alone does not lead to knowledge or insight, as e.g. in the cases of truths about causations. On this ground, in terms of obtaining knowledge, rationalists attribute a more fundamental role to reason than to the senses.

The very process of reasoning occurs in the form of deductive or inductive reasoning. Deductive reasoning involves drawing valid conclusions from previously known facts, i.e. deducing truths from existing knowledge. Inductive reasoning amounts to reasoning aiming at supplying strong evidence (albeit not absolute proof) of the truth by conclusion. It includes reasoning from past experiences to a generalization and, for certain authors, from inference to the best explanation. However, in contrast to the conclusion of the deductive argument that is supposed to be certain, an inductive argument cannot provide absolute proof – rather, the premises of the inductive argument imply inductive probability, i.e. some degree of support for the conclusion, but do not encompass it (cf. e.g. Vickers (2013)). In other words, they suggest truth while not guaranteeing it, as the truth of an inductive argument is only supposed to be probable, depending on the evidence on which it builds. Both forms, deductive and inductive reasoning, however, usually depend to a certain degree on sensation that provides the initial facts or ideas from which the reasoning takes its start.

As for issues raised with respect to the rationalist approach, they concern, *first,* whether there exists any a priori knowledge at all (a position taken by the skeptics with regard to apriority), *second,* how exactly such a priori knowledge comes about, once its existence is accepted, and, *third,* what such knowledge in fact covers (limitation of a priori knowledge) (Steup 2012). Speaking from a rationalist perspective, the position's vulnerability extends to the need for the original facts 'put into the process' to be correct in order to produce correct knowledge. In addition, the process itself has to be reliable, an issue that is especially prominent in the case of inductive knowledge that is con-

fronted with the challenge of how to justify any form of non-deductive reasoning as a source of knowledge (for a discussion of the so-called 'problem of induction' cf. Vickers (2013)).

5.2.3.3 Introspection

Introspection is the means by which knowledge of one's self, one's beliefs and sensations can be obtained (Steup 2012). This internal self-evaluation was (and by certain proponents still is) considered to account for privileged knowledge – privileged in the sense that such knowledge seems to be in some way more secure than beliefs about the external world. As a consequence, it is more likely to account for valid knowledge compared to knowledge acquired through perception. This claim, going back to Descartes, is grounded in the assumption that introspection is infallible, self-intimating, self-warranted and immediate (for an overview cf. Kind (2014)).

These assumptions have been challenged on several counts by philosophers who have accounted for different models of the self and self-knowledge (cf. e.g. Alston (1971)), but also by Freudian and Lacanian theories of the mind. The transparency of the mental was rejected, and it was argued that introspection does not represent a privileged access, given that subjects are often mistaken about their own motives and emotions. In view of these limitations, certain scholars such as Ryle (1949) or Dennett (1991) conclude that the first-person access to one's own mental states might occasionally even lead to worse results than judgments about others' mental states.

However, among those denying the mental a special accessibility and transparency, many still argue that subjects do have a special authority about (some) of their own mental states, as opposed to the knowledge of the external world and the minds of others. Under these premises, introspection is still considered valuable as a reliable guide to one's thoughts and sensations (Gertler 2009).

5.2.3.4 Intuition

The nature of intuitions as conceptualized in epistemology and their function with respect to knowledge are highly contested. Intuitions relevant in this context are limited to so-called 'rational intuitions', which, according to BonJour (1998), can be thought of as immediate apprehensions or immediate knowledge of a proposition or object. The majority of epistemologists concerned with the topic – including Osbeck (2001) and Goldman and Pust (1998) – consider them to be a priori knowledge, independent of any reasoning process and therefore non-inferential. This position is also shared by Markie (2013a) who describes intuition as understanding a proposition in such a way as to just

see that it is true, with no reliance on inference, perception, introspection, memory or testimony. Other proponents as e.g. Sosa (2007) characterize intuition as “roughly equivalent to competence with respect to the relevant subject-matter while distinguishing intuitive insight from conceptual analysis” (Symons 2008:68). The advocates of intuition in philosophy hold that its function consists in revealing the characteristics and shapes of concepts; intuitions are often seen as inputs to theoretical reasoning about the meanings of concepts. According to Bealer (1996, 1998), intuitions function as reliable, essential sources of evidence for epistemic justification and as such represent reliable indicators of truth, which renders them imperative to the philosophical endeavors. As such, they are said to represent legitimately useful world-directed probes and can serve as part of a methodologically conservative stance towards philosophical investigation (Symons 2008). Accordingly, many epistemologists do not consider intuitions as infallible, rather they describe intuition as yielding prima facie rather than conclusive evidence about the nature of knowledge (cf. e.g. Nagel (2007)). A characteristic feature of intuition is based on its modes of functioning and the fact that they are not accessible to the subject at the moment of judgment. Intuition may arise without it being immediately transparent to the subject why exactly the answer has the valence is has.

This failure of transparency represents one of the core criticism raised against intuition as it questions the epistemic legitimacy of its use (for a detailed analysis cf. e.g. Pust (2012)). The position holding that intuition does not represent a reliable guide to truth is also shared by experimental philosophers, along with the claim that intuitions prove to be instable within an individual (Swain, Alexander, and Weinberg 2006) and differ between cultural and socio-economic groups of individuals (Weinberg, Nichols, and Stich 2001).

5.2.3.5 Memory

Memory is considered to be a source of knowledge in that it allows a subject to know something it knew in the past, even if the original justification is potentially no longer remembered (Truncellito 2007). As such, memory serves as knowledge depository for all the knowledge acquired at an earlier point of time, turning it into a knowledge source itself. The storage function is essential for the subject as at any given point in time, the majority of knowledge is only accessible from one's memory. Nevertheless, along with testimony (cf. chapter 5.2.3.6), memory is considered by the majority of epistemologists to be a nonbasic source as opposed to basic sources of knowledge that are characterized by them yielding knowledge without dependence on another source (Audi 2002). As nonbasic source, its functions consists in maintaining formerly acquired knowledge

(Dummett 1994) and it plays a preservative rather than generative role, according to Senor (2014) and Audi (2002).

This position is questioned by Lackey who argues that memory can function as a generative epistemic source (2005, 2007). The actual content remembered, however, does not necessarily have to be related to past events; it can equally involve present or future events (Steup 2012). As Bernecker (2011) or Sutton (2012) describe, the basic distinction with respect to memory contents (primarily stemming from psychology, but also applied in philosophy) is that between ‘declarative memory’, which extends to the content a subject can express, and ‘non-declarative memory’, which entails memories a subject can only demonstrate but not express. Declarative memory is again divided into semantic and episodic memory: The former refers to the store of general knowledge about the world, concepts, rules and language and can typically be accessed without referring to the specific events it was formed. In contrast to this, episodic memory “stores spatial and temporal landmarks that identify the particular time and place when an event occurred. It is accompanied by the experience of remembering, or mentally traveling back in time and re-experiencing the events” (Bernecker 2011:326).

The genuinely philosophical distinction differentiates memory into three kinds: experiential/personal memory, propositional/factual memory and practical/procedural memory. Experimental memory requires that the subject remembers the situation and has direct knowledge of what it was like in the form of qualitative experiences and imagery. Propositional memory is memory of facts or true propositions and extends to past, present, future and timeless truths. Practical memory refers to the habits and skills and amounts to remembering how to do something. (cf. e.g. Bernecker (2011); Sutton (2012)). Another approach to differentiating memory in philosophical terms is Russell's distinction between ‘knowledge by acquaintance’ and ‘knowledge by description’ that differentiates between experiential and propositional memory (for a critique of the latter cf. e.g. Bernecker (2011)).

The reliability of memory, however, is continually called into question, given its fallibility, which led philosopher to distinguish between remembering a fact and seeming to remember a fact (Steup 2012). Despite numerous attempts to validate memories as reliable information about the past, none of the strategies proposed seem to be tenable. It seems as though it is not possible to conclusively rely on memories and demonstrate the reliability of a given memory (Bernecker 2011).

5.2.3.6 Testimony

Another source of knowledge is testimony, i.e. the knowledge that is being transmitted from one individual to another. Testimony can be thought of as an “intentional transfer of a belief from one person to another” (Pritchard 2004:326) or as learning things through being told them or through reading them. In this vein, scholars as Lipton (1998), Fricker (2004) or Lackey (2006) argue that as a matter of fact, human knowledge depends to a high degree on testimony and thereby on the word of others. It relies on others to acquire knowledge and transfer it to others, which points to both the ubiquity and the collective nature of the societal enterprise of knowledge acquisition. Regarding the content of testimony, it refers on the one hand to events before one's lifespan or outside one's immediate neighborhood. On the other hand, as stressed by Lipton (1998), it also includes mundane beliefs, personal facts about oneself (such as e.g. one's date of birth) and even substantial part of science where theories as much as experimental results are believed and expected to be reliably verified by third parties.

The transfer of knowledge in the form of a testimony can be oral or written or in the form of signals. Testimony is usually said to share a crucial characteristic with memory (cf. e.g Lackey (2005)). Apart from testimonial and memorial knowledge necessarily having to originate at a given point in time from something other than testimony (or memory respectively), testimony along with memory preserve the knowledge acquired beforehand. As memory, testimony is generally not considered to be a generative source of knowledge as the transmission of knowledge does not add genuinely new information to the knowledge base – a view rejected by certain epistemologists such as Graham (2006) or Lackey (2006).

With issues concerning epistemology having become increasingly discussed in academia, a controversy emerged with respect to whether testimony can be an autonomous, distinctive source of epistemic authority and, as such, of knowledge. O’Brien describes that some deny this and claim that “to know something one must be able to reason through for oneself or perceive it oneself” (2006:5). The so-called inferentialists argue that beliefs acquired through testimony need to be verified to become knowledge with the justification mainly being derived from perception and inductive reasoning. In contrast, non-inferentialists stress that there is no necessity to being able to work through a given issue, even if the ability to do so is given as the latter does not have any justificatory role (cf. e.g. Adler (2014); O’Brien (2006); Pritchard (2004)).

The debate on inferentialism vs. non-inferentialism is related to another debate, namely whether testimony represents a basic source of knowledge. For inferentialists, testimonial knowledge cannot be basic as its justification is derived from perceptual, memorial and inferential resources. This position, usually called reductionist, argues that a person who transmits knowledge via testimony presumably also acquired this knowledge through another source of knowledge, rendering testimony a nonbasic source (cf. e.g. Adler (2014); Green (Green 2014)). Some non-inferentialists reject this notion, while consenting to the idea that testimony may causally depend on perception and memory. Within the scope of this so-called non-reductionist position prominently featured by Coady (1973), there is no need for any epistemic dependence. Alike perception, testimony is considered a source of warrant in itself; under these premises, one does not need to have reasons for believing something, only an absence of grounds to doubt it.

5.2.3.7 Summary of the dimensions of 'knowledge' informed

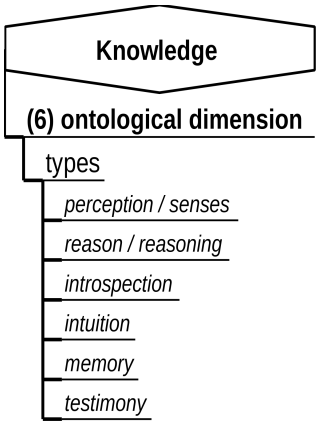

Illustration 12: Dimensions of knowledge informed by philosophy – sources of knowledge

Summarizing the chapter on the sources of knowledge displays a broad range of potential sources of knowledge including perception/senses, reason/reasoning, introspection, intuition, memory and testimony. As such, they inform and specify what in chapter 4.4.1 has been denoted as the (6) ontological dimension of knowledge (cf. illustration 12).

They represent different approaches to determining the origin of the knowable and are pivotal in two ways when it comes to characterizing the knowledge form in question: Not only do they specify what sources are considered to be reliable, they at the same time also make general statements as to which sources are considered unsatisfactory and thus need to be refuted to adhere to the inner logic of the respective knowledge form.

5.2.4 Summary of the philosophical foundations for 'knowledge'

This chapter focuses on summarizing the main insights from the epistemological approaches discussed above, next to identifying how these insights inform the fundamental dimensions of knowledge listed anticipatorily in chapter 4.4.1. As a matter of fact, the following four dimensions of knowledge[127] turned out to be addressed and informed in the epistemological literature considered here: the (1) epistemic, the (2) procedural,

[127] As outlined in chapter 5.1.4, the philosophical contributions do not lend themselves to informing 'understanding'.

the (6) ontological and the (7) legitimational dimensions of knowledge (for an overview cf. illustration 13).

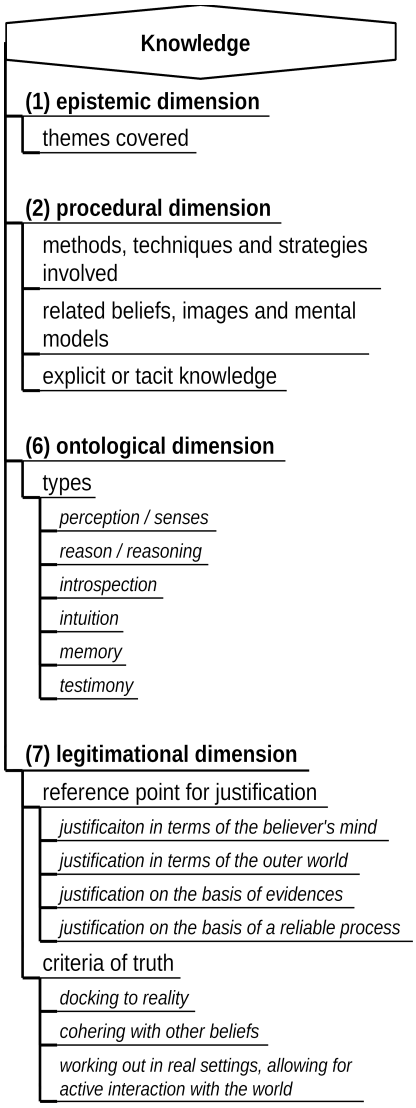

Illustration 13: Summary of all the dimensions of knowledge informed by philosophy

Discussing the two knowledge types of propositional and procedural knowledge in chapter 5.2.1 resulted in three insights: *First*, it led to differentiating between knowledge content and knowledge processes, which informed the intuitively postulated distinction between the (1) epistemic and the (2) procedural dimensions of knowledge. *Second*, with respect to procedural knowledge and next to the obviously crucial methods, strategies and mental models related to this knowledge type, the significance of its implicit part became apparent. This is due to implicit aspects often evading being put into words, which can have a significant impact on e.g. knowledge transmission. *Third*, discussing the Gettier case in the context of propositional knowledge resulted in the insight into the pivotal importance of the justificatory element. It not only grounds specific factual information and thus knowledge content, but also informs the (7) legitimational dimension of knowledge suggested earlier. In this context, four ways have been derived from the literature as to how the justification of knowledge content can be questioned, i.e. (a) in terms of the believer's mind, (b) in terms of the outer world, (c) on the basis of evidences or (d) on the basis of a reliable process.

The second chapter 5.2.2 took up and broadened the discussion of the (7) legitimational dimension of knowledge, outlining the differing approaches to truth by defining criteria for the validity of knowledge or so-called criteria of truth. It has been shown that the different approaches to truth resulted in different modes of justifying knowledge: Correspondence approaches to truth rest on the idea of docking to reality or matching the outer world; coherence approaches rely on a coherence of knowledge with an already established set of beliefs and mental models and consensus approaches take a pragmatic stance and consider to be true what works out in the actual interaction in the context of real settings.

Outlining the various sources of knowledge in chapter 5.2.3 resulted in informing a third dimension of knowledge, the (6) ontological dimension. This dimension encompasses the different approaches to establishing sources of the knowable considered acceptable, including perception/senses, reason/reasoning, introspection, intuition, memory and testimony. However, what exactly is considered 'acceptable' is highly dependent on the cultural context, turning the sources of knowledge into a pivotal characteristic in understanding any knowledge form.

5.3 Sociological foundations

In contrast to the philosophical approach to knowledge focusing primarily on the individual and an adequate definition of knowledge with respect to concepts such as belief, truth and justification, the sociological approach takes quite a different and complementary stance: The functional differentiation between the disciplines results in sociology broadening the general concept of knowledge and establishing what can be termed as a radical “sociologization of knowledge” (Adolf 2010:61) in that knowledge is looked at as basis of social interaction and order. From this perspective, knowledge is not seen as absolute or, eventually, unambiguous. Rather, sociological theory stresses that there are multiple ways how meaning is generated and constituted, leaving the individual with the question of how to interpret situations and make sense of what is happening in the social world. In other words, knowledge is conceptualized as a social process determining and reproducing meaning as well as the societal balance of power while at the same time appertaining to the cultural reproduction of societal structures (Adolf 2010).

Including the sociological perspective into this research's core undertaking to analytically and categorially conceptualize knowledge, I discuss in the following chapters 5.3.1–5.3.3 three theoretical approaches that offer valuable insights complementing the philosophical ones, namely the respective contributions to the knowledge topic by Alfred Schutz, Erving Goffman and Pierre Bourdieu. The reasons for choosing these contributions over others stem from their distinct focus on identifying fundamental categories and structures relevant for the analysis of ‘knowledge’ and, to a lesser extent, of ‘understanding’[128]. Consequently, I expect these theoretical approaches to inform a number of the basic dimensions of knowledge and understanding as outlined in chapter 4.4, including for ‘knowledge’ the (1) epistemic dimension, the (3) actor-related dimension, the (4) dimension of social organization, the (5) contextual dimension, the (7) le-

[128] In chapter 1.3.2, I explain the differing roles of and valences attributed to ‘knowledge’ and ‘understanding’ in this project.

gitimational dimension and the (8) representational dimension. For ‘understanding’, I expect it to involve all dimensions, namely the (14) dimension of the uncertainty of gaining an adequate understanding, the (15) dimension of structural and organizational constraints influencing understanding and the (16) dimension of personal biases influencing understanding.

As far as the structure of this chapter is concerned, I begin with Schutz’s contribution (chapter 5.3.1), whereby I concentrate on two main aspects, namely his approach to knowledge as an inter-subjective construction of meaning (chapter 5.3.1.1), followed by a discussion of knowledge as an instrument for orientation in the so-called life-world (chapter 5.3.1.2). With respect to the second author, I outline Goffman’s concept of frames and related modulations as interpretational schemes for making sense of reality while simultaneously construing the reality (chapter 5.3.2.1), before discussing the special cases of so-called fabrications and frame errors that, along with the above mentioned modulations, contribute to constantly building up and constituting one's knowledge base (chapter 5.3.2.2). Finally, describing Bourdieu's contribution (chapter 5.3.3) to the debate on ‘knowledge’ entails first outlining three of well-established concepts of his – namely habitus, capital forms and fields (chapter 5.3.3.1) and their interlinkage with knowledge (chapter 5.3.3.2) – before discussing in a second step his meta-concept of reflexivity (chapter 5.3.3.3).

The specific approach is as follows: Each of the three chapters concludes with a summary of how the insights inform the basic dimensions of knowledge listed in chapter 4.4.1. For those authors that in addition contribute to informing the notion of ‘understanding’, a second summary is provided that describes how the respective theory grounds the dimensions of understanding (cf. chapter 4.4.3). Lastly, chapters 5.3.4 and 5.3.5 provide summaries condensing all the insights from sociology on ‘knowledge’ and ‘understanding’ respectively.

5.3.1 Alfred Schutz: Knowledge as intersubjective construction of meaning and as orientation in the life-world

While Schutz contributed in many ways to the foundation and development of social sciences in general, I concentrate in this research on discussing the aspects of his oeuvre that contribute to the broader debate on knowledge. *First*, I focus on knowledge as an inter-subjective process of creating sense and meaning, discussing the related processes of typification, relevances[129] and inter-subjective understanding (chapter

[129] Given that ‘relevances’ constitutes a central term in Bourdieu’s theory and is used in the plural form to underline the variety of forms of ‘relevance’, I use it despite it not having actual equivalent in English.

5.3.1.1). In a *second* step, I address knowledge in terms of its orientational function in the so-called life-world, outlining Schutz's life-world concept, the related idea of multiple realities and the stratification of the life-world, his notion of the subjective and social stocks of knowledge and his insights into the social distribution of knowledge in societies (chapter 5.3.1.2). The concluding *third* chapter 5.3.1.3 summarizes the insights and describes how they inform the fundamental dimensions of knowledge outlined in chapter 4.4.1.

5.3.1.1 Knowledge as inter-subjective construction of meaning

In contrast to the methodological position of positivism (Schnettler 2007) for which the facts of the world represent real objects, Schutz's phenomenological approach to reality conceptualizes the world as one of inter-subjectively construed meanings. This has implications for the perspective on knowledge itself: It is no longer seen as a stable and invariable set of facts to be uncovered, but as embedded into a web of meaning and interpretation and therefore constantly evolving and variable. In accordance with Weber, Schutz considers it to be the duty of sociology to reconstruct the subjectively intended meaning of the actor (Hitzler and Eberle 2003) that turns his/her behavior into action, as Weber (1978:4) argued. Aiming at reconciling the scientific objectivity characteristic for natural sciences (*'observation'*) with the subjective qualities of action ('*verstehen*'), Weber formulates the concept of 'ideal type' and two corresponding postulates of adequacy. In Schutz's view, however, Weber's approach was unable to sufficiently explain and consolidate the central aspect of intended meaning, which leads him to criticizing Weber for aborting the analysis of the social world prematurely by simply implying meaning without asking how it is being constituted in social interactions (Abels 2001). Correspondingly, Schutz's major publication from 1932, "Der sinnhafte Aufbau der sozialen Welt" (Schütz 2004) (literally "The Meaningful Construction of the Social World", in English published under the title "The Phenomenology of the Social World" (1967)) represents his answer to fill this gap and provide a philosophical foundation for Weber's sociology of understanding and the social sciences in general. In that vein, he investigates what he called the 'meaningful construction of the social world', specifying the concept of meaning by means of phenomenological analyses of its constitution.

Conceptualizing both action (i.e. Weber's prime category) and knowledge as phenomena of meaning, Schutz emphasizes that action and meaning (and as such knowledge) are intrinsically linked to each other. Thus, meaning[130] orients and guides action and represents the decisive factor turning behavior into action. As such, knowledge as crys-

[130] In this context, 'meaning' is conceptualized in the sense of 'intended meaning'.

tallized meaning is inherent and constitutive for action (Knoblauch 2005:142). Drawing on Husserl's phenomenology of consciousness, Schutz understands meaning as evolving through independent activity ('Eigentätigkeit') of one's consciousness. Consciousness (or the mind), as Schutz describes it following Husserl, is characterized by it being intentionally directed in various ways upon objects external to it (Overgaard and Zahavi 2009). Such an approach entails the question of how 'facts', 'the world' and 'reality' are being constituted and represented in one's consciousness.

According to Schutz, this constitution takes place primarily through the processes of typification and the establishing of relevances, both of which render the world practically manageable for the individual. In his conception, typifications are social types or categories through which one understands him-/herself and others (1962b:7–10). For Knoblauch, they resemble elementary forms of knowledge (2005). Instead of having to work out what every new encounter might signify, consciousness “structures itself around a set of similarities that are evoked when we come across something 'new'” (Lock and Strong 2010:38). People and objects appear as variations of the average expectations associated with a specific type. Only rarely do individuals experience situations as specific and unique without applying typifications. Notwithstanding these typifications, Dreher (2011) argues, there are for Schutz no types in general or as such, but only those modeled for solving a specific theoretical or practical problem. The origin for the formulation of types emerges from a particular problem at hand that needs answering. On this background, individuals create typifying constructs of objects and of their fellows' actions on the basis of experiences made in the past (Dreher 2011). However, these typifications are not primarily private; it is rather the case that many of them are shared by the vast majority of people in the same life-world. This results from people absorbing knowledge during socialization, including a wide range of predefined typifications that structure one’s world in the first place. Subsequent typifications, whether they are genuinely self-created or adopted externally, necessarily build on the basic typifications originally transmitted via socialization. This abstraction facilitates communication processes as typifications used and anticipated by all parties reciprocally build a solid basis for reaching a common understanding. As such, typifications as conceptualized by Schutz are a highly social phenomenon in that they not only structure the individual's world of experience, but also build the foundation enabling social interaction (Inglis and Thrope 2012:91–92).

Drawing on Husserl, Schutz differentiates between two types of anticipatory typifications or idealizations, i.e. those he labels as “and so forth and so on” and those he terms “I can do it again” (1971b:257–58): “The former idealization implies the assump-

tion, valid until counter-evidence appears, that what has been proven to be adequate knowledge so far will also stand the test in the future. The later idealization implies the assumption, valid until counter-evidence appears, that, in similar circumstances, I may bring about by my action a state of affairs similar to that I succeeded in producing by a previous similar action." (Schutz 1964b:286).

Typifications tend to remain rather stable. As long as one's typifications support one in attaining one's aims and objectives, Overgaard (2009) argues, they remain unchanged; only when they are repeatedly proven to be false does this background knowledge undergo revision. It is only taken for granted "until further notice" (Schutz 1962a:74).

These daily typifications, however, do not occur arbitrarily according to Schutz. Rather, they are grounded in a personal, albeit also socially influenced system of relevances. This system is hardly given any special consideration, he adds, regardless of it being a highly important principle of reality construction considering that relevances serve the actor in characterizing and understanding a given situation. In Schutz' view, one reason for the lack of such an in-depth consideration is that relevances come most prominently to light when the daily typifications prove problematic and require re-adjustment. Accordingly, he approaches the issue of relevance by means of three questions inquiring the issue and summarizing his research interest: „How does it happen that a problem arises at all, that is to say, how does it happen that that which has become questionable for us appears as worth being questioned? What is relevant for the solution of a problem? When does it appear to us as 'sufficiently solved' as far as our purposes are concerned so that we discontinue further investigations?" (Schutz 1975a:117)

By means of his theory of relevances, Schutz suggests an approach to conceptualizing how the ascription of relevance is constituted within an individual's consciousness on the basis of his deliberations on the "objectively given structure of the world and the subjectively experienced biographical situation" (Dreher 2011:498). He discriminates between three different ideal types of relevance (cf. below) and details two general systems of relevance according to which one's knowledge is structured. These two general systems of relevance include (1) imposed and (2) intrinsic relevances (1964a:92ff). The latter represent the outcome of one's chosen interests whereas imposed relevances do not stem from one's acts of discretion nor are they linked to the interests chosen by the individual; rather, one has to accept them the way they are without the possibility or power to modify them.

The three ideal types of relevance that are, according to Schutz, ideal in that they do not occur empirically in their pure expression, include (1) motivational relevances, (2) topical/thematic relevances and (3) interpretative relevances.

(1) Motivational relevance is oriented by an individual's interest in a specific situation at a particular time and notifies him/her of the specific situational elements that serve to define it according to the individual's interests (Schutz 1975a:123–24; Schutz and Luckmann 1973:208–22). In other words, one's interest defines which aspects of the world matter. Schutz thereby distinguishes between two types of motives, i.e. 'in-order-to'-motives (1967:86–91) and 'because'-motives (1967:91–96). The 'in-order-to'-motive refers essentially to the future, i.e. to what an actor designates as purpose he/she intends to achieve with a certain action. In contrast to and complementing this, the 'because'-motive refers to the agent's past and the circumstances that brought her/him to opt for the course of action chosen. Consequently, it appears only on reflection and refers to what has already been accomplished (Overgaard and Zahavi 2009; Zaner 1961).

(2) Thematical/topical relevance is characterized as attention or interest for a specific segment of reality. It is crucial in determining toward which topic an individual directs his/her conscious attention. In general, topics attire attention when they contrast against a background setting of familiar things. Accordingly, topical relevance occurs when things become controversial and therefore require re-consideration or when a situation in the real world does not quite correspond to a situation type available within one's stock of knowledge. This opens up the need for supplementary knowledge relevant and appropriate for the situational definition (Schutz 1975a:124–27; Schutz and Luckmann 1973:186–97).

(3) Interpretational relevance can be thought of as an extension of the thematic relevance determining the aspects of the thematic object considered relevant for the interpretation. Generally, not all of an object's aspects are relevant for its understanding. Interpretational relevance comes into play with respect to those relevances that are used for the eventual interpretation against the backdrop of the available stock of knowledge at hand (Schutz 1975a:127–29; Schutz and Luckmann 1973:197–208). This involves the preceding experiences that seem to share some traits with the new topic, thereby "provid[ing] a type under which the unfamiliar object may be subsumed" (Goettlich 2011:497), eventually leading to a typification process that renders further interpretation unnecessary.

As outlined above, 'typifications' and 'relevances' as means of constituting and representing 'facts', 'the world' and 'reality' in one's consciousness are no solitary undertaking, but to a high degree socially shaped and influenced. As Overgaard argues, the constitution of a meaningful social world is “obviously not the achievement of isolated individuals acting alone; most of our typical assumptions, expectations and prescriptions, indeed, are socially derived” (2009:93). This leads back to one of the core concerns (if not the fundamental one, cf. e.g. Zaner (1961)) Schutz worked on, i.e. the question of how people grasp the consciousness of others while living within their own stream of consciousness. The issues of so-called 'intersubjectivity' or 'understanding the other' directly follow from Weber's postulate to concentrate on meaning: For Schutz, next to the question of how meaning is constituted, it is equally vital to investigate how one is able to understand the meaning of somebody's else's actions (Eberle 1991).

In contrast to Husserl, however, Schutz does not locate the constitution of intersubjectivity and sociality in the individual structures of consciousness of a transcendental ego by conceptualizing intersubjectivity as a precognitive scheme of consciousness (Schnettler 2007). Rather, his approach to understanding the other follows a model that can be labeled as alterity (Knoblauch and Schnettler 2004). His 'general thesis of the alter ego' (Schutz 1962e:172–75) assumes that humans, given that they are always born into an already preexisting social world, take the existence of fellow humans for granted.[131] Without a doubt, he complements, they rest upon the assumption that these fellow humans are equipped with a consciousness which is thought of as stable and essentially similar. In Schutz’s own words, “I simply take it for granted that other men also exist in this my world, and indeed not only in a bodily manner [...] but rather as endowed with a consciousness that is essentially the same as mine. Thus, from the outset, my life-world is not my private world but, rather, is intersubjective; the fundamental structure of its reality is that it is shared by us” (Schutz and Luckmann 1973:4). For Schutz, this unquestioned approach represents an idealization of everyday thinking. However, he does not posit the possibility of directly capturing other's contents of consciousness given the impenetrable subjectivity of consciousness (Schnettler 2007). Rather, the understanding of the other is only indirect in that it must rely on the interpretation of signs and indications. Therefore, every interpretation of meaning cannot amount to more than an approximation whose quality depends on the level of familiarity with the other (Hitzler and Eberle 2003).

[131] For a detailed account of the general thesis of the alter ego cf. Hitzler and Eberle (2003).

However, this inaccessibility does not equal to a fundamental impossibility of understanding each other. On the contrary, for Schutz, mutual understanding is grounded in an idealization based on a transference of similarity from ego to alter ego, which amounts to a pragmatic attribution – pragmatic regarding the need for communication in everyday life (Zaner 1961).[132] This transference, in turn, entails a number of related acts of consciousness, namely the overt assumption of the reciprocity of perspectives and the two related idealizations, i.e. the interchangeability of standpoints and the congruency of the systems of relevance (Schutz 1962f:315–16) (for a detailed account cf. e.g. Zaner (1961)). In other words, Schutz conceptualizes intersubjectivity as "a fundamental ontological category of human existence" (Schutz 1975b:82) and considers it to be the premise of any human existence along with the related overt assumption to understand and share standpoints, relevances and motives of the other (Dreher 2011).

5.3.1.2 Knowledge as orientation in the life-world

In his attempt to show what it is that makes the everyday world and, thus, understanding possible, Schutz elaborates on the concept of the life-world. He thereby builds on the Husserlian elucidation of the life-world, however with a difference. While Husserl was guided by an interest in philosophical and epistemological aspects of the life-world in the frame of transcendental philosophy, Schutz re-orients the concept to render it applicable to the realm of social sciences. For Schutz, the life-world is the world customarily taken for granted, the pre-scientific and experientially given 'common-sense reality' one is familiar with and does not question (1971a:153). It is the world as it is lived by ordinary individuals (cf. e.g. Eberle (1991); Overgaard and Zahavi (2009)). Such ways of apprehending one's environment commonly appear so familiar and natural that one never halts to reflect on them. One takes them for granted without questioning their validity or examining them in-depth, Schutz argues (1962c:74–76). Rather, one assumes three types of constancy, namely of the structure of the world, of the validity of our experience of the world and of one's ability to act upon the world and within it (Schütz 1971a:153).

Like Husserl, Schutz labels this unquestioning and uncritical attitude to one's environment as "natural attitude" (1962d:208–9). In the state of natural attitude, the entire complex of practical knowledge or 'know-how' remains very much in the background and functions as a tool that is taken for granted and employed immediately to navigate the life-world and pursue one's goals.

[132] By means of the transference of similarity, he distances himself not only from what Schnettler (2007) paraphrases as 'projective theories of empathy/sensitivity' discussed at Schutz's time, but also from Husserl's attempt to tackle the problem of intersubjectivity by resorting to transcendental philosophy.

However, in Schutz's conception, the life-world and everyday life are not identical (Honer 1993). Rather, he conceptualizes the idea of the life-world much more broadly, for it to include “all modifications of attitude and alertness, in other words, every tension within consciousness present in the normal adult” (Dreher 2003:143). He therefore postulates the existence of multiple so-called ‘provinces of meaning’ in human existence. According to him, one experiences the life-world structuring one's experience as encompassing various independent and relatively specific realities or provinces of meaning that provide experiences consistent in themselves. The realities comprised in this subjectively centered life-world extend to the world of dreams, of imageries and phantasms, the play world of the child, the world of religious experience, the world of scientific contemplation, the world of art and the world of the insane (Schutz 1962d:226–59). These worlds are, Schnettler (2007) and Dreher (2011) summarize, distinguished from each other by a specific tension within consciousness and a characteristic structure of alertness and self-awareness, a specific form of sociality, a peculiar cognitive style and a specific time perspective.

Among these provinces, Schutz attributes a special position and status to everyday life that he designates as “paramount reality” (Schutz 1962d:226–29). It is among others characterized by a state of a wakefulness and general attention to the outer reality, the ability to act and impact, a specific self-awareness and time-perspective and, importantly, by sociality; as such it is of special relevance for constructing social reality. Next to paramount reality being the region in which one spends most of one’s live, the special status is due to the “fact that each of the other regions, or limited ‘realities’, is a modification of the life-world. The ‘realities’ of science and of dreams, for example, are regions that one enters by ‘bracketing’ or ‘switching off’ in some way the quotidian life-world; and to that extent they both fundamentally presuppose the reality of the life-world” (Overgaard and Zahavi (2009:7), referring to Schutz (1962d:231–33)). Relating to Husserl, Schutz employs the term 'epoché' for such a ‘switching off’. According to him, when dreaming, for example, one performs an epoché on the principles and laws that oversee and manage the identities of places and persons in everyday world (Overgaard and Zahavi 2009).

Concerning everyday life, Schutz focuses on specifying and analyzing the essential structures of the life-world (Honer 1993) that is marked by a fundamental multiplicity – the multiplicity of worlds of experience described above, but also a multiplicity of structures. The social environment, he outlines, is experienced by each individual as structured in ‘strata’ or ‘layers’ around him-/herself with “the individual as the centre” (Overgaard and Zahavi 2009:102). This stratification of the life-world has a spatial and a tem-

poral dimension that are interlinked and fundamentally shaped by the respective characteristic and inherent social interactions.

Concerning the spatial dimension, Schutz differentiates between two spheres, namely with respect to a) an individual's sphere of influence as well as b) the spatial presence of one's fellow human beings and the extent to which the actions of others are accessible. He distinguishes between a social reality that is directly experienced and one that surpasses the horizon of direct experience, stratifying the life-world into a 'world within actual reach' (Schütz and Luckmann 1975:54–55) and a 'world within potential reach' (1975:55–58). The 'sphere of the here and now' is the most immediate one and is vital in forming the basis for the face-to-face relationships and encounters that Schutz places in a privileged position among the social experiences. According to him, the immediacy of such face-to-face interactions and the presence of ego and alter ego in the same place allow for a direct reciprocal reaction on social action and on conversational issues. This, he argues, increases the likelihood of mutual understanding given the possibility of communicative feedback.

With respect to both the spatial and temporal dimension, he identifies four sub-worlds and divides the types of people an individual is interacting and dealing with into four distinct categories, detailing the respective effects on intersubjective understanding and communication (Schutz 1975a:117–19). *'Umwelt'* is the only category related to the reality of direct experience (cf. preceding section on the spatial dimension) and is populated by what Schutz calls 'consociates' or 'fellow-men' inhabiting and sharing “a community of space and a community of time” (Zhao 2004:91). The remaining three sub-worlds evade direct experience and perception. From the perspective of an individual, the sub-world following the '*Umwelt*' is called *'Mitwelt'* and includes the world of one's contemporaries. While these contemporaries do not share a community of space, they still share a community of time and thus have till potentially the option of becoming each other’s consociates. Schutz's interest is in picturing “the transition from direct to indirect experience […] as two poles between which stretches a continuous series of experiences” (Schutz 1967:177). Among others, he studies how intimate face-to-face relationships differ from distant and impersonal relationships and explores the related increase in anonymity, amounting to what he denotes as the progressive anonymization of the *'Mitwelt'*: “The farther out we get into the world of contemporaries, the more anonymous its inhabitants become” (Schutz 1967:181), up to the most anonymous of all, i.e. artifacts evidencing the subjective meaning-context of some unknown individual. Next to *'Umwelt'* and *'Mitwelt'*, the remaining two sub-worlds are called *'Vorwelt'* (Schutz and Luckmann 1973:87–92) and *'Folgewelt'* (Schutz and Luckmann

1973:92) and encompass the world of one's predecessors (*'Vorwelt'*) or one's successors (*'Folgewelt'*), representing past and future respectively.

Furthermore, with respect to the temporal dimension, Schutz argues that both the social and the physical world existed before one's birth and will continue to do so after one's death. He emphasizes the dialectical relationship between the way people create social reality and the obdurate and potentially constraining social reality manifested in the preexisting social and cultural structures created by their predecessors (Schutz 1962d:208).

In addition to the spatial and temporal stratification that structure the life-world, the orientation in it is guided with recourse to what Schutz calls the 'subjective stock of knowledge' that, in turn, is related to the so-called 'social stock of knowledge'. According to Schutz and Luckman[133], the subjective stock of knowledge is composed of four elements: (1) basic elements of knowledge (1973:135–37), (2) routine knowledge (1973:105–11), (3) explicit knowledge (1973:264–77) and (4) potential knowledge (1973:176–78). These four types are briefly described in the following.

(1) Basic elements of knowledge are inherent to every experience and relate to the limitation of the given situation and the irrefutable conditions of subjective experiences (Honer 1993:16). *(2) Routine knowledge* cannot be strictly delineated from the basic elements of knowledge and is again sub-divided into (a) 'skills', which denotes what could be called 'incorporated knowledge', i.e. the capability to walk, swim etc., (b) 'practical knowledge', which describes habitual patterns that, although once learned, are performed automatically to the extent that the individual does no longer perceive them as an action, i.e. the capability to read and (c) 'recipe knowledge', which entails automatized knowledge elements adopted from others such as e.g. translation phrases[134]. *(3) Explicit knowledge* is usually the part of the subjective stock of knowledge that is consciously known and denoted as knowledge by the individual. The expression 'explicit', however, is somewhat problematic as it veils that all explicit knowledge contains significant proportions of implicit knowledge in the form of basic elements of knowledge and routine knowledge (Knoblauch 2005). *(4) Potential knowledge* can refer to elements of the routine and to explicit knowledge (usually not to basic elements of knowledge though) and is differentiated into 'recoverable knowledge', which existed at an earlier

[133] An elaborate discussion of the subjective and social stocks of knowledge is found in chapter 4 of "Structures of the life-world" (1973), edited and completed by Luckman after Schutz's death. Chapter 4 was not in Schutz's original draft, but was added by Luckman to elaborate on this topic (Chew 2009). It is, however, generally assumed that the chapter reflects the framework, the main ideas and the general tendency as originally intended by Schutz.

[134] The examples for the different sub-types of routine knowledge are adopted from Knoblauch (2005).

point of time, but has been lost or covered up and in 'acquirable ('new') knowledge' (for a detailed account cf. Honer (1993)).

The subjective stock of knowledge is socially conditioned and by no means strictly delineated from the social stock of knowledge; rather, subjective knowledge is being incorporated into the social stock of knowledge, which in turn also influences the subjective stock. Overgaard specifies in this context that one's “background knowledge, implicit assumptions, expectations and so on” do not primarily belong to oneself in the sense of one's “own personal and unique constructions” (2009:107). Rather, they result from the very beginning from a social construction. This perspective underlines the social genesis of knowledge, which is linked to it being transmitted through others who in turn also were taught it at earlier points of time.

On a more fundamental level and following William James, Schutz differentiates between 'knowledge by acquaintance' and 'knowledge about' to outline the differences in depths and detail – or in granularity – with respect to the respective knowledge body (Schutz 1975a:120–21). For Schutz, 'knowledge about' denotes the relatively small part (on average) of one's knowledge that is clear, consistent and thorough and that amounts to what could be called 'expert knowledge'. In contrast to this, 'knowledge by acquaintance', which encompasses the major part of one's knowledge of the life-world is more superficial in that it “only concerns the what and leaves the how unquestioned” (Schutz 1975a:120). According to him, these two realms are enclosed by “dimensions of mere belief that are graded in various expressions as to well-foundedness, plausibility, likelihood, reliance upon authority, blind acceptance, and complete ignorance” (Schutz 1975a:120–21). Together with 'knowledge by acquaintance', these dimensions form the realm of the unquestioned, of the “taken for granted” (Schutz 1975a:121). Schutz claims that all these knowledge dimensions of the life-world constantly change throughout the social structure, i.e. from individual to individual, from individual to the social group, for the group itself and from one group to another. What is known, familiar, believed and unknown is not a stable, but a relative entity. While in the case of the individual, it depends on his/her biographical situation, for the social group it is relative to its historical situation (Dreher 2011).

As for the social stock of knowledge of a culture or sub-culture, Schutz and Luckmann (cf. footnote 133) distinguish between two forms: (1) generalized knowledge that is relatively stable, relevant for all members of a culture and transmitted from everybody to anybody. In contrast to this, (2) specialized knowledge is only relevant for certain members of a (sub-) culture in certain contexts, is commonly rather circuitous, at times

needs to be acquired from special knowledge transmitters and is relatively systematized in comparison to generalized knowledge. The more such a systematization increases, the more a delimited, independent field of knowledge governed by an own 'logic' evolves, along with a related methodology and pedagogy (Schutz and Luckmann 1973:261–326).

5.3.1.3 Summary of the dimensions of 'knowledge' informed

Against the backdrop of elaborating conceptual-analytical categories for comprehending knowledge, Schutz provides a number of insights to be taken into consideration in regard to 'knowledge' (cf. illustration 14)[135]. On a general level, his phenomenological approach is characterized by a primary interest in and concern with everyday life, i.e. the ordinary, mundane contexts of people's lives. On this basis his approach stresses the idea of practical consciousness that he deems indispensable for understanding people's daily lives and activities.

In addition to this general statement, Schutz's theory also contributes to specifically informing a number of basic dimensions of knowledge anticipatorily described in chapter 4.4.1, namely the (3) actor-related dimension of knowledge, the (4) dimension of the social organization of knowledge, the (5) contextual dimension of knowledge and, lastly, the (7) legitimational dimension of knowledge.

First, with respect to the (3) actor-related dimension of knowledge, Schutz introduces the distinction between the social and the subjective stocks of knowledge. The former is divided into 'generalized knowledge', shared by the majority of people, and 'specialized knowledge' that is at the same time much more detailed and less widespread. In Schutz's understanding, the subjective stock of knowledge is split into 'basic elements' and 'routine knowledge', which largely evade a conscious approach, 'explicit knowledge', which can be put into words and thus be transmitted and, lastly, 'potential knowledge', denoting knowledge that has either been acquired earlier and forgotten meanwhile or has not yet been acquired at all. Moreover, in addition to discerning between the social and subjective stocks of knowledge, Schutz contributes to informing the actor-related dimension by describing the actor's depth or granularity of knowledge. In this respect, he discerns between (a) 'knowledge about', which constitutes the clear, consistent and thorough part of one's knowledge body (in other contexts also called 'expert knowledge'), (b) 'knowledge by acquaintance', standing for the major part of one's knowledge, which is taken for granted, rather superficial and only concerned with facts, leaving out the reasons and motivations and (c) 'dimensions of mere belief',

[135] As the analysis showed, Schutz focuses on 'knowledge' and does not contribute to informing 'understanding'.

which encompasses everything from plausible beliefs to expressions of complete ignorance.

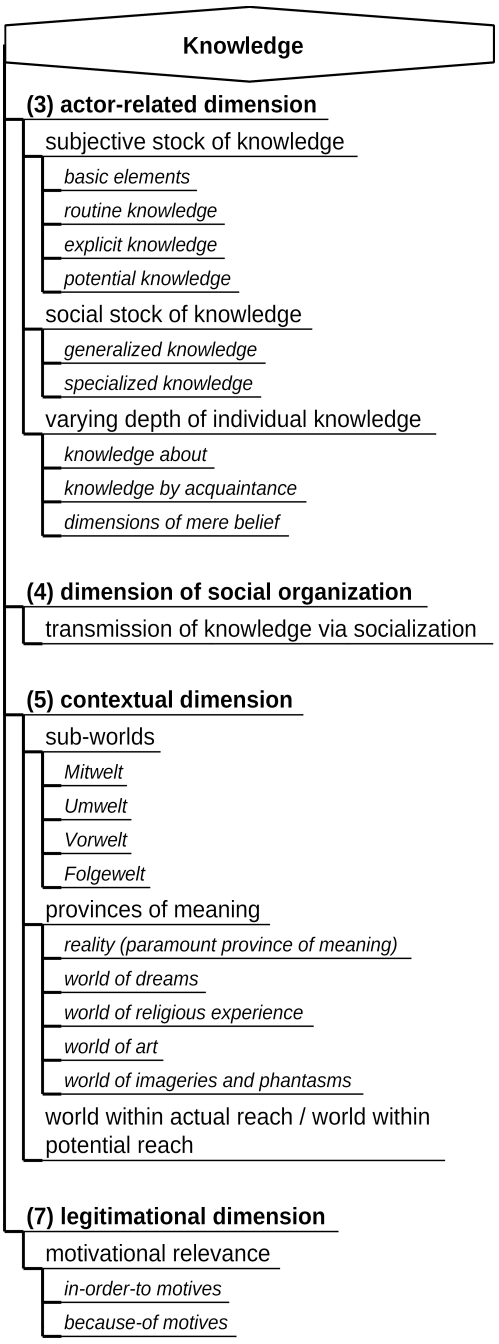

Illustration 14: Dimensions of knowledge informed by sociology – Schutz

Second, Schutz's theory also contributes to informing the (4) dimension of social organization of knowledge in emphasizing the role of socialization for knowledge transmission. *Third*, as far as the (5) contextual dimension of knowledge is concerned, Schutz provides its substantiation by distilling fundamental categories characterizing the basic construction and stratification of all life-worlds that prepare the ground for subsequently examining a specific particular life-world. These categories include the idea of a set of various 'provinces of meaning' with reality being the paramount reference point, next to other provinces such as e.g. the world of dreams, the world of religious experience or the world of art. Another category suggested by Schutz and characterizing the contextual dimension of knowledge is the concept of four sub-worlds, namely of the so-called 'Mitwelt', 'Umwelt', 'Vorwelt' and 'Folgewelt'.

While 'Vorwelt' describes the world before one's birth and 'Folgewelt' the one after one's lifespan, 'Mitwelt' and 'Umwelt' are best illustrated by another conceptual pair: The 'world within actual reach' describes the directly experienced 'Mitwelt' and implies a shared community of space and time. In contrast to this, the 'world within potential reach' depicts what Schutz calls 'Umwelt'. This realm entails a social reality that surpasses the horizon of direct experience and therefore only encompasses a community of time, in addition to the potential of a future community of space.

Forth and finally, Schutz's theory also informs the (7) legitimational dimension of knowledge by detailing his concept of motivational relevances into so-called 'in-order-to motives' and 'because-of motives': The former are directed towards the future and refer to the purpose an actor intends to see fulfilled with a certain action; contrasting this, the latter refer to an actor's past and explain the circumstances that form the basis and the rationale for his/her current action.

5.3.2 Erving Goffman: Knowledge and frames

With the aim of identifying conceptual-analytical categories describing 'knowledge' and – to a lesser extent – 'understanding', I focus on specific aspects of Goffman's extensive oeuvre. In a first step, this involves outlining his concept of 'frames' as interpretational schemes for making sense of reality and building up one's knowledge of the world (chapter 5.3.2.1). In a second step, I describe the various 'modulations' of these frames as well as the diverse errors that can occur in the process of framing (chapter 5.3.2.2).[136] Concluding chapter 5.3.2.3 recapitulates these insights and explicates how they inform the fundamental dimensions of knowledge and understanding anticipatorily outlined in chapters 4.4.1 and 4.4.3 respectively.

5.3.2.1 Concept of frames

Building on the work of inter alia Schutz and Bateson, Goffman is particularly interested in understanding the observable, everyday behavior in the frame of what he called 'interaction order'. He focuses on investigating how people make sense of their reality, thereby building up their knowledge of the world. In contrast to Schutz, Goffman is not interested in the ways these schemes of experience – or 'frames', as he calls them – evolved and how the individual generates meaning (Eberle 1991). Rather, he concentrates on the situational application of these frames and the content-related arrangement. In addition, he rejects Schutz's notion of everyday life as 'paramount reality' (cf. chapter 5.3.1.2), denying the world of senses a special status and dismissing that any one of the possible worlds is more real than the others.

Based on a variety of qualitative methods and parting from the assumption that to understand events and situations people try to classify whatever they experience in their personal schemes or frames, he proposes a differentiated system of terms and concepts to systematize how understanding and knowledge building is structured. This ap-

[136] The reference publications by Goffman considered are "Frame Analysis" (1974) and "Gender Advertisements" (1979).

proach, as Lenz (1991) suggests, can be viewed as an attempt to overcome the one-sidedness of an either interpretative or structural perspective by combining the two.

In the context of “Frame Analysis” (1974), Goffman studies how people apply diversified frameworks to make sense of situations while simultaneously constructing those events. Recurring to Schutz, Goffman argues that one perceives everyday life spontaneously and in “natural attitude” (Schutz 1962d:208–9) as reality – a reality that is not a private world, but one shared with fellow human beings (Hettlage 1991). This reality is not questioned in terms of its practical manageability; one relies on proven schemes of experience and the related knowledge stock, assuming that the things are they way they present themselves as long as practical experiences do not indicate otherwise – a notion that Schutz labels as idealization of the “and so forth and so on” (1971b:258) (cf. chapter 5.3.1.1). However, since social reality is much more complex and ambiguous than the world of immovable objects, the idealization of 'and so forth and so on' has a tendency of turning out to be little reliable. In this respect, Goffman considers constant framing indispensable and argues that events and situations cannot be meaningfully grasped without an adequate frame. Against this backdrop, “Frame Analysis” starts with the individual who, confronted with any given situation, asks him-/herself what is actually going on and looks for patterns to classify and understand the situation. However, such a classification is by no means self-evident due to the inherent complexity and ambiguity of social interactions. Given that they remain fragile entities, order and predictability cannot be assumed and normality is potentially at risk at any given moment.

According to Goffman, cultures develop frameworks that transpose “what would otherwise be a meaningless aspect of the scene into something that is meaningful” (Goffman 1974:21) by means of suggesting a conceptual structure through which people can process information. For Goffman, these frameworks represent experiential schemes internalized during socialization whose functions consist in supporting people in identifying, defining and understanding situations and events of all kinds. As such, a frame is a manner of organizing experience; it is, as Fine and Manning specify, “one of the means whereby people identify the kind of activity that is taking place” (2000:53). According to Goffman, frames contain culture-specific expectations with respect to the environment the situation is taking place, with respect to the people involved and their behavior and, lastly, with respect to the degree of involvement adequate to the given situation. As these frames are seen as part of the fundamental elements that constitute any culture, the members of the respective cultures consider them as natural and ensuring everyday normality without much thought about it. In other words, frames are not applied consciously, but are experienced primordially. Next to safeguarding an idea of

normality, Goffman (1974) stresses, they generate the insinuation that whatever is taking place will fit in some way into the social stock of knowledge. In addition, as much as frames assist in understanding the world, they influence one's perception of it in that impressions have a tendency of being manipulated such that they justify one's interpretation of a given situation.

In terms of the conceptual genesis, Goffman did not originate the concept of frames; rather, it was first introduced by Gregory Bateson in his article “A theory of play and fantasy” (1955)[137] for the domain of communication. In his ethological studies, he observed interactions between monkeys and identified three types of signals: *first* so-called 'mood-signs', *second* 'messages, which simulate mood-signs' and, *third* the meta-communicative group of 'messages, which enable the receiver to discriminate between mood-signs and those other signs, which resemble them' – e.g. a sign indicating that something is meant as a play as opposed to a fight. According to Bateson, each of these meta-communicative messages, be they implicit or explicit, constitutes a frame, i.e. a psychological construct assisting the individual in making sense of what is happening. In his research, Bateson was foremost invested in understanding the role of psychiatry and attributed mental illnesses to communicative disorders, which led to him introducing the concept of frames in communication theory.

Being interested primarily in societal issues, Goffman transfers the concept to the more general domain of the organization of knowledge and experiences. Apart from this refocusing, he adopts Bateson's approach to the largest extents:

> “And of course much use will be made of Bateson's use of the term ‘frame’. I assume that definitions of a situation are built up in accordance with principles of organization which govern events – at least social ones – and our subjective involvement in them; frame is the word I use to refer to such of these basic elements as I am able to identify. That is my definition of frame. My phrase ‘frame analysis’ is a slogan to refer to the examination in these terms of the organization of experience.” (Goffman 1974:11)

Goffman labels the most original type of frame allowing for an ordered perception and understanding of the world as “primary framework” (1974:21–39). He suggests that each culture generates two types of primary frameworks – natural frameworks and social frameworks – to designate what is in fact happening in both the natural and social worlds. Natural frameworks result from “purely physical” (1974:22) experiences such as e.g. body temperature, black ice, seasons, blizzards or diseases. Individuals perceive this type of framework “to be due totally, from start to finish, to 'natural' determinants” (1974:22). Against this backdrop, Goffman claims that “success or failure in regard to

[137] It was first read out in 1954, published in 1955 and reprinted 1972 in the anthology “Steps to an Ecology of Mind”.

these events is not imaginable; no negative or positive sanctions are involved" (1974:22).

In contrast, social frameworks denote experiences that individuals relate to a willful human agent who has the power and desire to shape at least certain aspects of one's experience. In other words, social frameworks rise from the willful exertions of "an intelligence, a live agency, the chief one being the human being" (Goffman 1974:22). These frameworks (for which weather forecasts are an example) are of primary interest to Goffman.

Goffman stresses that primary frameworks of both types evolve along what Fisher called a 'continuum of systematization' (1997) consisting of frameworks that range from highly organized sets of rules to frameworks lacking any "apparent articulated shape, providing only a lore of understanding" (Goffman 1974:21). Regardless of the diversity of frameworks in terms of their level of systematization, Goffman underlines that all primary frameworks facilitate the location, identification and labeling of what he describes as "a seemingly infinite number of concrete occurrences defined in the terms of the primary framework" (1974:21) that is applied.

With respect to social frameworks, Goffman distinguishes between a number of forms that aid individuals in making sense of events, including (a) spatio-temporal/ceremonial frames, (b) facial frames, (c) conversational frames and (d) frames of gender.

(a) Spatio-temporal frames: According to Goffman spatio-temporal frames allow specific events within the stream of consciousness to turn into delineated 'pieces' or 'episodes' (1974:251–69). He calls such spatio-temporal frames "brackets" (1974:252). They serve to mark and delimit social events from the environment surrounding the event and/or mark the transition from one frame to another; as such they act as modulation signals. This delimitation can be temporal as well as spatial. In the form of opening and closing brackets they interlock 'pieces' with the surrounding while simultaneously underlining their 'interiorness' vis-à-vis the outer reality. Much alike picture frames, spatio-temporal frames do not exclusively belong to the very content of the 'episode' nor to the activities in the outside world (Hettlage 1991). Rather, they mediate between the two spheres by setting them into a context. Examples for opening brackets include e.g. a foreword, a prologue, a title sequence of a movie or the attuning of musical instruments before the concert starts; for closing brackets, examples encompass the closing credits at the end of a film, 'saying goodbye' before finishing a day at the office or handing over flower bouquets at the end of a concert series. Next to these external brackets Goffman identifies internal brackets such as, inter alia, coffee breaks,

half-time breaks, rounds in certain sport events or scene changes in movies (1974:259–69). Whatever type the bracket is, its function always consists in providing identity to the performer and orientation for the participants by preparing them and steering their attention for whatever follows next.

These brackets display different degrees of systematization: While some do merely adhere to conventions such as e.g. a laughter, others represent highly ritualized actions, often meant to express one's respect in front of an object (or substitution thereof) deemed valuable (Hettlage 1991). Examples of these include fairness rules, the exchange of club flags in football or the handshake for the winner.

(b) Facial frames: Goffman describes facial expressions as another interpretational scheme (1974:349–59). He argues that faces are central when it comes to reacting to any given situation. By means of facial expressions, one has to display the engagement and attention that are considered culturally adequate to the given situation. During socialization, Goffman argues, one learns what kind of facial expressions are expected when being awarded a prize, attending a funeral or listening to a lecture. In other words, one is constantly asked to accompany the course of interactions facially; deviations are promptly noticed by the interaction partners and contribute to shaping the further development of the interaction.

(c) Conversational frames: One of the most formative frames discussed in detail by Goffman is the conversational frame (1974:496–559). He stresses that conversations are always interaction events: Next to giving an account of a fact or an experience, a speaker tells stories in that he/she acts out the scene, related experiences, inner states, opinions, attitudes etc. He/She thereby represents something to both the audience and him-/herself, aiming at evoking a sympathetic reaction from the listeners such as e.g. approval, praise, understanding or community. For this to happen, the speaker needs to consider basic dramaturgical rules. *First*, one must take care of producing and keeping up a certain tension in the story line, inter alia by means of ritualized hedgings such as e.g. the phrase 'Do you know what happened then?'. Goffman calls such hedgings “tickets” (1974:508), an expression he attributes to Harvey Sacks. *Second*, one needs to apply the above described brackets to clarify that, while re-enacting a situation, one is not identical with the person enacted. Systematic bracketing also helps to point to multiple meanings of words as well as to allusions, irony or fun. *Third*, one needs to integrate creative markings into the interaction to provide the audience with a background structure against which to guide the understanding. This happens by delineating between what is said and what is meant or between one's own actual opinion

and the displayed one. Such markings include intonation, affective gestures, dramatic pauses, smiles and other facial expressions framing the moment such as blinking or lifting one's eyebrows etc. These dramaturgical rules are bound by general cultural-specific rules that define specific aspects, e.g. how much imitation is permitted, according to which rules taboo expressions are censored and replaced or what gestures are generally considered acceptable.

d) Frames of gender: Another frame introduced by Goffman in his penultimate book “Gender Advertisement” (1979) is the gender-specific frame. By means of it, he demonstrates how people represent and enact their sexual identity. He claims that there are specific codes that can be applied to identify gender. Using advertising material, he identifies the culturally-laden strategies used to produce, represent and interpret role-related behavior. These strategies translate into codes of gender that he pinpoints in the distinct portrayals of both women and men in advertisements. The ways in which the sexes and their respective behaviors and mutual relationships are displayed is perceived by Goffman as an agreement aiming at visualizing the social reality of their relationship for each other as well as the related scopes for action for both sexes.

5.3.2.2 Modulations of frames and errors

Goffman argues that while the observation and consideration of the primary frames provides a valuable first impression, these insights do not bestow sufficiently reliable a ground to build one's perception of reality on. This is due to situations often not representing what they seem to at first sight or from judging from the primary framework encountered. It is e.g. common knowledge that not every punch amounts to a fight, but can be meant in a friendly, jokingly way or that questions regarding one's health in the context of greetings are not an invitation to dive into extensive accounts of one's current state of health. In order to account for secondary frameworks or, more precisely, for actions whose primary frames are not fully applied, but rather to a certain extent distorted or adapted, Goffman introduces the concept of 'modulations' or 'keyings' (1974:40–82). In contrast to primary frames that organize information with respect to real experiences, keyings imitate primary frameworks without fully duplicating them. Representing manifestations of secondary frameworks, they occur when the meaning of a situation or an event is transformed into something patterned on but independent of the initial primary frame. As prominently described by Bateson (1955) in the example of the playfully fighting monkeys, a modulation may e.g. convince one that what looks like a fight is in fact just play. Other examples of such modulations include 'acting-as-if', competitions/tournaments, ceremonies, stage plays, special performances, irony or

satire. In general, a modulation can itself be re-keyed, leading to nested layers of meaning. In this context, Goffman underlines that the process of keying – and even more of re-keying – is vulnerable (1974:159) and modulations as such remain a potentially risky undertaking as there is always the possibility of them not being recognized, resulting in failed interactions.

The reasons for humans to engage in keying primary frames are manifold. As Fisher (1997) outlines, keyed events (1) allow anticipating and practicing for potential future real performances (such as animals play-fighting, humans engaging in martial arts or children playing post office/family), (2) (re-)establish cultural knowledge by means of rituals, (3) enable reflection, analysis and review of real events, people and objects (as e.g. in art and fictional literature) and (4) bundle information into transferable commodities, i.e. into media articles, government reports or academic studies.

Next to these four functions of keying, there is a fifth function: Keys can also be used to deceive. Goffman calls this special type of modulations 'fabrications'. This term denotes intentional modulations of primary frames designed to mislead others. In contrast to modulations aiming at conveying the same picture to all participants of a given social interaction, fabrications create deceptions and thereby social differences as they divide the actors into well-informed and ill-informed parties. In the case of the deceivers being successful with their fabrication, they distort reality in their favor. If, however, their fabrication is uncovered, it influences the actors' reputation up to damaging it. The degree of influence or damage is related to the motivation underlying the fabrication. With respect to this moral judgment, Goffman distinguishes between two categories: On the one hand, there are “benign deceptions” (1974:87–103) or deceptions in good faith that are for the benefit of the participants as in the case of exercises taking place in an educational context, e.g. fire alarms or military alarm drills. These fabrications are benign in that they preserve the fundamental interests of the individuals involved. Once uncovered, the relationship between fabricator and recipient of the fabrication is not impaired. While it is likely that the individuals affected will meet subsequent framings by the same actors with more caution or suspicion in order to keep control over future situations, they consent with the occurred deception in good faith given that on a more fundamental level they do not see their interests harmed. On the other hand and in contrast to this, so-called “exploitative fabrications” (Goffman 1974:103–11) as e.g. intrigues are at the sole or at least overriding interest of the fabricator. In case of an uncovering, the damage to the fabricator's reputation can be considerable to devastating and potentially extend to legal consequences.

However, fabrications are only one possible instance how the attribution of meaning can be misleading. While one generally assumes that his/her frames of reference are suitable for understanding reality, on closer scrutiny one's concept of reality turns out to be much more precarious and in need of substantial backing. As Hettlage argues, “the permanent threat to our normality assumption is, in fact, the norm” (1991:143, translated from German by the author). Goffman is particularly interested in these threats to the normality assumption and explored different ways how they could occur, including what he calls ‘frame errors’, ‘frame disputes’, ‘frame breaks’ and ‘behavior outside the frame’. “Errors in framing” (1974:308–21) are, much alike deceptions, erroneous framings that, in contrast to fabrications, do not emerge from malice and do not expose the erring person. “Frame disputes” (1974:321–38) arise from the ambiguity of situations that led to differing interpretations. “Frame breaks” (1974:345–77) occur when specific actions are considered to be non-adequate to a given situation; such breaks are often caused when tensions are relieved, when one unwittingly stumbles into an inadequate behavior or when situations increasingly build up. Lastly, “behavior outside the frame” (1974:201–19) denotes behavior that is unrelated to whatever takes place within the main frame but occurs in parallel to it at the same place and time. Such behavior is, strictly speaking, not a frame break, but refers to actions outside and is often treated as incidental by the actors in the main frame. It is often either marked by specific articulations (such as eye contact or nodding in the case of e.g. a latecomer to a presentation) or gets completely ignored (as in the case of e.g. interjections during speeches of politicians).

5.3.2.3 Summary of the dimensions of ‘knowledge’ and ‘understanding’ informed

Summarizing Goffman's insights and relating them to the dimensions of knowledge and understanding outlined in chapters 4.4.1 and 4.4.3 shows that they contribute to informing three knowledge dimensions specifically – the (1) epistemic dimension, the (4) dimension of social organization and the (5) contextual dimension –, in addition to two dimensions of understanding, namely the (14) dimension of the uncertainty of gaining an adequate understanding and the (16) dimension of personal biases influencing understanding.

In terms of the **dimensions of knowledge** (cf. illustration 15), Goffman provides ample factual information as to how to conceptualize knowledge, thereby informing the (1) epistemic dimension of knowledge. By introducing and elaborating the concepts of primary frameworks (natural and social frameworks) and secondary frameworks as well

as their characteristic modulations or keyings, he contributes to detailing the concept of knowledge by providing guidelines on how to interpret and understand social situations. On the basis that everyday experiences represent the main ingredient in forming and establishing one's body of knowledge, Goffman focuses on the organization of the observable, i.e. everyday behavior. By describing how individuals apply frameworks to make sense of events while at the same time constructing them, he provides an analytical instrument for orientation in the social world. This meta-communicative device sets parameters for 'what is going on' and focuses on meaningfully decoding everyday experiences.

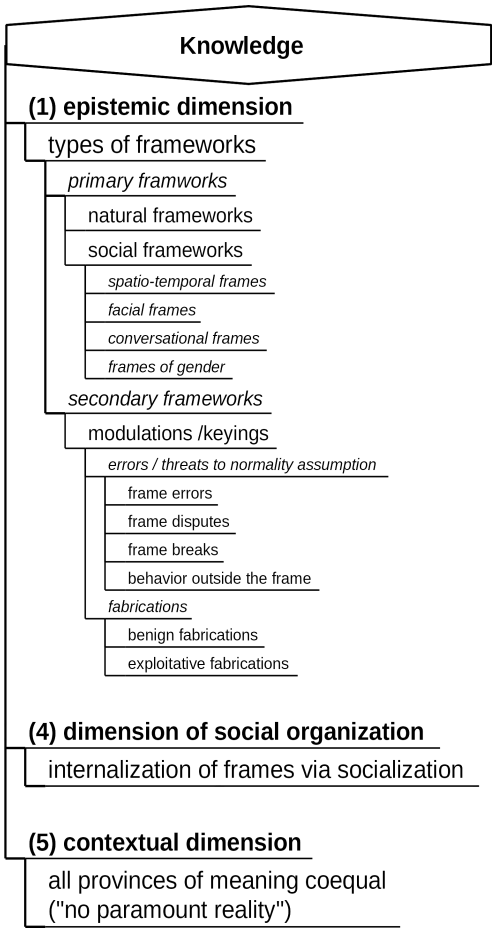

Illustration 15: Dimensions of knowledge informed by sociology – Goffman

As a matter of principle, the recognition of a given frame applied to a social situation and/or interaction is crucial in identifying it and making sense of it while at the same time providing the basis for adequate reaction.

In addition, Goffman stresses that the above mentioned frames are internalized during socialization, pointing to a crucial characteristic in terms of how knowledge is transmitted in a social community and, in doing so, contributing to informing the (4) dimension of the social organization of knowledge. Finally, Goffman's perspective also informs the (5) contextual dimension of knowledge in that it consents to Schutz's idea of the existence and relevance of multiple provinces or realms of meaning. In contrast to Schutz, however, Goffman claims that there is no ‘paramount reality’; rather, in his view, the diverse realms of life are equally relevant and dominant, leaving the everyday reality on par with other realms such as dreams, art or play.

With respect to the **dimensions of understanding** (cf. illustration 16), Goffman's contribution provides ample grounding for the (14) dimension of the uncertainty of gaining an adequate understanding. By introducing the notion of social frameworks and, especially, 'modulations' and 'keyings', he draws the attention to secondary frameworks that are intentionally used to mislead. He thereby underlines that any understanding can only be preliminary and represents an open-ended, potentially risky undertaking.

According to him, individuals applying interpretative frameworks are at the permanent risk of misinterpreting situations – as in the case of the above mentioned threats to the normality assumption including frame errors, disputes, breaks and behavior outside the frame – or of being deliberately deceived – as in the case of what Goffman calls 'fabrications', be they for benign or exploitative purposes.

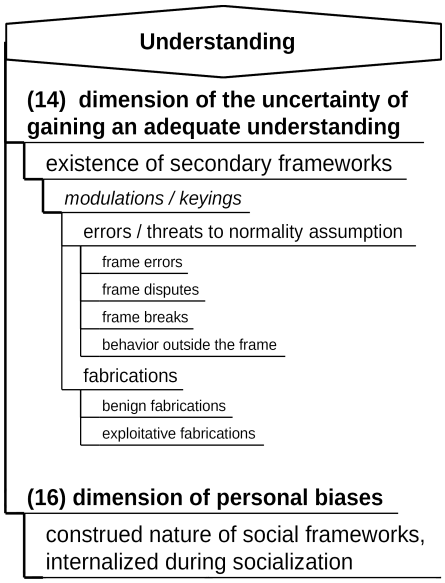

Illustration 16: Dimensions of understanding informed by sociology – Goffman

In addition, Goffman's approach also serves to inform the (16) dimension of personal biases influencing understanding in view of social frameworks being construed during socialization. This entails that they are, at least for the larger part, unconscious and therefore rather a bodily experience, which, in turn, renders them more susceptible to personal preferences and biases.

5.3.3 Pierre Bourdieu: Knowledge as disposition and resource in power struggles

Although playing an important role, knowledge does not represent one of his primordial concepts in Bourdieu's theorizing. His understanding of knowledge therefore needs to be inferred from his central notions, namely the concepts of 'habitus', 'field' and 'capital forms'. Against this backdrop I focus in chapter 5.3.3.1 in a first step on describing two of these key concepts of his – habitus and field –, their interlinkage as well as the role knowledge plays in these concepts. This allows discussing mechanisms that, in Bourdieu's understanding, structure knowledge while at the same time having a structuring effect on knowledge (Maasen 2008).

Knowledge, however, is not only situated in the interplay of habitus and field, i.e. in the interplay of incorporated structures and objectified facts, but also bears on ‘capital’ (Kajetzke 2008)[138], Bourdieu's third key concept. Both habitus and field are fundamentally shaped by the capital forms in stock while the respective habitus at the same time demarcates the very limits of what one can know at a given time in terms of the cultural and symbolic capitals at disposition (2008:12 / foreword by Dirk Kaesler). In view of this interrelationship, I outline in chapter 5.3.3.2 an additional aspect of Bourdieu's perspective on knowledge that crystallizes in the way how he conceptualizes cultural and symbolic capitals.

In a third step, I discuss Bourdieu’s meta-concept of reflexivity that centers on the *processes of actually understanding knowledge*, namely of taking into account the researcher's own knowledge, perspective, biases and subsequent limitations and their influence on the validity of his/her understanding of the social world (chapter 5.3.3.3). While this is true for any research situation, it is even more accentuated when it comes to research across epistemologies, as it is the case when trying to comprehend other knowledge forms. Consequently, these insights contribute to informing the dimensions of understanding (cf. chapter 4.4.3).

The concluding chapter 5.3.3.4 summarizes the main insights drawn from Bourdieu's theory that contribute to grounding and informing the dimensions of both ‘knowledge’ and ‘understanding’ as anticipatorily outlined in chapters 4.4.1 and 4.4.3.

5.3.3.1 The role of knowledge in Bourdieu's concepts of 'habitus' and 'field'

The three main elements constituting Bourdieu's theory – habitus, field and capital – are only analytically separable, as they are “designed to be put to work empirically in systematic fashion” (Bourdieu and Wacquant 1992b:96). Thus, habitus links the agent with the field, the structure of the field derives from the structure of capitals and the structure of capital determines the constitution of the habitus (Kajetzke 2008). In this chapter, I start by discussing the first two concepts, their interlinkage and the role knowledge plays in these concepts.

Concerning his research priority, Bourdieu is primarily interested in studying social structures and related power constellations to which he links the actors' perception, thinking and acting. Starting from his first publication “Outline of a theory of practice” (1977) he conceptualizes the character of the social world as an interaction between actor and structure and understands social structures as power relations, made visible

[138] Kajetzke's (2008) contribution in regard to Bourdieu's understanding of knowledge is formative for the structure of this chapter due to her innovative approach to discussing the issue from the perspective of sociology of knowledge.

in actions. The mechanism moderating between objective structures and actors is what Bourdieu calls *'habitus'*.[139]

Habitus is one of Bourdieu's landmark concepts in that it was crucial in his endeavor to resolve a longstanding antimony of the human sciences by establishing the position of a 'structuralistic constructivism' between the structuralistic objectivism[140] and the action-theoretical subjectivism[141] (Bourdieu 1987:147). He defines it as a system of "durable, transposable dispositions" (1990a:53) and of "practice-generating schemes" (1984:167) – in other words systems of acquired and lasting patterns of perception, knowledge and action. Individual agents develop such dispositions with regard to the objective conditions they encounter. By means of the habitus, Bourdieu construes the inculcation of objective social structures into the agents' subjective mental experience (Inglis and Thrope 2012). Once the objective social structures are absorbed into a personal set of cognitive and somatic dispositions, the agents' subjective structures of action are compatible with the demands of the social surrounding[142]. These structures are called 'doxa' and are the basis of what Bourdieu calls 'practical knowledge' (Maasen 2008:48). Doxa describe elementary, learned and deep-founded beliefs, values and principles of classification and hierarchization[143], taken as unquestionable universals that advise the actors' actions and thoughts within a particular social field. Through this doxic view, the social world as it appears is taken for granted and seems natural and commonsensical. For Bourdieu, doxa is "the coincidence of the objective structures and the internalised structures which provides the illusion of immediate understanding, characteristic of practical experience" (1990a:20). These categories of knowledge, understanding and perception have a tendency to endorse and privilege the particular dominant social arrangement of a given field, resulting in the past tending to perpetuate itself into the future. This tendency to reproduce the very structures of the field as well

---

139 In his elaboration of the concept, Bourdieu builds on the work of a number of predecessors. The idea was originally introduced by Aristotle under the notion of 'hexis', was later re-worked and translated into Latin by Thomas Aquinas as 'habitus' and discussed by a number of social theorists including Norbert Elias, Max Weber, Edmund Husserl, Marcel Mauss, Maurice Merlau-Ponty and Erwin Panofsky (Knoblauch 2005; Schwingel 2000).

140 In his critique of structuralism and, inter alia, Claude Lévi-Strauss' and Ferdinand de Saussure's approaches, Bourdieu aims at their mission to understand relationships independent of the agents' consciousness and will (Bourdieu 1987). He criticizes the projection of scientific models on social groups and demands that studies start from everyday actions and activities, arguing that the objective structures only reveal themselves in concrete daily practice (Steiner 2001).

141 Inter alia, Bourdieu subsumes the phenomenological approach by Alfred Schutz as well as the approach by Erving Goffman (which is often labeled as 'interactionistic') under subjectivism. According to Steiner (2001), he rejects the phenomenological notion that focuses on the common sense of agents and their freedom of action and of will, arguing that action is no expression of free will. While he agrees to the central role of mundane knowledge postulated by subjectivism, he claims that for sociology to understand objective relations such as power structures or reproduction mechanisms, it is indispensable to let go of the idea of individual self-determination and free will and instead look for the objective structures hidden in the mundane knowledge of agents and expressed in their sociocultural practice.

142 In Bourdieu's terminology, the social surrounding is called social 'field' (cf. below).

143 'Doxa' are similar to what Schutz calls 'natural attitude' (cf. chapter 5.3.1.2).

as related similarly structured practices is called the ‘hysteresis-effect’ and functions as the impetus to protect oneself from questioning and crises (Knoblauch 2003:190).[144]

An essential characteristic of the habitus according to Bourdieu is its embodiment or incorporation and its largely unconscious nature (M. Adams 2006; Bonz 2006; Houben 2013). Habitus forms corporal dispositions, as Knoblauch (2005) emphasizes. The embodied internal structures defining the habitus are not primarily located at the level of the explicit, discursive consciousness, but rather turn into the individuals' second nature and function in a practical and frequently pre-reflexive way: “The principles embodied in this way are placed beyond the grasp of consciousness, and hence cannot be touched by voluntary, deliberate transformation, cannot even be made explicit; nothing seems more ineffable, more incommunicable, more inimitable, and therefore, more precious, than the values given body, made body [...]” (Bourdieu 1977:94). The habitus is ingrained to the extent that it is often mistaken as natural instead of culturally developed, Bourdieu argues. This results in it being used for justifying and reproducing social inequalities due to the belief that some individuals have a natural disposition to finer things and behaviors than others – a notion that is strongly supported by the educational system (Bourdieu 1966).

In Bourdieu's understanding, habitus is not a result of one's own conscious making, but is adopted through upbringing and education (Bonz 2006). It is transmitted by means of socialization, very similar to what Schutz and Luckmann described with respect to the 'basic elements of knowledge' and 'routine knowledge' (Schutz and Luckmann (1973), cf. chapter 5.3.1.2). It begins to take form, Bourdieu and Wacquant (1992a) argue, in early childhood and is acquired initially by the young child as a consequence of both conscious and unconscious practices in his/her family, resulting in the 'primary habitus'. While the passage of an individual through different social institutions, in the first place schooling, transforms this primary habitus into a secondary, tertiary or further habitus, all these stages contain the persisting characteristics of one's early socialization that forms “the basis of all subsequent experiences […] from restructuring to restructuring” (Bourdieu and Wacquant 1992a:134). An individual's habitus results from a long-term occupation of a position in the social world and is shaped by one's family, class position, status, education, ideology and distinctive tastes. In addition, it carries traits derived from a set of dispositions that has been developed over time by a specific social or ethnic group. Bourdieu describes this set as “[...] embodied history, internalized as

[144] In this context and following Pascal, Bourdieu also uses the term “croyance” (1997:23–24), referring to a form of fundamental conviction in the sense of an unchallenged acceptance.

second nature and so forgotten as history – is the active presence of the whole past of which it is the product" (1990a:56).

However, this does not imply that the habitus entails an encompassing determination. Bourdieu conceptualizes it as a generative system rather than a fixed one (M. Adams 2006). He describes it as a foundation from which endless improvisations can evolve, picturing it as a "'practical mastery' of skills, routines, aptitudes and assumptions which leave the individual free to make (albeit limited) choices in the encounter with new environments or fields" (Behler 2001:4). Using a sport metaphor, he refers to it as a "feel for the game" (Bourdieu 1990a:66), indicating that individuals have an embodied type of 'feel', i.e. a mastery of the rules for social situations they regularly find themselves in which allows them to successfully improvise and respond to the circumstances of the moment. As such, Bourdieu understands habitus as "structured structures predisposed to function as structuring structures" (1990a:53). This implies a fundamental reciprocity: Not only are one's actions shaped by structures and past events, they in turn also shape current practices and structures. As such, "habitus is neither a result of free will nor determined by structures, but created by a kind of interplay between the two over time [...]" (Bourdieu 1984:170).

With respect to society, Bourdieu attributes a crucial importance to the habitus, arguing that it contributes to social reproduction given its central role in generating and regulating the practices that constitute social life. As the members of the same group share a habitus due to their early exposition to approximately the same objective conditions, their practices are highly harmonized and coordinated. Inscribed in their bodies by similar histories, the habitus informs individuals to desire conditions that are within their reach and not to strive for what is inaccessible for them. This then leads to an internalization (Inglis and Thrope 2012) and, subsequently, to a reproduction of inequalities in the social structure (Rehbein 2006). Consequently, a habitus is therefore always a habitus of a specific class and marks the actor's boundaries of knowledge regarding the options and potentialities of his/her actions (Kajetzke 2008).

As outlined above, an actor's habitus – i.e. his categories of knowledge, understanding and perception – corresponds to the social setting and environment he/she finds him-/herself in. In Bourdieu's theory, this social environment is captured by the concept of *'(social) fields'.* Fields represent structured social spaces and denote the diverse social and institutional arenas in which individuals express and reproduce their dispositions. He suggests 'fields' as alternative analytical approach, following Weber's view in that society cannot be understood simply in terms of economic classes and ideologies.

Modern societies, Bourdieu argues, are made up of usually semi-autonomous and increasingly specialized spheres of actions, including e.g. the fields of education, law, economics, religion, politics or cultural production (Benson 2006). This diversity of fields is characteristic for modern societies while more traditional societies as e.g. the Kabyle people researched by Bourdieu have not evolved a comparable number of autonomous fields (Schwingel 2000; Steiner 2001). In general, more complex societies exhibit more fields and more relations between fields.

According to Bourdieu, a field is structured internally according to its own unique set of rules, schemes, knowledges and forms of capital and in terms of the present power relationships, requiring actors to respond in specific ways (M. Adams 2006): “In order for a field to function there have to be stakes and people prepared to play the game, endowed with the habitus that implies knowledge and recognition of the immanent laws of the field, the stakes, and so on.” (Bourdieu 1993c:72) Regardless of the thematic differences between fields, they share the same functional principle: The field is per se a “field of struggle” (Bourdieu 1985:74) or – more explicitly – a battlefield on which individuals compete for the distribution of different kinds of capital and, thereby, for improving or at least maintaining their social position and the related share of power (Benson 2006; König and Berli 2013). In other words, a field can be understood as a social arena of struggle where the agents involved compete for the appropriation of specific forms of capital[145]. Within these fields the unfolding power relations are characterized by a specific power structure relational to the specific field, the habitus of the people involved and their forms of capital. In addition, the situation within the fields affect those surrounding as the struggles in the fields control the 'exchange rate' of capital forms between the fields themselves. In this context, power is often experienced differently depending on the specific field one finds him-/herself at a given moment. In this respect, Bourdieu's approach can be used to enlighten “how people can resist power and domination in one […] field and express complicity in another” (Moncrieffe 2006:37).

In general, a field's boundaries are marked by where its effects end (Bourdieu and Wacquant 1992b:100). As mentioned above, fields can be either to a high degree autonomous or to a certain extent interrelated. While certain fields obviously overlap as e.g. in the case of religiously-based education systems, Bourdieu nevertheless understands fields as generally being relatively independent, given their own set of positions, practices and set of knowledges.

[145] 'Capital' in Bourdieu's understanding is not limited to economic resources (cf. below).

As for the inner organization of a field, Bourdieu describes the elements constituting it, namely the inherent social positions, the involved actors and the actual power distributions. In the Bourdieusian understanding actors do not enter fields without preconditions, but as individuals socialized in specific fields (Kajetzke 2008). Consequently, they have differing strategies and inputs at their disposition in the struggle for power distributions. Making use of the rules of the game – in Bourdieu's terminology called 'doxa' – the agents mobilize whatever they can to stake particular claims and strengthen their position in a given field. Recurring to Bourdieu's favorite metaphor, much as a football field, social fields are places where people aim at winning and therefore struggle for position. While doing so, they are confronted with requirements for membership set by the specific field on its participants. In this context, Bourdieu underlines that on the one hand, the field exercises an effect on the individual, regulating his/her behavior through the doxa or the rules of the game that go widely unquestioned. On the other hand, he argues, there is also a certain agency on the side of the individuals. Rules only define the general frame and structure of the play, however not the actual moves by the actors involved in the struggle for position (Rehbein 2006; Schwingel 2000).[146] Given this interaction, the field affects the agents and their habitus and, at the same time, is affected by them. All these struggles between different practices derived from different habitus taken together eventually result in either conserving or transforming the structure of the field, depending on which actors gain the upper hand (Inglis and Thrope 2012).

5.3.3.2 Knowledge in the form of cultural and symbolic capital

Against the backdrop of what has been described with respect to habitus and field, Bourdieu's theory has a strong inclination to explore and focus on how power is distributed. These distributions of power define the structure of the respective fields and furnish the actors with differing prerequisites for pursuing their goals on the social field, as Kajetzke (2008) argues. In Bourdieu's terminology, she continues, these prerequisites are also called *'capital'*. Capital has a double function: It not only determines the structure of the field, but also the habitus of the actors in it, resulting in it being equally field structure as well as input into the field.

Transcending the traditional limitation of referring to capital only in terms of economic resources, Bourdieu (1992) developed over several decades four different forms of

[146] An example for this agency is the circumstance that only the agents of a given field can determine the value of a field's position. In other words: One has to be part of the field to contribute to defining the value of the specific positions available. In contrast to this, one does not need to belong to a specific field to ascribe a high value to certain positions, as e.g. in the field of politics.

capital. He postulates that class, class relations and their constitution is better defined in terms of the specific habitus and the different capital forms invested than – as proposed by Marx – in terms of the individual's formal relation to the means of production. The four forms of capital he describes include economic, social, cultural and symbolic capital. In the following, I sketch them briefly.

Economic capital encompasses – next to the production means in the sense of Marx – all the accumulated economic resources having any kind of exchange value such as money, property etc. (Bourdieu 1983:185).

For Bourdieu, social capital denotes the social network resources of an agent and encompasses e.g. family, business associates as well as formal and informal networks (1983:190–95). It is defined as “the totality of current and potential resources connected to the possession of a durable network of more or less institutionalized relationships of mutual acquaintance and recognition; or, in other words, resources based on belonging to a certain group” (1983:190, translated from German by the author).

Cultural capital in the sense of Bourdieu denotes the cultural knowledge and the competencies built up and used by an agent, including preferences and taste. It refers to more symbolic elements signaling one's social position such as taste, skills, mannerisms and credentials. In that sense it is information capital and covers a set of rules that determine how to define other fields and other capital (1983:185–90). Bourdieu distinguishes between three forms of cultural capital: incorporated, objectified and institutionalized cultural capital. *Incorporated* cultural capital refers to capital that cannot be isolated from the individual holding it; it can e.g. take the form of language, accent, dialect or education and skills. *Objectified* cultural capital comes in physical objects whose consumption is indicative of one's social class; examples for this sub-form of cultural capital include art objects, books, instruments or wine. *Institutionalized* cultural capital takes the form of credentials that objectively mark one's social class and symbolize cultural competence and authority, most prominently in the case of educational qualifications such as degrees.

Elements of cultural capital are acquired by belonging to a specific social class and, in turn, a sense of collective identity is generated by sharing similar forms of cultural capital such a degree from a renowned university or the same taste in art or literature. In this context, Bourdieu underlines that certain forms of cultural capital are considered to be more valuable than others, resulting in this capital form having the potential to further or hamper one's social mobility just as much as income or wealth. He therefore

deems cultural capital to be a major source of social inequality (for an in-depth discussion cf. König and Berli (2013)).

Each of the three capital forms can turn into an object of acceptance or appreciation (König and Berli 2013) and be used for a symbolic enforcement of claims to power. In this function, capital turns into the forth form, i.e. into *symbolic capital* that represents a sort of meta-capital. According to Bourdieu, it is connected to a field's doxa and is linked to reputation and honor. In other words, symbolic capital is, eventually, "the form that one or another of these species[147] takes when it is grasped through categories of perception that recognize its specific logic, or, if you prefer, misrecognize the arbitrariness of its possession and accumulation" (Bourdieu and Wacquant 1992b:119).

Bourdieu claims that under the given circumstances, the different forms of capital can be converted into each other, albeit at varying degrees of difficulty and conversion efforts (1983:195–98). Such a conversion can e.g. take place by buying an expensive art object for money (cultural capital) or the membership in a yacht club (social capital) or by substantially supporting a charity organization (symbolic capital). Each form of capital conforms to its own rules and modes of functioning. Consequently, the exchange rates are highly contested, given that the significant shareholders of each capital form strive for preserving and/or increasing the value of the specific capital form (Rehbein 2006). With respect to a profitable conversion of capital, investing money is therefor only promising if the art object from the example above is recognized in the field of art and if the membership in a yacht club is accompanied by a continuous cultivation of the relationships. As for the investment into the charity organization, it has to be perceived by the relevant public as an act of charity.

As for the hierarchy between the different capital forms, Bourdieu considers economic capital to be the most decisive resource, at least with respect to contemporary capitalist societies (Savage, Warde, and Devine 2005). On the background of the interlinkage between capital and field, he concedes that "[o]bviously, in advanced capitalist societies, it would be difficult to claim that the economic field does not exercise especially powerful determinations" (Bourdieu and Wacquant 1992b:109). However, while acknowledging a "tendency to a dominance of the economic field" (Bourdieu 1985:11) at this given historic juncture, he argues against a final economic determination, arguing that relations between the fields are by no means fix but in a process of re-negotiation when considering longer time spans (Bourdieu and Wacquant 1992b).

[147] By 'species' Bourdieu means the capital forms.

The concept of capital is the connection between the concepts of 'field' and 'habitus' in the sense that habitus depends on the capital available in a specific field. The amount of capital determines the weight and influence an actor has with respect to forming and modeling the field (Rehbein 2006). In this sense, each actor acts according to the constraints of the field structure. The less significant his/her weight with respect to the field, the bigger the structural constraints. The more significant his/her weight, the bigger is his/her potential for influencing and modeling the field in terms of the rules, the investments and the distribution of benefits.

With respect to the central topic of knowledge, cultural and symbolic capital are of pivotal importance (Kajetzke 2008)[148]. Following her approach, the two capital forms display both specific functions with respect to knowledge: Cultural capital allows to tackle the issue of knowledge in terms of its potential as resource while symbolic capital broaches the issue with respect to its potential as cognition or cognitive process (2008:57–58).

Kajetzke (2008:58–59) outlines that by speaking of *cultural capital* in its objectified, institutionalized or incorporated forms, Bourdieu illustrates that an actor's knowledge in fact results from societal work and multi-faceted efforts (mainly money and time) which both the actor him-/herself and his/her environment invested into his/her educational development (Schwingel 2000). He understands knowledge as embodied cultural abilities, practices and skills. As such, knowledge represents a resource of the actor in question that he/she can refer to. In addition to this, as knowledge has been learned and practiced under a specific habitus, it forms a crucial part of the actor's identity. It is in fact in the habitus where the possibilities and limits are defined of what an actor can know, given that it represents the power relations with respect to both the field and the actor. In terms of the actual distribution of this knowledge, Bourdieu stresses that it is highly non-homogeneous, given that it is strongly influenced by the capital structure of the actor's family with respect to the economic, social and cultural dimensions. Accordingly, the chances to which an actor is able to enforce his/her interests (be it in an educational or professional context) strongly depend on how much economic and cultural capital his/her immediate social environment possesses (Bourdieu 1966).

Symbolic capital in Bourdieu's understanding represents some sort of social legitimation in the form of prestige and reputation attributed to an actor's action or possession

[148] As stressed by Houben (2013), 'knowledge' is a topic that is rarely dealt with in academic reception of Bourdieu's theory. This main reason for this seems to be that it is generally subsumed under 'cultural capital', which is sometimes also called 'educational capital'. It is to Kajetzke's (2008) credit that she pointed to the linkage between knowledge and symbolic capital, which includes the dimension of the cognitive apprehension (in the original termed as 'kognitive Erfassung der sozialen Welt').

by other actors in the respective field. It therefore crucially depends on the accumulation of other capital forms while at the same time allowing the economic, social and cultural capitals to unfold their power effects. This reciprocal process contributes to forming the specific habitus of a person and establishing specific structures of thought and perception, resulting in an individual way of perceiving and assessing social situations in the field: “The primary capital forms and the symbolic transformation, incorporated resources and habitual cognition, are linked by a system of interrelationship of mutual enabling and influencing.” (Kajetzke 2008:60)

Cognition, here understood as the understanding of social situations, is called ‘habitual’, as in most cases, it does not imply a conscious understanding, but refers to an unquestioned recognition or common sense. Such habitual knowledge builds on what has earlier been described as 'doxa' (cf. chapter 5.3.3.1) and is therefore also referred to as 'doxic knowledge'. According to Bourdieu, such habitual processes explain why power constellations and social inequalities remain relatively stable regardless of ongoing social battles by all actors for improving or maintaining their specific position. The battles take place within a context pre-stabilized by an implicit agreement to accept the given power constellation in general terms. In this context, Bourdieu refers to symbolic power as the 'soft power' that leads to reproducing inequalities by means of the habitus' perceptional patterns. However, social fields not only have a deterministic function in that existing structures are reproduced along the unquestioned doxa, they also build the starting point for what Kajetzke called “counter-strategies” (2008:62). Counter-strategies consist in challenging the existing structures and rules along which existing power constellations are construed, resulting in them becoming flexible and modifiable again. This form of challenging the existing order is called “heresy” (Bourdieu 1993b:109). In the course of these processes of negotiation, new forms of knowledge can emerge and replace the habitual, ‘doxic knowledge’. This new knowledge or ‘heretical knowledge’ is characterized by it questioning existing interpretative patterns.

5.3.3.3 Reflexivity as meta-concept for examining one's own knowledge

Next to the epistemological shortcomings of subjectivism and objectivism described in footnotes 140 and 141, Bourdieu criticizes that both approaches ignore the question of the possibility and limits of a researcher's own understanding and realization (Steiner 2001). Against the backdrop of the habitus concept and the related internalization of dispositions, Bourdieu comprehends human actions as in large part unconscious activity, rooted in the doxa: “It is because agents never know completely what they are doing that what they do has more sense that they know.” (1990a:69) He underlines that

this is equally the case for the sociological habitus and stresses that the “scholastic point of view” (1990b:380) unintentionally modifies how scientists approach their objects of study – a fact that according to him goes largely unnoticed and leads to ignoring the limited range of such claims to validity. It entails that preconstructed objects and related systems of classification are taken for granted without taking into consideration the circumstances of their generation and related issues of power and hierarchization.

He criticizes those “people whose profession would consist in objectifying the social world and who are not able to objectify themselves and do not see that what is talking from their alleged scientific discourse is not the object, but rather their relationship to the object, resentment, envy, social craving, unconscious tendencies and a multitude of not analyzed issues” (Bourdieu 1993a:15, translation by the author)[149]. In a certain sense, he reproaches science not to apply its own principles and tools on itself, resulting in the nurturing of two complementing illusions, “the subjectivistic 'illusion of the immediate realization' and the objectivistic 'illusion of absolute understanding'” (Schwingel 1993:45; translation by the author).

In order to remedy this situation, he introduces the concept of a ‘reflexive sociology’, most prominently in “An Invitation to Reflexive Sociology” (Bourdieu and Wacquant 1992a). He suggests that (social) scientists objectify themselves and conduct their research with conscious attention to their own biases, beliefs and assumptions in the act of sense-making. As Wacquant, Bourdieu's co-editor for “An Invitation to Reflexive Sociology” underlines (Wacquant 1992:39–40), this objectivation aims at three biases: *First*, it is directed at one's own personal entanglement with the research object due to specific interests and a specific way of thinking that are linked to the one's social background (including class, culture, generation, gender, age, nationality etc.) and form one's habitus. *Second*, it aims at the bias linked to the position a researcher has in the microcosm of his academic field depending on the theoretical approach he/she chooses and the power attributed to this position. This includes a critical assessment of the whole fabric of traditions, thought patterns, problems and shared convictions that shape what at a given time is considered to be worthy and important enough to be researched and discussed. These two biases direct the course of inquiry and determine the lenses one looks through, i.e. the theories or methodologies applied. The *third* bias entails what Wacquant calls an “intellectualistic bias” (1992:39); he considers it to be the one characterizing Bourdieu's concept of reflexivity most prominently. This bias pre-

[149] In the German original, for clarity reasons: “Bei vielen soziologischen Arbeiten, die ich lese, finde ich es bedauerlich, dass Leute, deren Beruf es doch ist, die soziale Welt zu objektivieren, so wenig in der Lage sind, sich selbst zu objektivieren und nicht sehen, dass, was aus ihren vermeintlich wissenschaftlichen Reden spricht, eben nicht das Objekt ist, sondern vielmehr ihre Beziehung um Objekt, Ressentiment, Neid, soziale Begierde, unbewusste Strebungen, eine Menge nicht analysierter Dinge.”

vents one from perceiving the world in terms of the practical problems to be solved, but induces one to focus on theoretical constructs and agglomerates of meaning or, in other words, on “the collective scientific unconscious” (Wacquant 1992:40). He argues that such an approach runs the danger of imposing theoretical concepts and approaches on real world issues, resulting in what Bourdieu called a denial of social reality as “nobody […] wants to see the social world as it is” (Bourdieu, Chamboderon, and Passeron 1991:282).

Reflexivity in Bourdieu's sense does not primarily imply a subject's reflection on itself, but rather on the social and intellectual foundation reflected in the scientific methods and tools (Wacquant 1992). While Bourdieu acknowledges – much like other sociologists – that personal prejudice plays significant a role and needs to be taken into account, he focuses on the impact of one's institutional disciplinary position and the related intellectual framing: “The 'return' it [reflexivity, the author] calls for extends beyond the experiencing subject to encompass the organizational and cognitive structure of the discipline” (Wacquant 1992:40). Reflexivity with respect to the third bias implies to turn one's attention toward the unconscious preconditions of the sociological habitus or, in Bourdieu's terminology, the doxa of the intellectual field of sociology.

By recurring to reflexivity, Bourdieu pursues two aims. On the one hand, he invests in reinforcing scientific research against attempts by the political and economic fields to exploit it. On the other hand, he strives for immunizing research against the temptations that come with the inner logic of the scientific field, including the danger of assessing phenomena from an ethnocentric or otherwise limited perspective. Thus, his approach to reflexivity is characterized by the researcher’s close involvement; it is paramount for him/her to recognize him-/herself as being “of the world [they] study, that [they] are accountable to the 'natives', who now talk back. No longer can [they] pretend to any clear demarcation” between them and their objects of research (Burawoy 2000:21).

5.3.3.4 Summary of the dimensions of ‘knowledge’ and ‘understanding’ informed

Summarizing the insights from Bourdieu's theoretical approach reveals that they contribute to informing both of the dimensions constituting ‘knowledge’ and ‘understanding’ as anticipatorily introduced in chapters 4.4.1 and 4.4.3. In the case of ‘knowledge’, four dimensions are informed, namely the (3) actor-related dimension, the (4) dimension of social organization, the (5) contextual dimension and the (8) representational dimension. In the case of ‘understanding’, all three dimensions are discussed, i.e. the (14) di-

mension of the uncertainty of gaining an adequate understanding, the (15) dimension of structural and organizational constraints influencing understanding and the (16) dimension of personal biases influencing understanding.

With respect to **knowledge** (cf. illustration 17), Bourdieu's theoretical contribution *first* specifies the (3) actor-related dimension of knowledge by detailing the forms an actor's knowledge can take. In this respect, he distinguishes between three forms of so-called cultural capital: incorporated, objectified and institutionalized cultural capital. These forms represent resources an actor can draw on.

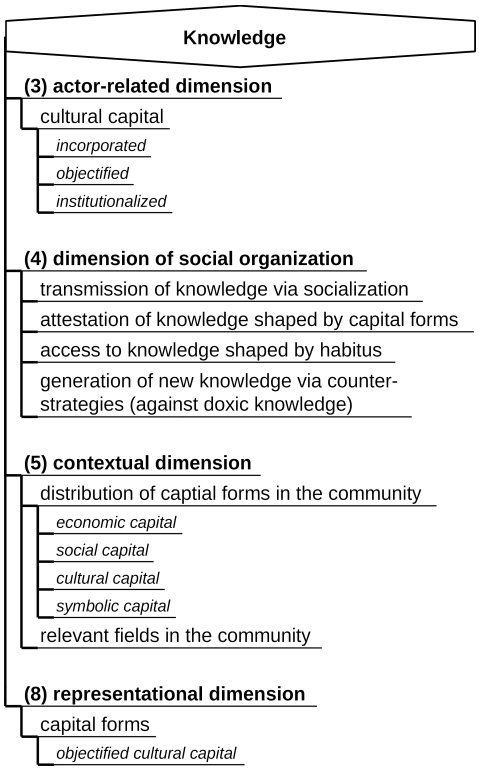

Illustration 17: Dimensions of knowledge informed by sociology – Bourdieu

Second, Bourdieu's deliberations inform the (4) dimension of social organization of knowledge in a number of ways: (a) He stresses the central function of socialization for transmitting knowledge, (b) he argues that the act of attesting knowledge to somebody is significantly coined by the capital forms at hand and more precisely by means of assessing what he calls 'institutionalized cultural capital' and (c) he argues that access to knowledge is substantially shaped by a person's habitus. Habitus, in turn, is conceptualized as system of acquired and lasting patterns of perception, knowledge and action. It is an embodied, generative and largely unconscious principle, derived from the conditions in which an individual grows up that at the same time also marks an actor's boundaries of knowledge and consolidates group-specific knowledge. Last and (d), Bourdieu contributes to elucidating the question of how new knowledge is generated by elaborating on the counter-strategies against so-called doxic knowledge building on symbolic capital and power and resulting in the emergence of new knowledge.

Third, Bourdieu's approach is informative with respect to informing the (5) contextual dimension of knowledge. He does this by introducing the concepts of 'field' and 'capital forms' that he both links to the overall power issue, arguing that all facets of social life need to be scrutinized for the power relations they embody. With respect to the so-

called fields, he understands them as structured social spaces – structured along a set of rules, capital forms available and knowledges involved; examples for this include the religious field, the field of art, the field of culture etc. According to Bourdieu, these fields represent fields of struggle in which interactions take place and actors confront each other. These confrontations are fueled by differing means and ends, depending on the actors' position in the field of forces, and eventually contribute to conserving or transforming the structure of the field. Concerning the influence and relevance of capital forms on the contextual dimension of knowledge, Bourdieu underlines the interconnection of capital and power. He distinguishes between economic, social, symbolic and cultural capitals (the latter in the three sub-forms of embodied, objectified and institutionalized cultural capital) and claims that the capital an actor has determines his/her influence in forming and modeling the respective field according to his/her interests.

Forth, Bourdieu's theory also contributes to informing the (8) representational dimension of knowledge by pointing to a specific capital form, i.e. objectified cultural capital such as books, collections etc. as one mode of representation of knowledge.

With respect to **understanding** (cf. illustration 18), Bourdieu's approach addresses and informs all three dimensions sketched in chapter 4.4.3, namely the (14) dimension of the uncertainty of gaining an adequate understanding, the (15) dimension of structural and organizational constraints influencing understanding and the (16) dimension of personal biases influencing understanding.

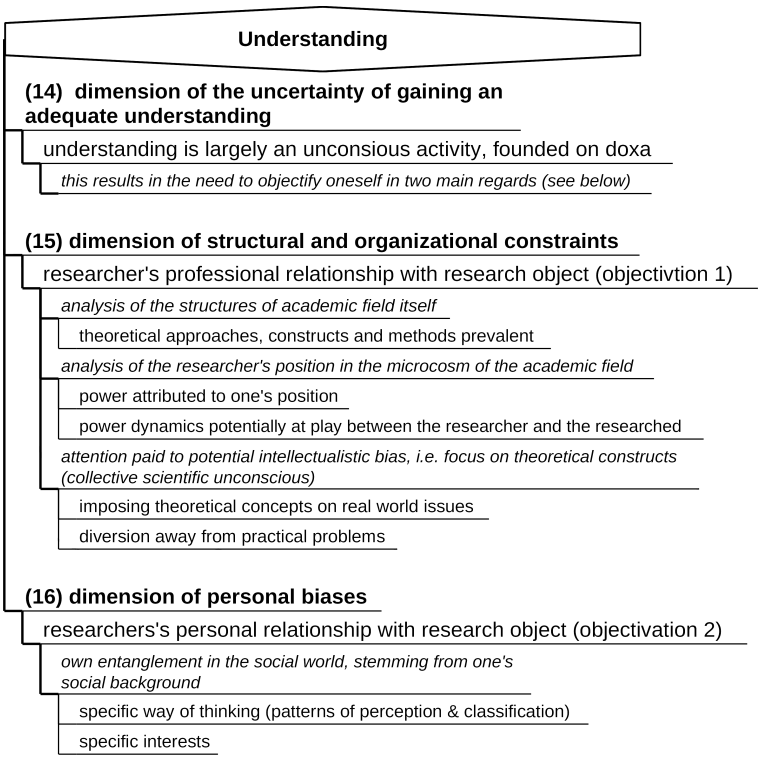

Illustration 18: Dimensions of understanding informed by sociology – Bourdieu

His reflections culminate in his coining the concept of reflexivity whereby he understands reflexivity as a means to arrive at unadulterated insights into the actual object of study, to the greatest extent possible.

Arguing that in general, human actions are to a large part rooted in doxa, he considers scientific research to largely amount to an unconscious activity too. Against this backdrop, he concludes that such knowledge must therefore not be taken for granted, but needs to be additionally scrutinized, whereby he informs the (14) dimension of the uncertainty of gaining an adequate understanding.

To counteract the situation, he advocates for paying conscious attention to the conditions and characteristics of one's external setting and one's own disposition, structures and inclinations in the act of sense-making, thereby informing the two remaining dimensions of understanding (15) and (16). Arguing that the researcher is part of the social world he/she is researching, Bourdieu suggests that he/she examines his/her relationship with the research object from two perspectives, namely in terms of the personal and professional relationships with the topic in question.

With respect to the *professional entanglement* with the topic and informing the (15) dimension of structural and organizational constraints influencing understanding, he proposes to examine on the one hand the prevalent theoretical-methodical landscape (i.e. the preferred theoretical and methodological approaches) as well as one's position in the microcosm of one's academic field. Both aspects, Bourdieu argues, need to be also analyzed against the backdrop of power dynamics attributed to it, also in regard to the topics studied (including potential power dynamics between the researcher and the researched). On the other hand, he advocates for paying close attention to the so-called 'intellectualistic bias', i.e. to the focus on theoretical constructs and agglomerates of meaning (or what he calls the 'collective scientific unconscious'). He argues that the unconscious nature results in taking many structures for granted, such as e.g. the topics and themes considered worthy or unworthy of further investigation. Such a reflection-free approach to research, he argues, threatens to impose theoretical assumptions and concepts on real world issues, thereby diverting away from the practical problems.

In regard to the personal entanglement and informing the (16) dimension of personal biases influencing understanding, Bourdieu argues for critically reflecting on one's own personal relationship with the research object. This form of entanglement results from one's own social background, including class, culture, generation, gender, age, nationality etc. It also extends to one's specific way of thinking and related patterns of perception and classification that determine one's view of the world as well as one's specific interests.

In other words, Bourdieu advocates for adopting a critical attitude towards one's own perception in itself, one's research practice, potential power dynamics in the academic

and organizational fields as well as structural and institutional specifications and constraints in general. In this vein he considers it paramount that one observes oneself in doing research or in implementing development projects with a special focus on the transfer of all sort of constraints and biases into one's work, be they acquired through socialization, professional training or institutional setting.

5.3.4 Summary of the sociological foundations for 'knowledge'

As outlined earlier, this summary aims at condensing the main insights from the sociological contributions described above. Even more importantly, it outlines how some of the fundamental dimensions of knowledge (cf. chapter 4.4.1) are directly informed by these contributions and closes with relating the various theoretical insights to the respective dimensions. Anticipating the result, the following six dimensions of knowledge turned out to be informed by the sociological literature considered in this research: the (1) epistemic dimension, the (3) actor-related dimension, the (4) social organization, the (5) contextual dimension, the (7) legitimational dimension and (8) representational dimension (for an overview cf. illustration 19).

Discussing in chapter 5.3.1 **Schutz's** perspective on knowledge, including the notion of 'practical consciousness' central to his approach – resulted in a number of insights relevant in regard to developing an encompassing framework for understanding local knowledge: *First*, his distinction between an actor's social and subjective stock of knowledge (including the respective subdivisions of the two terms) and his focus on an actor's depth or granularity of knowledge (including the subdivision into three levels of granularity) all underline the actor's centrality and the ramifications of his/her basic knowledge configuration; this in turn contributes to informing the (3) actor-related dimension of knowledge. *Second*, Schutz stresses the role of socialization for knowledge transmission, thus informing the (4) dimension of social organization of knowledge. *Third*, with regard to informing the (5) contextual dimension of knowledge, he identifies basic categories characterizing the fundamental construction and stratification of all life-worlds that should allow to examine a specific particular life-world in-depth; these basic categories include on the one hand the division of the world into four sub-worlds (so-called 'Mitwelt', 'Umwelt', 'Vorwelt' and 'Folgewelt') and the respective implications and on the other hand the idea of a set of various provinces of meaning with reality being the central reference point and other provinces such as the world of dreams, of religious experience etc. forming secondary reference points. *Forth*, by differentiating his concept of motivational relevances into two types ('in-order-to motives' focusing on the

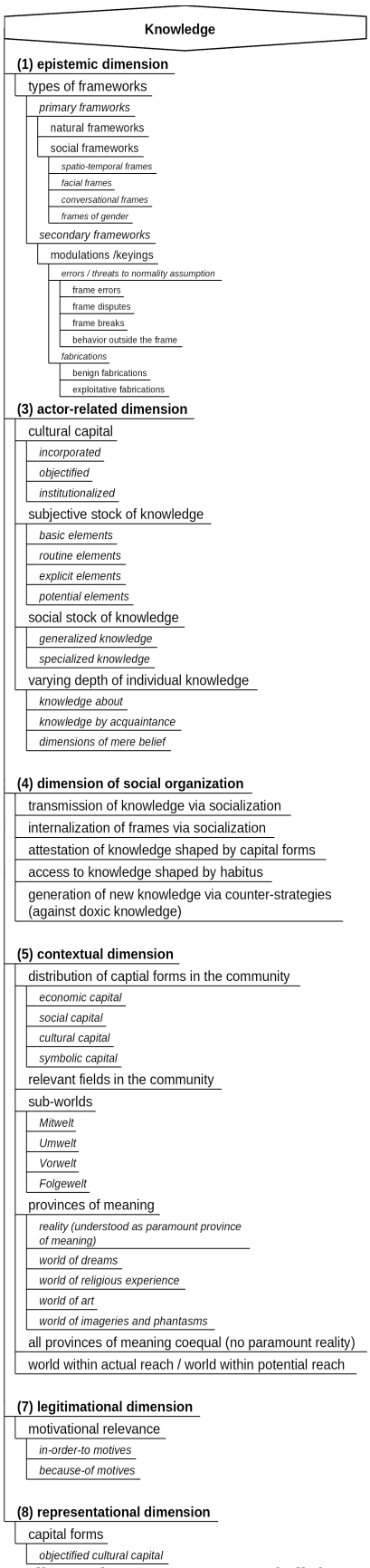

Illustration 19: Summary of all the dimensions of knowledge informed by sociology

future and 'because-of motives' centering on the past) Schutz additionally contributes to informing the (7) legitimational dimension of knowledge.

Goffman's contributions to the debate, discussed in chapter 5.3.2, are in three ways formative for informing the term in question. *First*, he provides ample substantiation for the (1) epistemic dimension of knowledge by introducing the concepts of primary frameworks (natural and social frameworks) and secondary framework, along with their characteristic modulations or keying. In his understanding, frames encapsulate culture-specific expectations regarding the context a situation takes place, the people involved and their behavior and the extent of involvement adequate to a given situation and as such, they provide conceptual orientation as to how to interpret and understand social situations. *Second* and with respect to informing the (4) dimension of social organization in his theory, Goffman describes a crucial way how knowledge is transmitted in social contexts, namely by internalizing what he calls 'frames' during socialization. Third, Goffman agrees with Schutz that multiple provinces or realms of meaning do in fact exist and bear an importance, thus informing the (5) contextual dimension of knowledge. However, in contrast to Schutz's perspective, he denies the existence of a 'paramount reality' and considers the diverse realms of life as equally pertinent and dominant, putting everyday reality on a level with other realms such as dreams or play.

Outlining **Bourdieu's** approach to conceptualizing knowledge in chapter 5.3.3 led to informing a total of four dimensions of knowledge. *First*, by distinguishing between the types an actor's knowledge can take, Bourdieu identifies three forms of so-called cultural capital, thereby informing the (3) actor-related dimension of knowledge.

These three forms of cultural capital, all of which represent resources the actor can fall back on, include incorporated, objectified and institutionalized cultural capital. *Second*, he contributes in various way to specifying the (4) dimension of social organization of knowledge, including a) by underlining the importance of socialization for knowledge transmission, b) by pointing to the fact that the capital forms at hand – in particular what he calls 'institutionalized cultural capital' – are decisive in attesting knowledge to somebody, c) by arguing that a person's habitus – one of Bourdieu's main conceptualized as system of acquired and stable patterns of perception, knowledge and action – is crucial when it comes to access to knowledge and d) by stressing that for new knowledge to be generated, counter-strategies need to be identified against so-called doxic (i.e. habitual) knowledge.

Third, by introducing the concepts of 'fields' and of 'capital form, which in Bourdieu's understanding are both intrinsically linked to power, he contributes to informing the (5) contextual dimension of knowledge, arguing that social life as a whole needs to be examined in terms of the inherent power structures. For him, 'fields' represent social spaces such as 'art' or 'religion' that are structured along a specific set of rules, capital forms at hand and knowledges involved and representing fields of struggle where interactions and confrontations take place that are decided depending on the actors' position in the field and means employed, resulting in the conservation or transformation of the field's structure. 'Capital forms', as conceptualized by Bourdieu, rests on the idea that capital and power are linked and that the capital available to an actor determines the amount of influence he/she has in modeling the field according to his/her interests. Bourdieu thereby differentiates between four forms, namely economic, social, symbolic and cultural capital[150]. *Forth*, and eventually, Bourdieu's notion of capitals also informs the (8) representational dimension of knowledge in stressing a specific capital form relevant to this, namely objectified cultural capital such as e.g. collections, books, performances etc.

5.3.5 Summary of the sociological foundations for 'understanding'

In parallel to the preceding chapter 5.3.4, I summarize first the insights into the complex topic of 'understanding' gained from the sociological literature on 'knowledge'.[151] In a second step, I outline how these insights inform all three overarching dimensions of understanding (cf. chapter 4.4.3). The dimensions concerned are the (14) dimension of

[150] Cultural capital is again sub-divided into the three forms of embodied, objectified and institutionalized cultural capital (cf. chapter 5.3.3.2).

[151] For clarity reasons, I reiterate at the point that Schutz's theory (cf. chapter 5.3.1) did not provide any grounding to the dimensions of understanding.

the uncertainty of gaining an adequate understanding, the (15) dimension of structural and organizational constraints influencing understanding and the (16) dimension of personal biases influencing understanding (for an overview cf. illustration 20).

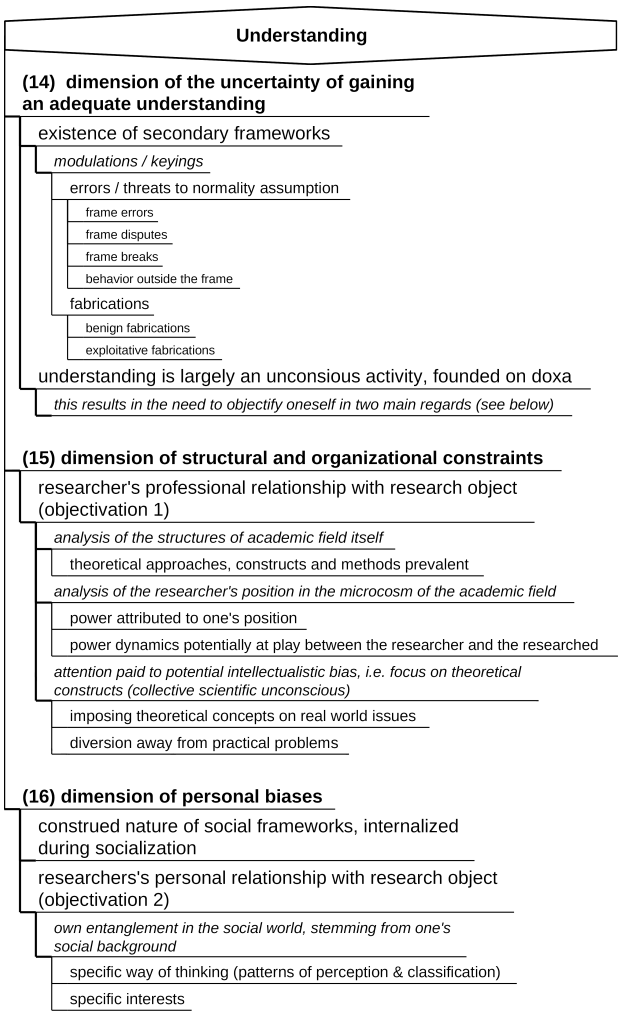

Illustration 20: Summary of all the dimensions of understanding informed by sociology

Analyzing **Goffman's** perspective (cf. chapter 5.3.2) resulted in grounding and informing two of the three dimensions of understanding. With respect to the (16) dimension of personal biases influencing understanding, Goffman postulates the existence of what he calls ‘primary frameworks’, differentiated into natural and social frameworks, and ‘secondary frameworks’ including ‘modulations’ and ‘keyings’. These different frameworks, he argues, facilitate making sense of situations while simultaneously constructing them and are a form of analytical instrument for the orientation in the social world and for meaningfully decoding everyday experiences. Importantly – with respect to the aspect of personal biases – these frames or experiential schemes are learned and internalized during socialization at a very young age, which also explains why they remain largely unconscious and, consequently, are experienced primordially. In other words, the conceptual structure through which people process information from childhood onward forms at the same time a potential repository of personal biases – biases that one integrates into primary and secondary frames during socialization.

In discussing frames, particularly secondary frames, Goffman also broaches the issue of the fragile and contingent nature of any attempt at making sense, thus elucidating the (14) dimension of the uncertainty of gaining an adequate understanding. While arguing that frames are in general vital for identifying, defining and understanding events

of all kinds, thus ensuring everyday normality, he stresses that they are not able to provide certainty as such. Rather, they always represent the ‘best inference possible’ in an open-ended process that is fundamentally threatened and leaves one at the risk of misinterpreting situations. This is even more virulent in the case of both benign and exploitative ‘fabrications’ such as, in Goffman’s terminology, ‘frame errors’, ‘disputes’, ‘breaks’ and ‘behavior outside the frame’; they all represent threats to the normality assumption, thereby underlining the precarious nature of one’s concept of reality.

The theoretical contributions from **Bourdieu’s** approach (cf. chapter 5.3.3) address and inform all three dimensions involved. *First*, he advocates for adopting a critical attitude towards one's own perception and one’s research practice, given that in his view, research amounts to a largely ‘semi-conscious activity’ given the effects of ‘doxa’, i.e. of deep-rooted and largely unquestioned beliefs and convictions. Thus, Bourdieu understands the actual process of gaining an understanding to be permanently and fundamentally endangered by one’s own habitual patterns, thereby informing the (14) dimension of the uncertainty of gaining an adequate understanding of this project.

The remaining two dimensions of understanding are informed by Bourdieu’s concept of ‘reflexivity’ whereby he understands ‘reflectivity’ as amounting to a ‘full objectivation’. In other words, he considers it paramount that one observes oneself in doing research or in implementing development projects with a special focus on the transfer of one’s own biases into one’s work – be they acquired through socialization or professional training. Arguing that the researcher is part of the social world he/she is researching, he suggests that he/she examines his/her relationship with the research object from two main perspectives: *First*, he argues for critically reflecting on one's *personal entanglement* with the topic of interest, which results from one's social background and upbringing, including the specific patterns of perception, valuation and classification determining one's distinct interests, thus contributing to informing the (16) dimension of personal biases influcencing ‘understanding’.

Second, he proposes that one pays equal attention to one’s *professional entanglement* with the topic, whereby he contributes to informing the (15) dimension of structural and organizational constraints influencing understanding. The focus on one’s professional entanglement is directed at two aspects specifically: On the one hand, it entails a thorough double analysis of one’s general position in the microcosm of one’s academic field and (b) the theoretical constructs and methods mostly applied. ‘Analyzing’ one’s position’ also implies checking for power dynamics emerging from the specific constellation and their potential influence on the research or development project at hand (in-

cluding power between the researcher and the researched). ‘Analyzing the theoretical and methodical landscape’ extends to a critical assessment of the theoretical approaches prevalently applied and the perspective on reality resulting thereof. On the other hand, Bourdieu promotes to pay close attention to the intellectualistic bias, i.e. to the focus on theoretical constructs and agglomerates of meaning (or what he calls the 'collective scientific unconscious'). He argues that the unconscious nature leads to taking many structures for granted, such as e.g. themes considered worthy or unworthy of further investigation. An approach to research which refrains from critically reflecting on its own conditionality, he specifies, threatens to impose theoretical assumptions and concepts on real world issues, thereby diverting away from the practical problems.

5.4 Anthropological foundations

‘Knowledge’ indeed represents a cross-disciplinary concept in the true sense: In chapter 5.2, I discussed philosophy's perspective on it and pointed out that it is foremost informed by a focus on knowledge per se, its validation and a general quest for truth. Sociology, as shown in chapter 5.3, primarily addresses and discusses the social embeddedness of knowledge and the circumstances and ways of its construction and generation. Anthropology, the last of the social-science triplet, follows by and large a path similar to one pursued by sociology in studying knowledge's embeddedness – however, this time in terms of its cultural foundations and forms.

As a matter of fact, ‘culture’ can be said to be a, if not *the* key concept of anthropology – at least of socio-cultural anthropology, which also happens to be defined as 'the study of cultures'. As it is often the case with key concepts, the notion of knowledge is as central to the anthropological debate as it is contested. In the last decades, the so-called 'classical approach’ to culture has increasingly come under criticism (cf. e.g. Abu-Lughod (1991), Barth (2001), Boyacigiller et al. (2004) and Rodseth (1998)). The critique is directed at a variety of alleged theoretical and methodological shortcomings: The classical approach is said to conceptualize culture as a “bounded, single-site, static entity” (Caulkins 2004:317) and to assign similar traits to their objects of study, thereby running the risk of essentializing, homogenizing and 'othering' them. In reaction to this fundamental critique, certain authors argue for a basic revision of what is understood by 'culture', e.g. by breaking the concept into its elements (such as religious beliefs or the arts) which then need to be comprehended on their own terms (Kuper 1999). Others suggest rejecting the concept of culture altogether (Barth 2001; Caulkins 2001) and turning to other, more fruitful ones such as ‘knowledge’ that in their view promise to provide an inclusive, encompassing perspective (Barth 1995).

However, this research does not intend to partake in the fundamental discussion on the definition of culture. Rather, it focuses on anthropology's perspective on the notion of 'knowledge' as this chapter's ultimate goal consists in informing the term for this project's purpose, along with the related notion of 'understanding'. In this vein, I discuss below three approaches[152] that offer conceptual-analytical insights into the topic and complement the philosophical and sociological perspectives presented earlier in chapters 5.2 and 5.3. In terms of concrete references in the literature selected and consulted, I expect anthropology to provide ample material for grounding and informing both terms and their respective dimensions (cf. chapters 4.4.1 and 4.4.3). For 'knowledge', I anticipate it to cover the (1) epistemic dimension, the (2) procedural dimension, the (3) actor-related dimension, the (4) dimension of social organization, the (5) contextual dimension, the (7) legitimational and, lastly, the (8) representational dimension. For 'understanding', I expect two dimensions to be informed, i.e. the (14) dimension of the uncertainty of gaining an adequate understanding and the (15) dimension of structural and organizational constraints influencing understanding.

With regard to the structure of this chapter, I first outline the approach advocated by Barth and commonly denoted as 'anthropology of knowledge' (cf. chapter 5.4.1). As mentioned, he considers 'knowledge' to be a more productive analytical category than 'culture' for picturing and understanding the diverse expressions of human behavior. Accordingly, he proposes using knowledge as "prototype for culture" (1995:66), not least because he considers it to entail an "imagery less vulnerable to the constructions on which disempowerment discourses build" (1995:66). As for the actual discussion of Barth's concept of knowledge, I start by outlining in chapter 5.4.1.1 his argument as to why he considers 'knowledge' to represent a more promising analytical category than 'culture'. In chapter 5.4.1.2, I describe his concept of knowledge consisting of three so-called 'faces' or aspects that describe any knowledge form.

In a second step (cf. chapter 5.4.2), I describe the value orientations theory established by Florence Kluckhohn and Fred Strodtbeck and complemented by Michael Hills. In contrast to Barth, Kluckhohn and Strodtbeck do not opt for replacing the concept of 'culture', but for conceptualizing it in terms of a society's underlying value system. They suggest a taxonomy of cultural values that comprehends culture as an ensemble of responses to a number of basic challenges in daily life. When discussing the value orien-

[152] Given that local knowledge is a topic that one would genuinely assign to anthropology, three contributions from this discipline might seem few. However, most anthropological research on local knowledge approaches the topic in an extensively descriptive way, outlining in great detail the characteristics of a specific knowledge tradition or form. The focus of this research is, however, on conceptualizing local knowledge in an analytical and structured manner. In view of this, I therefore resort for the literature selection to anthropologists whose theories are either not related to the local knowledge discourse (as in the case of Kluckhohn, Strodtbeck and Hill) or do not figure among the approaches commonly discussed in the context of the local knowledge debate.

tation approach, I start in chapter 5.4.2.1 by outlining the conceptual basis designed by Kluckhohn and Strodtbeck as well as the six basic challenges that, according to their theory, every society needs to resolve. In chapter 5.4.2.2, I describe the various developments of the theory, including the complementing basic challenges suggested by Hills.

Lastly, I turn to Brent Berlin (cf. chapter 5.4.3) and his use of cognitive techniques in his research on ethnobiological classification systems and color naming schemes across the world. His contribution stands out, in the first place methodologically[153], in that he reverses the roles when it comes to gaining an understanding in an unfamiliar context: Instead of the scientifically-trained actors doing their best to try to make sense across epistemologies, Berlin proposes that the local partners describe and detail the content, structure and characteristics of their knowledge in their role as local experts. In fact, this way, Berlin and his associates found convincing evidence of surprisingly extensive similarities in color and ethnobiological classification, thus further consolidating the idea of the universality of basic human cognition. As for the structure of the chapter, I begin by describing the emergence of the discipline of cognitive anthropology along with Berlin's respective contribution (cf. chapter 5.4.3.1). In chapter 5.4.3.2, I outline Berlin et al.'s model for ethnobiological classification, followed by an outline on the cross-cultural color scheme (cf. chapter 5.4.3.3).

The specific approach is in parallel to the preceding chapters on philosophy and sociology: All three discussions conclude with an individual summary on how the insights inform the basic dimensions of knowledge listed in chapter 4.4.1. In the case of a theory additionally informing the notion of 'understanding', a second summary is provided with an outline on how the respective approach grounds the dimensions of understanding listed in chapter 4.4.3. In conclusion, chapters 5.4.4 and 5.4.5 provide summaries of all the insights combined from sociology on 'knowledge' and 'understanding' respectively.

5.4.1 Fredrik Barth: Culture as shared knowledge

In the attempt to identify cogent conceptual-analytical approaches to knowledge, I resort to Fredrik Barth's alternative approach to conceptualizing culture and knowledge. In this vein, I describe in chapter 5.4.1.1 Barth's specific take on culture and knowledge before outlining in chapter 5.4.1.2 his analytical approach to knowledge. The concluding chapter 5.4.1.3 sums up the main insights and describes how they contribute to informing the dimensions of knowledge outlined in chapter 4.4.1.

[153] For an outline on how Berlin's perspective differs and for implications resulting thereof cf. chapter 5.4.3.4.

5.4.1.1 Barth's perspective on culture and knowledge

As addressed above, in terms of approaching 'culture', I follow Barth and his suggestion to divert the attention away from the broad and potentially biased notion of culture and instead focus on the notion of "traditions of knowledge" (2002:1) by acknowledging "knowledge as a major modality of culture" (1995:66). Unlike Boyer (2005) who equates the concepts of culture and knowledge[154], Barth (2002) upholds the distinction between 'knowledge' and 'culture', differentiating them from each other. He argues that while 'knowledge' serves and furnishes people with material for reflection and premises for action, 'culture' too eagerly embraces the results of those reflections and actions, thereby distracting the attention from the people's "engagement with the world, through action" (1995:66). To avoid the fusion of the two concepts, he draws a line between reflections and actions based on knowledge (being part of culture) and knowledge itself that provides the social actor with material for reflection and premises for action. By doing so, Barth underlines that he understands knowledge foremost as 'knowing' and therefore as a process (as opposed to a product). Consequently, he emphasizes the processes of production, reproduction and use of knowledge while at the same time stressing the agency of individuals in an attempt to draw attention to the "knowers and to the acts of the knowledge – the people who hold, learn, produce and apply knowledge in their various activities and lives" (2002:3).

As for the definition of knowledge, Barth takes a pragmatic stance. Acknowledging the debates in philosophy and metaphysics, he opts for emancipating himself (and his fellow anthropologists) from a "compulsive search for truth, rationality, and scientific method" (2002:2) to stay focused on the actual ethnographic discovery.[155] In order not to run the risk of over-simplification, he builds on Bertrand Russell's understanding of knowledge that centers on a person's individual experiences: "He knows what he has seen and heard, what he has read and what he has been told, and also what, from these data, he has been able to infer to knowledge" (Russell 1948:9).

For Barth, knowledge is "what people employ to interpret and act on the world" (1995:66). In other words, he sees culture as shared knowledge, a notion that has been specified by Caulkins as "knowledge shared above a specified threshold" (2004:317). Barth advocates for a broad notion of knowledge: In his understanding, knowledge also includes "feelings (attitudes) as well as information, embodied skills as

---

[154] Boyer in fact quasi equates the two terms by referring to "the standard referentiality of a term like 'knowledge' as codifying the habituated epistemic forms produced by the human capacity for meaningful semiosis (e.g. culture, more or less, in its postwar anthropological trajectory) [...]" (2005:141).

[155] Barth himself points to similarities between his approach and the so-called 'strong program' in sciences studies (cf. Barnes et al. (1996)) that he describes as "characterized by its agnosticism with respect to the truth or falsity of specific items of knowledge" (2002:10).

well as verbal taxonomies and concepts: all the ways of understanding that we use to make up our experienced, grasped reality" (Barth 2002:1). Consequently, he does not perceive of knowledge in terms of an ideal form whose corpus is derived from a "few abstracts principles by systematic deduction" (2002:8). Rather, he recognizes knowledge as consisting of highly varying degrees of definitional specificity and abstractness: "[...] knowledge in its different modalities can range from an assemblage of disconnected empirical detail to a 'theory of everything' [...]" (2002:8).

5.4.1.2 Barth's analytical approach to knowledge

In this search for a productive approach to knowledge, Barth distances himself from a merely emic analysis of knowledge, considering it to be flawed by circular reasoning in view of presumed conceptual structures being eventually substantiated by the concepts abstracted from the same data the presumed structures were initially gained (Barth 2002). He therefore strives for a more analytical approach and formulates three fundamental aspects or 'faces' he considers to be characteristic for any knowledge form, including scientific knowledge: *First*, according to him, knowledge encompasses a substantive corpus of assertions and ideas about the world. *Second*, it entails a range of media and representations given that it needs to be represented and communicated "in the form of words, concrete symbols, pointing gestures or actions" (2002:3). The *third* characteristic involves the social organization within which the knowledge-related activities take place, as he stresses that knowledge has to be "distributed, communicated, employed, and transmitted within a series of instituted social relations" (2002:3).

Barth's approach, in other words, consists in disaggregating, dissecting and analyzing knowledge forms along these three faces.[156] With respect to the order in which these faces of knowledge are ideally studied, Barth (2002) argues that generally speaking, anyone of the three may serve as starting point; however, for the case of a complex ethnographic undertaking, he suggests that one first focuses on the social organization and on related fields of social action.

Such an approach to studying knowledge is not only applicable to 'anthropologically relevant' knowledge forms (i.e. forms of local knowledge), but is equally valid and informative when it comes to gaining a broader understanding of scientific or academic knowl-

[156] As Barth stresses, by advocating for distinguishing between the three faces of knowledge, he takes the opposite position to Clifford Geertz who stated that "to an ethnographer, sorting through the machinery of distant ideas, the shapes of knowledge are always ineluctably local, indivisible from their instruments and their encasements" (1983:4). Barth is explicitly interested and focused on these very 'shapes', 'instruments' and 'encasements' as he considers them to be decisive in the endeavor to more accurately "analyse the internal processes of differently constituted traditions of knowledge" (Barth 2002:3).

edge[157]. According to Barth, this is only consistent in that his approach is all about setting up “dimensions of description (corpus, medium, social organization) that are based on truisms about all knowledge” (Barth 2002:10).

He stresses that the three faces are interconnected and determine each other mutually. Specific knowledge forms or traditions are characterized by the way these three aspects are interrelated in specific ways:

> “Their mutual determination takes place at those specific moments when a particular item of substantive knowledge is cast in a particular communicative medium and applied in an action by an actor positioned in a particular social organization; their systematic interdependence arises by virtue of the constraints in *realization* that these three aspects impose on each other in the context of every particular application.” (Barth 2002:3 / Italics by the author)

To determine in these particular realizations repeated and enduring effects of mutual constraint and influence leads to the identification of processes of mutual determination between the three faces of knowledge. In addition, such an analytical approach allows observing three specific phenomena, Barth argues: *First*, it points at the very interplay between the three faces that in turn generates the “criteria of validity and feasibility” (Barth 2002:3) governing the specific knowledge form. *Second*, it is crucial in clarifying the “forms of coherence” (Barth 2002:3) the specific tradition of knowledge achieves. *Third*, it allows studying the “trajectory of a changing corpus of knowledge” (Fozi 2007:177) by means of identifying 'potentials' and 'constraints' of the identified criteria of validity and feasibility that have a fostering or hampering effect on knowledge production and transmission. Correspondingly, Barth (2002) argues that the trajectory of a knowledge tradition is in large part endogenously shaped and determined. Irrespective of that, he underlines that this circumstance does not throw the gates wide open to a vague relativism of what he calls ‘anything goes’.[158] Rather, it implies in his view a form of an informative relativism that allows demonstrating “how already established thoughts, representations, and social relations to a considerable extent configure and filter our individual human experience of the world around us and thereby generate culturally diverse worldviews” (2002:1).

---

[157] Cf. his analysis of modern academic knowledge along the three faces, i.e. in terms of (1) the corpus, (2) its medium and representations and (3) its social organization (Barth 2002:8–10).

[158] By doing so, Barth distances himself from the radical position held by e.g. Paul Feyerabend, i.e. more precisely from his fierce criticism of the prevalent theories of science, his rejection of the existence of universal methodological rules and his opposition against what he perceived of as orthodox dogmatism in science. After his radicalization around 1968, Feyerabend denied the existence of any binding methodological rules, objecting to prescriptive scientific methods as any such one would confine the scientists’ activities and impede scientific progress (for an account on the ‘anything goes’-position of absolute relativism cf. Russell (1983), for a general overview on the debate cf. Kupka (2013)). In this vein, Feyerabend views science as only one way among many to achieve a robust understanding of the world (next to e.g. religion or art).

With respect to the comprehensiveness of his framework for disaggregating and analyzing knowledge, Barth concedes that his modeling is simplifying the topic. The simplification consists in neglecting exogenous factors such as the material circumstances or power relations outside the local social setting that generally exert a strong influence on the very knowledge form. While for the context of concrete empirical cases, he strongly advocates for paying close attention to such externalities, he refrains from integrating these aspects into his framework with the aim of keeping it clear-cut and intelligible (Barth 2002).

Studying culture through the lenses of knowledge also sheds a light on the great variability of the stock of knowledge (Barth 1995, 2002). In contrast to culture, which is, according to him, often thought of as diffusely 'shared'[159], knowledge is better known to be distributed unevenly and to varying degrees. The variation occurs on different levels: between communities/populations, within communities/populations and within a single person's lifespan (Barth 2002). In this context, Caulkins argues that knowledge needs to be "shared above a specific threshold" (2004:317) for it to constitute a culture. In cases where this threshold is not met, Caulkins identifies three other major patterns: "(1) weak agreement or 'proto-cultural' domains, (2) idiosyncratic or fragmented domains having no real structure, and (3) multicentric domains with overlapping subcultures or non-overlapping counter-cultures" (2004:320). Against this backdrop, he discusses the relationship between the degree to which knowledge is shared and constitutes a culture or – if it is shared to a lesser degree – a proto-culture, subculture, counter-culture or, in his words, a fragmented and idiosyncratic domain.

Regarding knowledge distribution, Barth argues that differences in knowledge cause a significant part of the drive in social interactions, from "gossip to the division of labour" (Barth 2002:1). While a certain amount of knowledge needs to form the common ground necessary for communication, some differences in knowledge usually have to exist to enable and motivate our interactions. Consequently, according to Barth, understanding the "balances of sharing and difference in knowledge" (2002:1–2) is highly informative in terms of them founding social cooperation in a given social context.

Barth, however, not only points to the significant differences in knowledge distribution within a population. He also underlines the immense variability of knowledge bodies in view of the differing interpretations of the world by different cultures. Against this backdrop, he proposes that anthropology develops "a comparative ethnographic analysis on

[159] For a critique of the position cf. Hastrup (2004).

how bodies of knowledge are produced in persons and in populations in the context of the social relations that they sustain" (2002:1).

5.4.1.3 Summary of the dimensions of 'knowledge' informed

Analyzing Barth's approach to culture and knowledge[160], several insights turn out to inform an array of the dimensions of knowledge formative for this research and described earlier (cf. chapter 4.4.1), as shown in illustration 21.

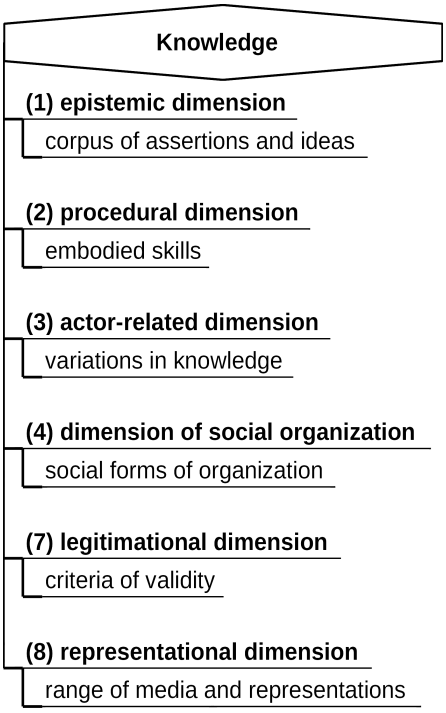

Illustration 21: Dimensions of knowledge informed by anthropology – Barth

First, his tripartite analytical approach to knowledge – namely the basic assumption that any knowledge form can be described in terms of (1) its corpus of assertions and ideas, (2) its modes of communications and (3) its social forms of organization – contributes to theoretically informing three of these knowledge dimensions. More precisely, this entails the (1) epistemic dimension that is covered and thus informed by what he calls the 'corpus of assertions and ideas', the (4) dimension of social organization that is addressed by what Barth denotes as 'social forms of organization' and, lastly, the (8) representational dimension that is covered by a range of media and actual representations that he brings up in the forms of the range of media and actual representations. *Second*, Barth's approach also contributes to informing the (2) procedural dimension of knowledge in that he also includes "embodied skills" (2002:1) in his broad understanding of knowledge. *Third*, he points to the criteria for validating knowledge that emerge from the interplay between the above mentioned three elements constituting any knowledge form, thus addressing and informing the (7) legitimational dimension of knowledge. Finally, Barth also discusses the uneven distribution of knowledge between communities/populations, within communities/populations and within a single person's lifespan, thereby contributing to grounding the (3) actor-related dimension of the knowledge holders themselves.

[160] Barth's perspective turned out to only ground 'knowledge' and not to contribute to informing 'understanding'.

5.4.2 Florence Kluckhohn and Fred Strodtbeck: Cultural value orientations

Striving to identify conceptual-analytical categories describing not only knowledge as such, but also its broader context, I turn to an anthropological approach that primarily centers on values and their structuring effect on the respective culture. This entails first discussing the theoretical approach itself (chapter 5.4.2.1) before briefly outlining a number of further developments of the theory (chapter 5.4.2.2). In chapter 5.4.2.3, I conclude by summarizing the main insights and the specific ways in which the value orientations approach contributes to informing the basic dimensions of knowledge outlined in chapter 4.4.1.

5.4.2.1 Kluckhohn and Strodtbeck's approach

In 1961, cultural anthropologists Florence Kluckhohn and Fred Strodtbeck publish "Variations in Value Orientations" (1961) in which they present a theory of culture based on value orientations. They assume that in any given society, values occur in a specific distribution that reflects the rank-order of preferences of the society in question. This value-related rank-order, they argue, forms the basis for the more tangible cultural values, beliefs and norms – and, as Gallagher (2001b) stresses – even shapes the society's heroes, rituals and popular songs. Next to characterizing the society as such, the different patterns of ranking also allow for distinguishing societies from each other, Kluckhohn and Strodtbeck argue. In their work, they build on and extend the ethnographic work of Clyde Kluckhohn (1951b) who defined a value as "[a] conception, explicit or implicit, distinctive of an individual or characteristic of a group, of the desirable, which influences the selection from available modes, means and ends of action" (1951b:395). He argued that "humans share biological traits and characteristics, which form the basis for the development of culture, and that people typically feel their own cultural beliefs and practices are normal and natural, and those of others are strange, or even inferior or abnormal" (Hills 2002:4).

Shifting the focus from values to value orientations, which they understand as basis assumptions or orientations upon which a culture composes its value system (Gallagher 2001b), Kluckhohn and Strodtbeck invest in explaining cultural differences with a special focus on value variability and in determining cultural variation in value orientations. They understand value orientations as "[c]omplex but rank-ordered principles, resulting from the transactional interplay of three analytically distinguishable elements of the evaluative process – the cognitive, the affective and the directive elements – which give order and direction to the ever-flowing stream of human acts and thoughts as

these are related to the solution of common human problems" (Kluckhohn and Strodtbeck 1961:4).

The aspect of 'common human problems' and their 'solution' is crucial for their approach. Starting from the assumption that there are a) a limited number of problems common to all humans that need solutions at all times and b) a limited number of solutions to those problems, they conclude that the problems and corresponding solutions could be expressed by so-called 'value orientations' (1961:12).[161] These value orientations could then serve to describe a society's predominant value system as well as to draw distinctions between societies. In other words, according to Kluckhohn and Strodtbeck, value orientations arise from challenges that everybody needs to solve regardless of their specific cultural setting and that bear an influence on concrete everyday decisions.

In this vein, they identify six dimensions or human problems they consider to be universal. These include the following fundamental challenges:

A. Man-nature orientation: What is the relation of man to nature? / How do we view the environment?
B. Relational orientation: What is the relation between men? / How do we see relationships among people?
C. Time orientation: What is the temporal focus of human life? / How do we think about and use time?
D. Activity orientation: How do we posit ourselves in the world?
E. Human nature orientation: What is the basic human nature?
F. Space orientation: How do we think about and use space?[162]

In a next step, Kluckhohn and Strodtbeck spelled out the possible generic answers to these questions, arguing that the favorite answer in any society mirrors its fundamental orientation towards that specific facet of its environment (Hills 2002). Given that these challenges represent universal ones, Kluckhohn and Strodtbeck expected that the different approaches to resolve them provide an avenue for eventually measuring and comparing cultures. As for the concrete answers to these five (or six, cf. below) challenges, they realized that people are highly likely to react in one of three ways to the challenges A-D enumerated above, thus suggesting a three-point continuum to represent the potential answers. In contrast to this, with respect to question E regarding the human nature orientation, they considered a 'dual' answer with respective sub-cate-

[161] According to Gallagher, 'value orientations' can be thought of in terms of the somewhat more contemporary concept of "core values" (2001a:3).

[162] While Kluckhohn and Strodtbeck described the sixth value orientation pertaining to 'privacy of space' on a theoretical level, they decided not to continue with empirical research in this direction. This resulted in the sixth dimension often being completely omitted.

gories to adequately display the situation. Question F on the space orientation was introduced by Kluckhohn and Strodtbeck, but later abandoned and taken up by other researchers whose three-point continuum is displayed below.

These deliberations resulted in the following three- (or two-) point continuum for each challenge:

A. Man-nature orientation: This issue involves human relationships to nature and tackles whether people opt (a) for controlling or mastering nature as well as the super-natural (*domination)*, (b) for working together with nature in order to maintain a balance (*harmony*), striving for partial, but not total control or (c) for submitting to nature and its occurrences, given that life is considered to be determined by external forces such as e.g. God, fate or nature itself (*subjugation*) (Kluckhohn and Strodtbeck 1961:13).

   Three-point continuum: (a) domination – (b) harmony – (c) subjugation

B. Relational orientation: This challenge deals with the relationships between people, i.e. more precisely with the relationship of the individual with others. According to Kluckhohn and Strodtbeck, whether the primary focus is placed on the group or the individual allows for the following three configurations: (a) hierarchical principles and subordination to a higher authority or authorities within the group (*hierarchy)*, (b) egalitarian consensus with an extended group of equals based on collective decision-making processes (*group-orientation*) or (c) the individual or individual families within the group deciding on their own, independently of others (*individualism*) (Kluckhohn and Strodtbeck 1961:17–19).

   Three-point continuum: (a) hierarchy – (b) group-orientation – (c) individualism

C. Time orientation: This issue concerns the dominant orientation towards time and inquires the extent to which individuals and groups in a given society allow past, present and future to influence their decisions and subsequent actions. Consequently, with respect to decision-making, there are three potential constellations involving the time dimension: (a) Individuals are primarily influenced by the past and strive to maintain and preserve traditional teachings and beliefs (*past*), (b) they are in first place influenced by the present and immediate needs while focusing on integrating changes in beliefs and traditions to the extent necessary (*present)* or (c) they are foremost influenced by future prospects and needs and seek to plan ahead and look for new ways to proactively replace old structures (*future*) (Kluckhohn and Strodtbeck 1961:13–15).

Three-point continuum: (a) past – (b) present – (c) future

D. Activity orientation: This challenge deals with the beliefs in the society in question regarding appropriate human goals and discusses differing prime motivations steering behavior. The three options suggested by Kluckhohn and Strodtbeck include the following: (a) Individuals can focus on living in the present moment and display a strong internal motivation for their behavior (*being*), (b) they can aim at developing themselves and growing in abilities into an integrated whole – abilities valued by the individual itself, but not necessarily by others (potential mixture of internal and external motivation) (*being-in-becoming*) or (c) they can strive to achieve specific goals and accomplishments, fueled by external motivation and subsequent approval to do so (*doing*) (Kluckhohn and Strodtbeck 1961:15–17).

   Three-point continuum: (a) being – (b) being-in-becoming – (c) doing

E. Human nature orientation: This challenge takes up the beliefs in a given society about human nature. In contrast to the previous four issues, Kluckhohn and Strodtbeck explore two main dimensions along related sub-dimensions, suggesting a somewhat more complicated structure for studying this challenge. On the one hand they propose (A) the qualitative dimension, describing human nature as (a1) good, (a3) bad or (a2) mixed with “mixed” implying either a mixture of good and bad or a neutral state. On the other hand, they stress (B) the dimension of mutability, i.e. the question (b1) whether one is born the way one is with no option for change or (b2) whether one can learn to change (in whatever direction) (Kluckhohn and Strodtbeck 1961:11–12).

   Two-point continuum: (A): (a1) good – (a2) mixed/neutral – (a3) bad (B): (b1) immutable – (b2) mutable

The following table 4 shows the five different value orientations and the possible variations Kluckhohn and Strodtbeck identified for each orientation:

orientation	postulated range of variations					
man-nature	subjugation		harmony		mastery	
relational	hierarchy		group-orientation		individualism	
time	past		present		future	
activity	being		being-in-becoming		doing	
human nature	evil		neutral	mixture of good-and-evil	good	
	mutable	immutable	mutable	immutable	mutable	immutable

Table 4: The five value orientations and the range of variations postulated for each[163]

As mentioned earlier, Kluckhohn and Strodtbeck discuss a sixth orientation, namely the spatial dimension. They, however, refrain from elaborating it or integrating it into their framework, arguing that the ranges of variability related to this orientation have not yet been sufficiently worked out, among others with respect to the time orientation (1961:10, 14).

Notwithstanding this, for the purpose of this research, the space orientation is included since I consider space, or the spatial dimension in general, to represent a crucial dimension in face of this research's ultimate aim, i.e. to develop a framework for understanding *local* knowledge.

F. Space orientation: This challenge deals with the conception of space prevalent in a given society. It relates to issues such as how space is treated in a society, who owns it and what rights individuals and groups have to occupy and use this space. In a first draft, Kluckhohn and Strodtbeck suggest three potential ways of structuring space, namely 'here', 'there' and 'far away'. Other authors such as Thomas (2008) or Maznevski et al. (2002) propose to think about space in terms of whether it is considered to be foremost (a) public, (b) mixed or (c) private. This perspective stresses that the space can belong to everyone as in (a) or to specific individuals as in (c) with mixed variants in between (b).

   Three-point continuum: (a) public – (b) mixed – (c) private

Methodologically, Kluckhohn and Strodtbeck's conceptualization of cultural variation does not represent a bipolar approach (Thomas 2008), implying that a high preference for one variation does not necessarily entail low preferences for the other variations. Rather, they assume that "all alternatives of all solutions are present in all societies at all times but are differentially preferred" (1961:10). Accordingly, they posit that next to a dominant profile of value orientation characteristic for a given society, there are a num-

[163] This table is an adaptation of the original overview published by Kluckhohn and Strodtbeck (1961:12).

ber of co-existing alternative, albeit numerically less prominent profiles, which add to the overall diversity observable within one society. In this context, Carter (1990:3) underlines that notwithstanding an identical rank-order of dimensions, societies can diverge largely in case of a “relative difference of preference for each of the dimension”.

To substantiate their theoretical approach, Kluckhohn and Strodtbeck carried out extensive field research and conducted the so-called ‘Rimrock Study’ in the American Southwest where they used ethnographic and quantitative methods to study how people in different cultural settings respond to these challenges (Kluckhohn 1951a, 1956)[164].[165] To this end, they compared five communities they considered differing in their societal organization while at the same time being located in a relatively similar physical and sharing a similar institutional context. These communities included a Mexican American village, a Navaho Indian band, a Zuni pueblo, a Mormon community and a Texan community. Concerning the fundamental dimensions, Kluckhohn and Strodtbeck decided to focus on just four of them, leaving out the human nature orientation they considered problematic to operationalize.

5.4.2.2 Further development of the value orientations approach

Given Kluckhohn and Strodtbeck’s field research demonstrated the validity of their approach, applications by other researchers in a number of field followed, including in higher education (Carter 1990), cross-cultural management training in organizations (Gopalan and Rivera 1997; Maznevski et al. 2002) and conflict resolution (Russo 2000). The latter field exemplifies the potential of the approach for illuminating and informing interactions between different parties, given that understanding one’s own basic value orientation as well as the one of the opposing side can support conflict parties in “refrain[ing] from misattribution of meaning and intent” (Gallagher 2001b:5).

Next to its application in conflict contexts, the value orientation approach also proved to be a valuable tool when working with indigenous people in the frame of development initiatives. A prominent example is its application in healthcare and medical treatment of indigenous people in Canada (Brink 1984) and Nigeria (Brink 2000). In a similar vein, the work of Russo (1992; 1984) describes an application of the method to foster living standards of a Native American tribe, the Lummi of Washington state, by means of empowering the natives in gaining a clear picture of both their own cultural mores and

[164] These two studies have been authored by Florence Kluckhohn's husband Clyde Kluckhohn who was closely involved in the conception of the ‘Rimrock study’.

[165] A comprehensive review of the ‘Rimrock Study’ was published several years later by Vogt and Albert (1966).

those of the white majority around them with which they engage in trading activities (for a detailed account cf. Hills (2002)).

These studies all build on the insight that a meaningful interaction between members of different cultural groups is potentially hampered if they do not share similar core values or are not aware of potential differences in their worldviews resulting thereof. Comprehension and communication problems of this sort can lower the effectiveness and value of work invested by all parties involved with one example being the case of Western players interacting with traditional organizations such as tribal councils.

In addition to the extension of the value orientation approach to these different fields, it is considered to have been foundational for a number of other models depicting cultural dimensions developed subsequently (for an overview on the overlaps cf. e.g. Maznevski et al. (2002); Nardon and Steers (2009)). The respective models include approaches by Hall (1966, 1976, 1983; 1990), Hofstede (1980, 2001), Trompenaars (1993), Schwartz (1992; 1995) and research conducted in the frame of the project GLOBE (Global Leadership and Organizational Behavior Effectiveness Research Project) by House et al. (2004).

With respect to advancing the value orientation approach itself, Hills (2002) underlines that Kluckhohn and Strodtbeck “left ample opportunity for further development of their theory” (2002:9) given that they themselves consider it incomplete and given that not all orientations proposed are fully operationalized. On this background, Hills elaborates on the aspect of 'allocation of space'. Moreover, he suggests complementing the fundamental questions to which all societies must find answers by another four. In this vein, he proposes adding a number of new dimensions – (G) 'nature of work', (H) 'relationship between the genders' and (I) 'relationship between individual and state' – and points to additional dimensions o tackle in the future such as the (J) 'meaning of life and death' or the (K) 'nature of the supernatural and humanity's relationship to it'.

5.4.2.3 Summary of the dimensions of ‘knowledge’ informed

Summarizing the value orientations approach introduced by Kluckhohn and Strodtbeck and complemented by Hills and analyzing how it contributes to informing the dimensions of knowledge[166] outlined earlier (cf. chapter 4.4.1) shows that this theory indeed provides ample grounding for one of the knowledge dimensions, namely, the (5) contextual dimension of knowledge (cf. illustration 22).

[166] The analysis revealed that Kluckhohn et al.’s approach does not contribute to grounding ‘understanding’, but only informs ‘knowledge’.

It denotes the cultural context in which a knowledge form is located. Based on their theory of variations in value orientation, Kluckhohn and Strodtbeck argue that cultures differ on six value orientations that, in turn, are derived from six fundamental problems that all societies face and need to resolve according to their own preferences. They argue that the overall cultural diversity reflects the diverse approaches to tackling these issues and outline that cross-cultural communication could be facilitated by analyzing and understanding a given culture's or society's orientation with respect to these six key facets of human life.

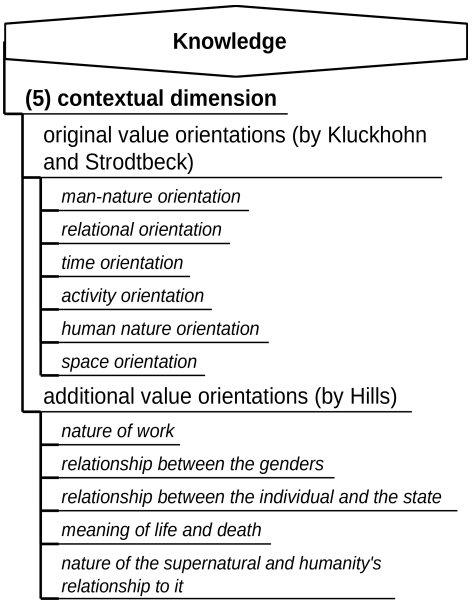

Illustration 22: Dimensions of knowledge informed by anthropology – Kluckhohn/Strodtbeck/Hills

These facets or orientations include (A) the relationship of individuals and groups with nature (i.e., the notion that humans should be dominant over nature, be subordinate to nature or live in harmony with nature), (B) the relationship of among individuals within a society (i.e., hierarchical, group-oriented/collective-egalitarian or individualistic), (C) the relationship with time (i.e., primary focus set on past/tradition, present/enjoyment or future/delayed gratification), (D) the relationship regarding the favored form of human activity (i.e., being, becoming-in-being or doing), (E) the evaluation of human nature (i.e., people seen as essentially good, bad, mixed and mutable, immutable) and (F) the relationship with space (i.e., public, mixed, private)[167].

Building on Kluckhohn and Strodtbeck's approach, Hills introduced additional key aspects of human life, thus providing even more specification to the contextual dimension. More precisely, Hills argued for integrating the following set of key aspects of human life: (G) 'nature of work', (H) 'relationship between the genders' and (I) 'relationship between individual and state, (J) 'meaning of life and death' and the (K) 'nature of the supernatural and humanity's relationship to it'.

[167] As outlined earlier, Kluckhohn and Strodtbeck did not elaborate on the relationship with space, which, however, is nevertheless attributed to them given that they introduced it in the first place.

5.4.3 Brent Berlin: Knowledge in traditional systems of classification

With the aim of distilling conceptual-analytical categories describing the structure and organization inherent to knowledge bodies, I include the theoretical contribution by Brent Berlin and colleagues that was central in forging the entire field of ethnobiology.[168] In the following chapters, I focus on the aspects of Berlin's extensive oeuvre that are most formative for this research's topic, namely his analysis of the structure and character of local knowledge forms. It is embedded in his diverse research interests covering the topics of folk classification of living things, color naming schemes and cross-cultural/-lingual patterns in the nomenclature for flora and fauna.

In regard to the structure of the chapter, I first sketch the emergence of the discipline of cognitive anthropology to whose development Berlin's research contributed substantially (chapter 5.4.3.1). Next, I outline Berlin's model for ethnobiological classification (chapter 5.4.3.2), before describing his contribution with respect to naming colors (chapter 5.4.3.3). In chapter 5.4.3.4, I conclude by summarizing the main insights drawn from his theory and describe the ways in which it contributes to informing the dimensions of both 'knowledge' and 'understanding' (cf. chapters 4.4.1 and 4.4.3).[169]

5.4.3.1 The emergence of cognitive anthropology

Berlin is one of the main exponents of cognitive anthropology, a discipline that examines the intellectual and rational aspects of culture, particularly through studies of language use, namely formal structural semantics. Cognitive anthropology (also originally known as 'ethnographic semantics', 'the new ethnography' or 'ethnoscience') rejects the hitherto dominant notion of culture in terms of artifacts or behavior and, alternatively, argues for thinking of culture as of systems of knowledge or mental dispositions (Brown 2006). As such, cognitive anthropology operates under the following two central premises: a) culture is located in individuals' minds and b) semantic categories designated by linguistic forms relate to meaningful cultural categories. Accordingly, cognitive anthropology views culture as, to refer to Goodenough's famous passage,

> "[…] whatever it is one has to know or believe in order to operate in a manner acceptable to its members, and do so in any role that they accept for any one of themselves. Culture, being what

[168] Ethnobiology' denotes the study of dynamic relationships among peoples, biota and environments of which knowledge forms are a central element.
Contemporary ethnobiology emerged from research on the traditional classification of and cognition about nature. In the 1950s and early 1960s it formed from linguistic, biological and cognitive anthropological research at Harvard and Yale and led to the broader field of so-called 'ethnoscience', a term first introduced at Yale in the 1950s (Anderson 2012).

[169] Importantly, Berlin's research only *indirectly* informs the dimensions of knowledge and understanding, given his specific research focus, which is described in more detail in the overview in chapter 5.4.3.4.

people have to learn as distinct from their biological heritage, must consist of the end product of learning: knowledge, in a most general, if relative, sense of the term" (1957:167).

Against this background, cognitive anthropology aims at reconstructing a community's or society's culture; to this end, it studies how individual categories interrelate with shared cultural categories, aiming at uncovering mental processes and learning "how cultural knowledge is organized within and between human minds" (D'Andrade 1995:248).

The sub-discipline of anthropology arose in the late1950s/early 1960s out of the inter-disciplinary debate between linguistic anthropology, formal linguistics and cultural/social anthropology and was accompanied by an increasing focus on cognitive phenomena across the social biological sciences (Antweiler 2009; Blount 2011; Brown 2006). The early research from the 1950s and 1960s mainly studied how different cultures classify the natural environment and kinship relationships in so-called 'folk models' or 'cultural models', thereby analyzing the unconscious set of understandings and assumptions shared by members of a group or society (for an overview on 'cultural models' cf. Brown (2006)). The 1970s and 1980s saw the development of more sophisticated cognitive theories of classification that allowed for more differentiation and were accompanied by an overall shift of focus from rules to (culturally specific) schemes. More recently, the definition of language was broadened, the salience of non-linguistically coded understandings was taken into account and linguistic approaches have, at least in parts, given way to more psychologically-oriented ones (cf. e.g. Coley et al. (1996)). This led to contemporary cultural anthropologists studying topics such as cultural models, emotion, motivation and action.[170]

Methodically, its proponents opted for rigorous methods to ensure scientific standards (Ross and Medin 2016), not at least to delineate cognitive anthropology from the hitherto traditional anthropological approach dominant until the late 1950s. Mostly taking the form of ethnography as propagated by Malinowski and Boas, traditional anthropology relied largely on myths and customs as sources of anthropological evidence and based its understanding on a set of predefined categories such as village, local group, family composition, political organization, religion, witchcraft, magic or native cosmologies (D'Andrade 1995).

Cognitive anthropologists, in contrast, were critical of the widespread symbolic or interpretative approaches in anthropology advocated for by e.g. Clifford Geertz, Victor

[170] For an overview on the academic debate in cognitive anthropology cf. D'Andrade (1995), for a focus on the latest developments cf. Anderson (2016), for an overview on its role within the broader field of cognitive sciences cf. Rothe (2012).

Turner, David Schneider or Claude Lévi-Strauss, arguing that interpretative anthropology far too heavily relies on the anthropologists' intuitive abilities, which, in turn, defies any external verification (Antweiler 2009). The relevance of such verifications, however, became apparent when research showed that recorded ethnographies of communities change substantially over time.[171] This insight led to questioning the accuracy and reliability of existing ethnographic methods, including the Malinowskian ideal of the 'lone anthropologist' writing about individual peoples after extensive field stays in the respective societies.

In contrast, in its quest for more objective methods, cognitive anthropology was not concerned with imposing categories but with discovering them by means of cognitive techniques aiming at eliciting information, i.e. systematic data collection (including e.g. free-listing), structured interviewing and statistical analyses[172]. The focus on discovery also led to the introduction of the distinction between 'etics' and 'emics' (cf. chapter 1.3.2) which enabled linguists to distance themselves reflexively from their own biases and preconceptions, to the greatest extent possible. In a similar vein, consensus mapping and theory were introduced to analyze patterns of agreement among respondents as a way of determining the correctness and accuracy of these statements (Borgatti and Halgin 2016).

Generally speaking, cultures were no longer understood as primarily material phenomena, but came to be seen as cognitive organizations of material phenomena, i.e. as knowledge. This also explicates why the term 'cognition' is often replaced with 'cultural knowledge' that is thought of, in Antweiler's words, as the "culturally specific and shared knowledge body of a collective" (2009:46; translated from German by the author). According to him, cognitive anthropology assumes that people need a certain stock of knowledge that allows them to adequately act in a culturally sensitive way in their specific contexts. Consequently, cognitive anthropology focuses on learning what people know (1) about the categories of their world (e.g. plants, animals, kinship relationships, supernatural/divine world etc.), (2) about processes and procedures (e.g. course of the seasons, implicit rules for correct behavior in daily life/in rituals) and (3) about relations and interdependencies (e.g. causal relationships and world models) (Antweiler 2009). In general, cognitive anthropologists focus on the mental ordering of what one perceives as his/her reality and livelihood context – this ordering is understood as 'cultural knowledge'. As such, the main issue at stake for cognitive anthropol-

[171] For an account of the Redfield-Lewis controversy regarding the ethnographic account of the Mexican village of Tepoztlan recorded first in the late 1920s and quite divergently again in the late 1940s cf. Burawoy (2003).

[172] Even artificial intelligence is applied for computer-aided discourse semantics, an example of which is described by Agar and Hobbs (1982).

ogy was and is the quest for “culturally specific ways of thinking” (Antweiler 2009:66; translation by the author).

Researching such knowledge is fueled by three reasons: *First*, it serves to explain specific, observed behavior by means of cognition and underlying mental models. *Second*, it is crucial for understanding the inner structure and organization of knowledge domains and for generalizing these in models (resulting in so-called ‘models of models’). *Third*, on a more universalistic note, it contributes to finding out whether there are culturally overarching patterns of thinking – be it on regional, national or even universal levels – that are empirically verifiable.

With respect to the overall field of cognitive anthropology, Berlin focuses foremost on researching semantics and knowledge structures, more precisely the semantic categories identified in extensive and linguistically founded studies of terminology systems. Topically, Berlin’s invests heavily in two issues – ethnobiological classification/nomenclature and color naming. These two topical interests of his are discussed in more detail in the following chapters 5.4.3.2 and 5.4.3.3 respectively.

5.4.3.2 Ethnobiological classification and nomenclature

Ultimately aiming at better understanding universal and culturally-specific aspects of folkbiology, Berlin invested in portraying and explicating the nature and structure of folk biological taxonomies and related reasoning processes, including concepts, categories and taxonomies of predominantly non-Western cultures. Studying them in numerous parts of the world, he and his collaborators came across surprisingly extensive regularities in the way how people of traditional non-literate societies classify and name the plants and animals in their environment, in addition to noticing an overall similarity between these local approaches and the Western Linnaean classification system.

In the course of extensive field stays the researchers came to understand that organisms are not, as priorly expected, classified according to straightforward characteristics such as color, size or usability, but along morphological traits and what he calls ‘typical configurations’, both of which are often difficult to detect (Antweiler 2008). The insight that these regularities predominate across local environments, societies, cultures and languages led the researchers to propose general and universal principles of classification and nomenclature for living beings (Berlin, Breedlove, and Raven 1973). These principles embody the structural and substantive typological characteristics encountered among systems of ethnobiological classifications of traditional peoples. In this context, Ellen (2004:423) speaks of the “remarkable extent to which cultures converge

on the same answers and solutions". Taking up this line of thought, Anderson adds that the far-reaching consonance between scientific and folk systems around the globe is "devastating to the view that science is purely a cultural or social construction" (2012:3) – an idea called into question in light of the insight that people all over the world utilize inferred biological relationships and, eventually, come to see more or less similar ones.

Given its reach, the approach by Berlin and his collaborators also generated some criticism from the scientific community whereupon more studies on the underlying classificatory coherence of the ethnobotanical knowledge of local communities were carried out. Two decades after the first publication in 1973, Berlin (1992) produced a revised approach, responding to criticism from the scientific community and building on additional data.

As for the origin of the underlying classificatory coherence of ethnobotanical knowledge, Berlin (1992) hypothesized that a natural tendency to perceive and classify the world in a particular way must be inherent to humans, including the act of inferring natural kinds (regarding inference also cf. Hunn and Brown (2011)).[173] He explains this widely observable focus on inferred biological relationships by what he calls a "largely unconscious appreciation of the natural affinities among groupings of plants and animals" (Berlin 1992:xi) that in humans turned out to be similarly structured, regardless of the respective cultural background and ecological and social contexts.[174]

According to him, this similarity is, however, not grounded in utilitarian or symbolic reasons; quite to the contrary, Berlin (1992) came to understand that recognizing and naming a grouping of organisms happens rather independently of any symbolic connotation or of their current or potential future usefulness.

In the course of their undertaking to uncover the universal principles underlying and guiding folkbiological category organization, Berlin et al. (1973) identified a number of structural characteristics. This led, on the one hand, to the compilation of twelve so-called classificatory and nomenclatural 'principles' that concern the relations that hold between taxa of various ranks or categories. These principles are intended and expected to be widely universal and therefore applicable to a multitude of traditional ethnobiological systems. On the other hand, arguing for the universality of taxonomic hier-

[173] Questioning this central tenet, alternative approaches claimed that classification systems center on the symbolic and/or economic significance of the organisms in question. Representatives of a cultural relativist view were critical of the undertaking as such and considered the attempt to strive for scientific rigor in ascertaining cross-cultural patterns to be pointless, arguing that the singularity of every human experience impedes any generalization (Berlin 1992).

[174] This tenet has been criticized by Ellen (1993), among others in his publication on how the Nuaulu classify animal categories. According to Anderson (2012:4) it is, however, safe to say that this critique "stands more in the line of qualification than refutation".

archy, Berlin et al. (1973) posited a five- (or six-) level hierarchical structure containing five (or six)[175] taxonomic ranks (formerly called 'categories'). These, Mandaville (2004) adds, proved to be basic across all non-literate societies and across different languages. Proceeding from the most to the least inclusive, these categories – also called "default taxonomy" by Malik (Antweiler and Kerns 2016:314) – include:

(0) Unique beginner (e.g. plants, animals): This rank represents the most inclusive of all and refers to all plants or animals in general. It was later replaced with the somewhat more intuitive term 'kingdom'. In folk systems, this rank often remains unnamed (Berlin 1992).

(1) Life form (e.g. tree, mammal): The rank of life form is generally composed of a few highly inclusive terms that represent a few shared gross morphological characteristics. Correspondingly, it encompasses broadly used terms to specify organism types such as 'grass', 'trees' and 'vines' for plants or 'snakes', 'mammals' and 'fish' for animals.

(2) Generics (e.g. pine, dog): This rank refers to basic kinds of plants and animals and is generally named by primary lexemes, i.e. unanalyzable names such as 'tiger' or 'oak'. In general, the so-called folk generic rank is the core of almost all folk biological taxonomies (Antweiler 2008) or in Berlin's words, "the basic building blocks of all folk taxonomies" (Berlin, Breedlove, and Raven 1974a:27). Folk-generics have a tendency to correspond to biological genera or species.

(3) Specifics (e.g. white pine, shepherd dog): They represent particular kinds of generics (where the latter are subdivided by name).

(4) Varietals (e.g. eastern white pine, Shetland shepherd dog): This rank encompasses subdivisions of the last rank, i.e. of specifics that carry an own name.

In its initial form, Berlin et al. (1973:215) suggested a hierarchically organized scheme to represent the different ranks (cf. illustration 23, scheme in diagrammatic form[176]):

[175] An additional, sixth possible rank called 'intermediate' was suggested that would fall between the 'life form rank' and the 'generic rank'. In general, taxa at this level tend to have no explicit name and are often not as clearly demarcated as generic species or life forms. At the same time, research showed that there is a psychologically evident inclination to form intermediate taxa at a level approximately between the scientific family and order (Atran 1983, 1998; Berlin 1992).

[176] Due to space constraints, only an exemplary number of the existing taxa is displayed at levels 1-4; in the same vein, the category 'intermediate' had to be omitted.

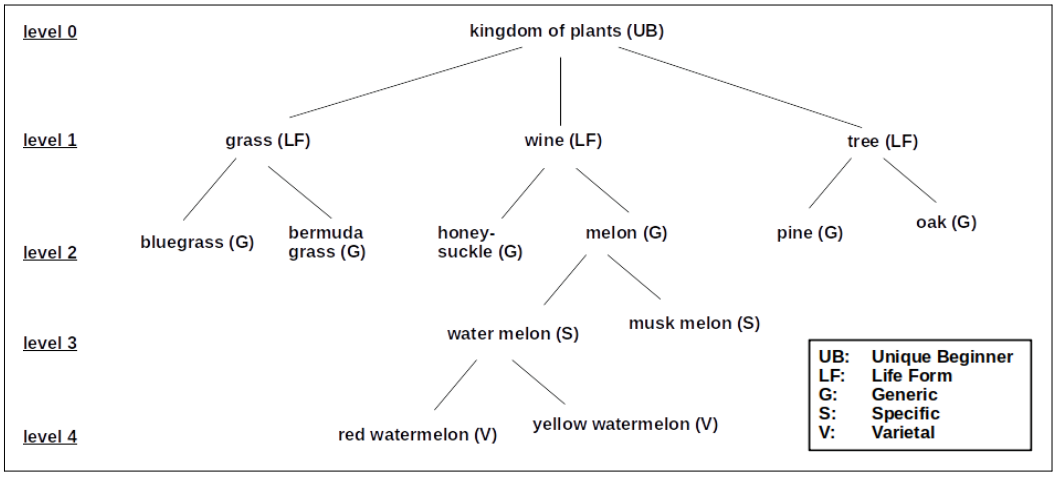

Illustration 23: Relationship of the 5 universal ethnobiological taxonomic categories and their relative hierarchic levels

Given that there was a broad agreement among ethnobiologists on the usefulness of some form of typology suitable for descriptive and comparative purposes (Hays 1983), the introduction of the classification model by Berlin was widely welcomed. In subsequent years, substantial research was conducted on folk classification with the aim to apply and test these 'general principles' across a broad spectrum of societies (Mandaville 2004).

However, Berlin at al.'s approach has also been the subject of criticism (cf. e.g. Mandaville (2004); for an overview cf. e.g. Júnior et al. (2016)). On a fundamental, philosophical level Berlin's research represents a challenge to all those anthropologists (mostly adhering to cultural relativism) who, in Berlin's own words, "see reality, in both its natural and social forms, as a set of culturally constructed, often unique and idiosyncratic images, little constrained by the parameters of an outside world" (1992:xi).[177]

More specifically, some critiques relate to terminological matters (cf. e.g. Bulmer (1974)) or question the validity of specific classificatory ranks (cf. e.g. Brown (1974)). Others aim at structural issues as e.g. Hunn and French (1984) who critique the ubiquitous utilization of the hierarchical principle of inclusion that in their own ethnographic research did not dominate, but co-existed with coordinative approaches, expressed in relationships with 'core' or prototypical taxa (Mandaville 2004). Ellen (1986), in turn,

[177] The differing positions have to be related to the paradigmatic tension between the so-called 'utilitarianists' and the 'intellectualists' in ethnobiological research (cf. Brown (1995)). The former – of which Malinowski is a prominent representative – hold that people tend to name and classify things that matter in their lives, notably food or raw materials, resulting in names and classification of living things manifesting mainly material concerns. In contrast, intellectualists claim that said names and classifications originate from autonomous mental processes ingrained in the human species and that people invest in naming things that are of no use to them, or as Sillitoe concludes with a reference to Descartes, these things "are there, hence they think about them" (2002a:1164). Balée specifies in this respect that the characteristics of this tension resemble the "century-old tension in anthropology itself between cultural and linguistic relativity, on the one hand, and rationalism and evolutionism, on the other" (1993:145). No doubt, Berlin associates himself with the latter group, expressing a rationalist point of view (1992:11–13).

questioned the actual basic decision to ascribe a hierarchical ethnobiological classification system to all societies, arguing that it potentially imposes the structural biases derived from the Western classical Linnaean system of scientific taxonomy.

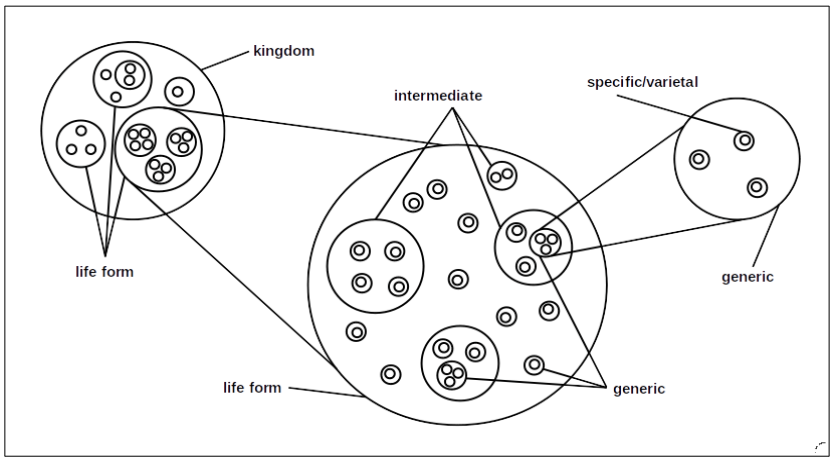

Illustration 24: Telescoping Venn diagram by Berlin

In his reply from 1992 after close to 20 years of research on the subject, Berlin introduced a number of changes and adjustments, while underlining that "the fundamental outlines of the original framework are basically sound" (Berlin 1992:xii). One of the easily notable changes entails turning away from the formerly numbered 'levels' of ranks that constituted the vertical dimension of the taxonomic diagram from 1973. Instead of the tree diagram, variations on the Venn diagram of mathematical set theory were considered more appropriate in displaying folk taxonomic ranks (cf. illustration 24, simplified from Berlin (1992:23)).

5.4.3.3 Color naming/nomenclature

Intended as a challenge to the hitherto predominant theory of linguistic relativity formulated by Edward Sapir and Benjamin Lee Whorf in the 'Sapir-Whorf hypothesis' (Kay and McDaniel 1978), the publication "Basic Color Terms: Their Universality and Evolution" (1969) by Brent Berlin and Paul Kay suggests a relatively novel[178] – and universalistic – approach to the topic. Challenging the dominant assumption that color categories were culturally relative (Davies and Corbett 1998), Berlin and Kay show the existence of universal semantic constraints in the field of color terminology. To that end, they distill universal restrictions on the number of basic color terms a language can possess as well as the modes the language can use these terms. Hence, the novelty consists foremost in that color cognition is no longer seen as a cultural [i.e. relativistic] process, but rather as an innate, physiological [i.e. universalistic] one.

[178] As a matter of fact, Berlin and Kay extend the color research by Lenneberg and Roberts (1955) in which they describe their findings on color recall in Zuni speakers. With Zuni having one term for the colors of yellow and orange, Zuni speakers showed greater difficulty in color recall for these colors than English speakers who would naturally differ between the two colors given that English has terms for both colors. Later, Brown and Lenneberg (1954) attributed this phenomenon to the property of 'codability' that denotes a) the ease with which native speakers can name things and b) the impact of naming on cognition and behavior.

In their research, Berlin and Kay (1969) investigate color terminology formation across languages and demonstrate manifest universal trends in color naming. They found that contrary to the general assumptions, the differences between different languages prove to be far from random, but indicate the existence of overarching patterns.[179] In their theory of basic color terms they present three basic conclusions, i.e. a) that the world's languages share all or part of a common stock of color concepts, b) that each culture has a basic color term set that can be deducted from the number of color terms the culture has and, finally, c) that the terms for these concepts evolve in a so-called 'constrained order' following one after the other. As far as c) is concerned, these constraints consist of a range of criteria defining and delimiting what counts as basic color.

According to Berlin and Kay (1969), a basic color denomination (or a 'basic color term') has by definition to meet the following five criteria: a) It is monomorphemic (i.e. containing just one morpheme or a one single term, b) monolexemic (i.e. consisting of just one lexeme and being non-compositional – e.g., blue, not bluish or light blue), c) with an application to a wide range of objects instead of a narrow restriction (unlike in the case of e.g. 'blonde', which is only used for hair, wood and beer), d) its signification is not contained in that of any other color term (unlike in the case of e.g. 'crimson', which is a type of red) and e) it has to be psychologically pertinent for informants (unlike in the case of a color described as 'the color of uncle's car', which is not generally comprehensible as color description).

Studying the languages from speakers of twenty different languages from a number of different language families in search of their respective color designations, Berlin and Key (1969) identify eleven possible basic color categories: white, black, red, green, yellow, blue, brown, purple, pink, orange and gray whereby the order in which the colors are listed is determined (cf. 'stages' below). They show that all cultures have at least terms for black (also perceived as dark-cool) and white (also perceived as light-warm) as minimal binary equipment; accordingly, they refer to such (color-wise) binarily-organized languages as "stage I languages"[180]. If cultures have three or more color terms, their research shows, the subsequent colors are added in a fixed sequence, given that almost universally, certain hues are recognized as more focal than others. Against the backdrop of eleven basic colors, this led to a total of seven stages into which cultures fall according to Berlin and Key (1969):

[179] This was seen as a compelling argument against linguistic relativity (Gumperz and Levinson 1991), a conclusion disputed by relativist researchers such as Lucy (1999), Levinson (2000) or Saunders (2000).

[180] Papuan Dani is said to represent such a stage I language (Hardin and Maffi 2009).

- stage I: dark-cool and light-warm (covering a larger set of colors than English ‘black’ and ‘white’)
- stage II: red
- stage III: either green or yellow
- stage IV: both green and yellow
- stage V: blue
- stage VI: brown
- stage VII: purple, pink, orange or gray

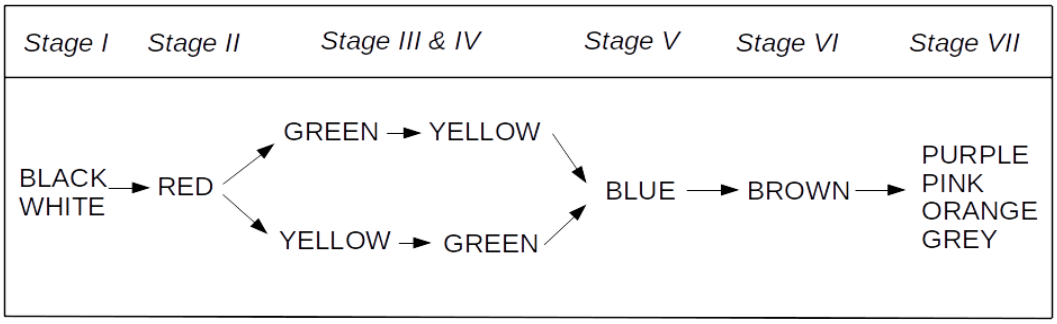

Illustration 25: Evolutionary color encoding sequence (initial version)

Illustration 25 depicts this evolutionary sequence (based on Berlin and Kay (1969:4)). In this approach, stage VII languages have eight or more basic color terms (with the example of English having eleven basic color terms and Slavic languages having twelve, with separate terms for light blue and dark blue[181]). As reported by Berlin and Key (1969), languages acquire new basic color terms in a strict chronological sequence along these stages, implying that if a basic color is present in a language, the colors of all earlier stages are expected to also be found. Considered together, the color sequence is interpreted in a first version as stages in an evolutionary sequence, a position the authors later revised (Kay et al. 2009).

While the research by Berlin and Key gained widespread influence and led to the sequence of colors being incorporated in many textbooks, it was also met with criticism, especially from the part of relativists who challenged its inherent universalism (Levinson 2000; Lucy 1997a, 1999; Saunders 2000; Saunders and Van Brakel 1988) – criticism that was primarily directed at three aspects: *First*, the overall research setting was questioned, i.e. the methodological frame in general including the approach to data collection and the basic (cultural) assumptions underpinning the research[182]. The *second* critique relates to the constraints in color-term definition and ordering as initially de-

[181] On color-naming in Slavonic and Finno-Ugric languages cf. Uusküla (2009).

[182] Regarding cultural assumptions, e.g. Lucy (1997b) criticizes Berlin and Kay’s basic assumption that color terms encode color information only.

fined. The *third* critique concerns the way how Berlin and Kay interpret the above mentioned stages as 'stages in an evolutionary sequence', a diachronic perspective that was considered problematic for two reasons, as Hardin (1998) details: On the one hand, in case the evolutionary sequence proves correct, it would be among the few instances in which linguistic development proceeds unidirectionally from simplicity to complexity. On the other hand, the idea of a 'evolutionary sequence' let some critiques to relating Berlin and Kay to the "now-taboo late-nineteenth-century picture of an evolutionary culture chain, with Papua New Guineans at the bottom, scarcely a step above the beasts, and sophisticated Europeans situated comfortably and properly at the top" (Hardin and Maffi 2009:5), a position the authors claim was "no part of [their] [...] perspective" (2009:5).

In the wake of this criticism, the approach is significantly modified and conceptually refined. The authors and their collaborators revise their methodology in general, in addition to extending the scope of their samples with the 1976 World Color Survey (WCS) (Kay et al. 2009) and with thematically related research by others, foremost MacLaury's

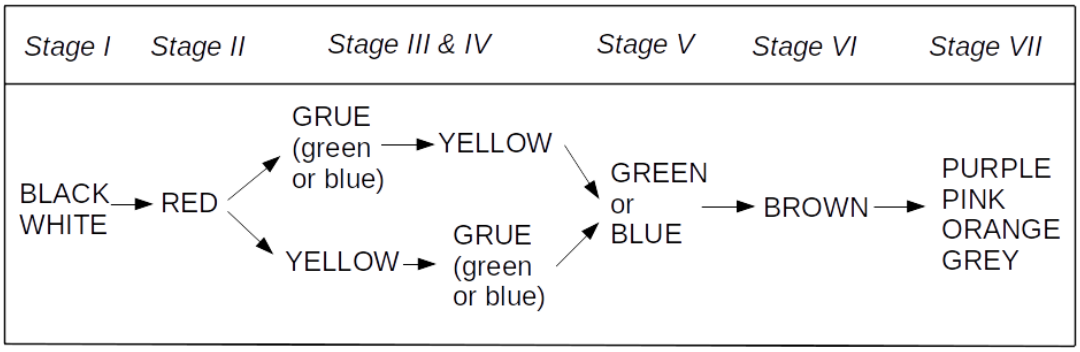

Illustration 26: Revised evolutionary color encoding sequence

"Color and Cognition in Mesoamerica" (1997). In essence, the modifications include on the one hand adapting the characterization of the constraints by introducing four subsidiary criteria, which led to a significant loosening of the definitions upon further research[183].

On the other hand, responding to the central criticism, the modifications entail a revision of the character and number of stages and the rules that organize their development, including a distancing from the idea of the evolutionary sequence (for an over-

[183] Four subsidiary criteria were established in case of doubt (Kay et al. 2009):
1) The doubtful form has to have the same potential in terms of distribution as the previously established basic color term (e.g. you can sag 'reddish' but no 'salmonish');
2) Color terms carrying at the same time the name of an object characteristically of that color are suspect (e.g. gold, silver and ash);
3) Recent foreign loan words may be suspect;
4) When the lexemic status is difficult to determine, morphological complexity is taken into consideration as secondary criterion (e.g. 'red-orange' might be debatable).

view on the modifications regarding this aspect cf. Biggam (2012)). This revised color scheme is represented in illustration 26 (based on Witkowski and Brown (1977:51)).

By and large, except for proponents of relativism and their fundamental philosophical criticism, there is little disagreement nowadays regarding the main tenets of the research by Berlin and his collaborators, notably the existence of universal, cross-linguistic semantic constraints in the field of color terminology (Hardin 1998). Since the initial 1969-publication, significant additional research has been conducted in neighboring academic disciplines, leading to a range of discoveries regarding the neuro- and psychophysical causes of cross-linguistic constraints on the respective sets of basic color lexicons and, vice-versa, the impact of such language-independent processes of color perception on the actual way how basic color term lexicons develop in a given language.

5.4.3.4 Summary of the dimensions of 'knowledge' and 'understanding' informed

A summary of the ways in which Berlin et al. contribute to informing the dimensions of knowledge and understanding (cf. chapters 4.4.1 and 4.4.3) reveals that their contribution indeed grounds a number of dimensions of knowledge in the literature, in addition to informing two dimensions of understanding.

However, it is important to underline from the very beginning that the analysis showed that these contributions are of a rather *indirect* character. Berlin himself was not invested in understanding the structure or character of knowledge in and by itself or on elucidating specific aspects the way this research project does. Rather, he focused on uncovering overarching innate patterns of thinking through studies of language use – patterns that are independent of the respective cultural settings. He strove to understand the internal structure and working of these knowledge forms and as such, he concentrated on identifying shared cognitive structures through cognitive techniques. As a matter of fact, by means of this methodological approach Berlin et al. found convincing evidence of surprisingly extensive similarities in the field of color and ethnobiological nomenclature and classification through cross-cultural comparisons of color-related and folkbiological taxonomic systems. This contributed to substantiating the idea of the universality of basic human cognition, which is a central piece of Berlin's work. In other words, Berlin was primarily interested in identifying a methodological approach to generically analyze the intellectual and rational foundation of culture; his emphasis was clearly on identifying cognitive structures and patterns or, formulated differently, on knowledge as a fundamental human cognitive principle. In contrast, this research in-

vests in identifying structures and patterns innate to knowledge bodies themselves. In view of these differences, the insights gained from Berlin et al.'s research are best described as *indirectly* informing this research.

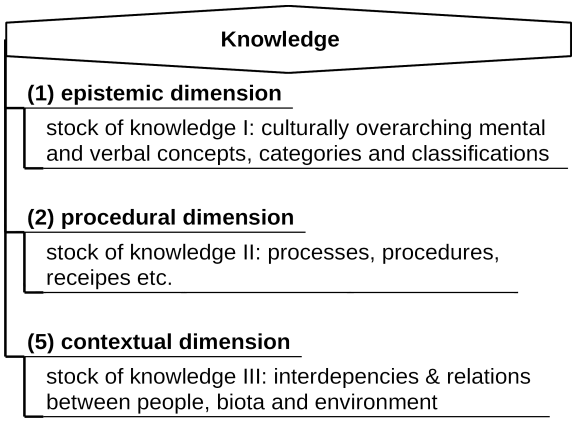

Illustration 27: Dimensions of knowledge informed by anthropology – Berlin

Returning to the actual question of how Berlin et al.'s approach contributes to informing the dimensions of knowledge and understanding, the situation is the following: With respect to **knowledge** (cf. illustration 27), the approach provides ample grounding for the (1) epistemic dimension in that extensive interviews with local communities represent a solid mode of carving out the actual knowledge content, i.e. the facts of the respective life-world. In a similar vein, the approach also informs the (2) procedural dimension of knowledge in that these interviews can also be a rich source for gaining detailed insights into the local procedures and processes and, more generally, into how things are commonly being done. Lastly, Berlin et al.'s research also contributes to informing the (5) contextual dimensions of knowledge in that these interviews can also provide abundant information on the surrounding life-world; this can entail information on e.g. the natural world, the cultural, social or religious backgrounds or on kinship relations.

As far as 'understanding' is concerned, Berlin et al.'s contribution is formative in that their approach is diametrically opposed to the basic principles and methods of interpretative anthropology; this, in turn, resulted in a deep mistrust vis-à-vis the latter in terms of how knowledge is generated and whether such knowledge can be considered valid and reliable. In terms of the **dimensions of understanding** (cf. illustration 28), these doubts in regard to the approach applied by interpretative anthropology contribute to informing the (14) dimension of the uncertainty of gaining an adequate understanding per se (meaning as conceptualized in interpretative anthropology). In fact, Berlin emphasizes that understanding is not guaranteed, nor does not naturally occur, but is highly contingent on the perspective one takes as well as related preconceptions and biases.

Building on such a fundamental uncertainty related to any attempts at understanding, he focuses on detailing a specific aspect of the phenomenon, namely the constraints resulting from researchers being trained in the framework of interpretative anthropol-

ogy. By arguing that the type of one's professional academic training strongly shapes one's perspective on reality through a set of fundamental concepts, inherent key assumptions and methodological preferences and biases, he contributes to informing the (15) dimension of structural and organizational constraints influencing understanding.

This mistrust-based criticism against interpretative anthropology led Berlin et al. to searching for alternative methodological routes for discovering innate cognitive structures or, more generally, the mental organization of their respondents' world. In this quest, Berlin et al. turned to cognitive techniques for their extensive field interviews, i.e. foremost to systematic data collection, structured interviewing and accompanying statistical analyses to understand the inner structure and organization of the knowledge domains with the aim of being able to generalize them in models. As such, they pioneered the approach to have the content, structure and characteristics of a knowledge body (or specific knowledge domains) systematically described and detailed by the local people. This approach to gaining knowledge contrasts with the well-established role of the 'lone' anthropologist trying to make sense of the experiences and data on his own in the course of extended field stays, thereby always running the risk of misinterpreting and potentially distorting the local reality.

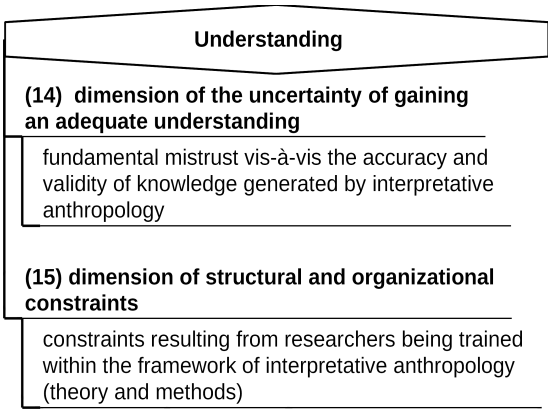

Illustration 28: Dimensions of understanding informed by anthropology – Berlin

5.4.4 Summary of the anthropological foundations for 'knowledge'

This chapter summarizes the main insights from the theoretical approaches discussed and analyzes them against the set basic dimensions of knowledge listed in chapter 4.4.1. In anticipation of the result, the analysis of the three theories from anthropology showed that they contribute to inform a broad range of knowledge dimensions, namely all of them except for the (6) ontological dimension of knowledge (for an overview cf. illustration 29).

Barth's tripartite approach to culture and knowledge (cf. chapter 5.4.1) informs a set of six dimensions: *First*, the (1) epistemic dimension is covered and informed by what Barth denotes as 'corpus of assertions and ideas', i.e. the facts of the world, while, *second*, what he refers to as 'social forms of organization' grounds the (4) dimension of social organization.

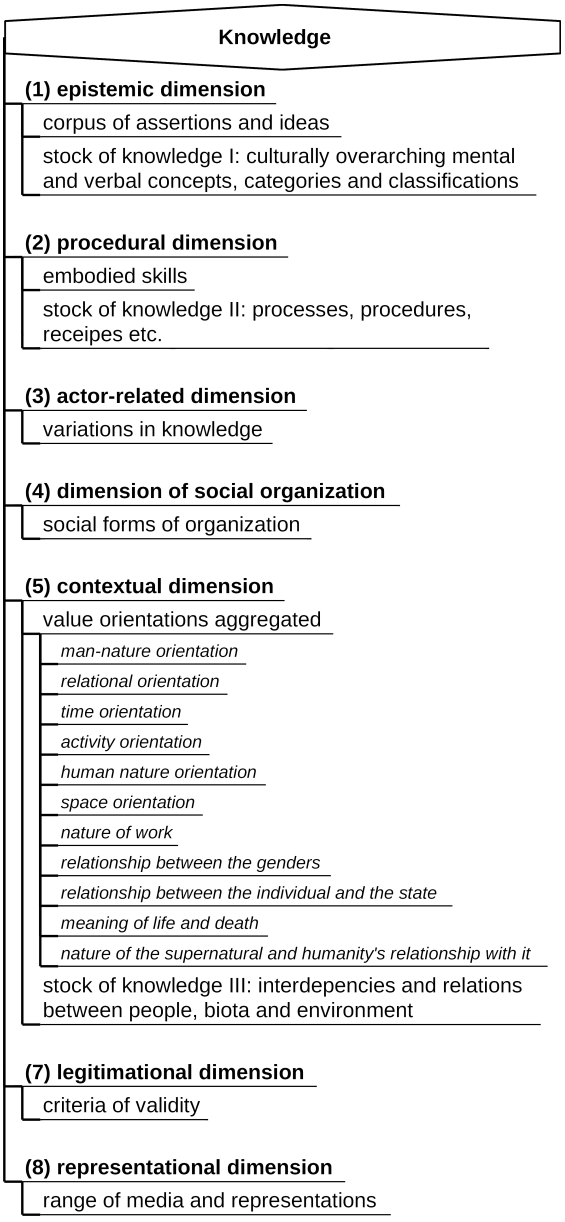

Illustration 29: Summary of all the dimensions of knowledge informed by anthropology

Moreover, the tripartite approach also contributes to informing the (8) representational dimension in that Barth deems the modes of communications in use to be decisive in characterizing a given knowledge form. Furthermore, Barth's notion of 'embodied skills' informs yet another dimension, namely the (2) procedural dimension while the (3) actor-related dimension is covered by this underlining of the uneven distribution of knowledge between and within communities, populations and individual lifespans.

Finally, Barth's approach also serves to inform the (7) legitimational dimension of knowledge in that he discusses the criteria applied for validating knowledge – criteria that result from the interplay between 'corpus of assertions and ideas', 'social forms of organization' and 'modes of communications'.

The value orientations approach elaborated by Kluckhohn/Strodtbeck and complemented by Hills (cf. chapter 5.4.2) is central for informing a specific knowledge dimension in great detail, namely the (5) contextual dimension. It is understood as the cultural context where a given knowledge form is 'at home'. In the understanding of the three scholars, cultures differ on six value orientations that, in turn, can be related back to six fundamental and value-related issues all societies need to take a stand on. Accordingly, they argue, the variations in these six value orientations correspond to diverse

approaches to resolving these value-related issues – the insight into which has the potential to facilitate cross-cultural understanding and communication. Hence, according to Kluckhohn/Strodtbeck, the overall cultural diversity results from the manifold combinations of these six value orientation.

More specifically, the six orientation relate to (A) the relationship of individuals and groups with nature, (B) the relationship of among individuals within a society, (C) the relationship with time, (D) the relationship regarding the favored form of human activity, (E) the evaluation of human nature and (F) the relationship with space. Building on these six orientations, Hills introduced additional four aspects he considers paramount for characterizing a cultural form, namely (G) 'nature of work', (H) 'relationship between the genders', (I) 'relationship between individual and state, (J) 'meaning of life and death' and the (K) 'nature of the supernatural and humanity's relationship to it'.

The analysis of the basic tenets of cognitive anthropology and, more specifically, of Berlin et al.'s theoretical contributions in chapter 5.4.3 led to three topical insights. *First*, it underlines the importance of uncovering mental and verbal dispositions, concepts, categories and classifications of local people and the specific way how culture is organized between their minds, thereby informing the (1) epistemic dimension of knowledge. *Second*, and related to the first one, Berlin's approach also informs the (2) procedural dimension of knowledge in that it equally concentrates on gaining an intricate understanding of how things are being done locally. i.e. the local procedures, processes and models. *Third*, given the general interest in the unconscious set of understandings and assumptions and the overall mental organization of the respective world, Berlin's approach also serves to inform the (5) contextual dimension of knowledge: Depending on the actual research topic, his approach contributes to providing ample information on the respective natural environment or the respective cultural, religious or social contexts.

5.4.5 Summary of the anthropological foundations for 'understanding'

In parallel to the preceding chapter 5.4.4, I first summarize the insights into the topic of 'understanding' gained from the anthropological literature on 'knowledge', more precisely from the contribution by Berlin and colleagues (cf. chapter 5.4.3).[184] Then, I outline how these insights inform and thus contribute to informing two of the overarching dimensions of understanding (cf. chapter 4.4.3), namely the (14) dimension of the un-

[184] The contributions by Barth (cf. chapter 5.4.1) and Kluckhohn, Strodtbeck and Hills (cf. chapter 5.4.2) showed not to contribute to grounding the notion of 'understanding'.

certainty of gaining an adequate understanding and the (15) dimension of structural and organizational constraints influencing understanding (for an overview cf. illustration 30).

In their theoretical work, Berlin et al. stress the importance of focusing on discovering existing local mental categories and dispositions they consider decisive for understanding the inner structure and organization of the knowledge domains. As discussed, their approach to understanding reality contrasts in its essence and objective with the basic principles and methods of interpretative anthropology. In their view, an interpretative approach to knowledge could not lead to a meaningful form of understanding and had to be considered fragmented and incomplete at best, if not misleading. Thus, according to Berlin and colleagues, understanding does not just happen in itself, regardless of the approach chosen, but heavily depends on the methodology applied.

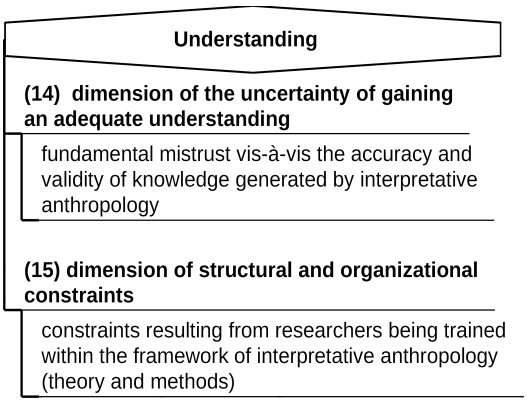

Illustration 30: Summary of all the dimensions of understanding informed by anthropology

In this vein, Berlin et al.'s reservation vis-à-vis the methodology applied by interpretative anthropology is in fact contributing to informing the dimensions of understanding (cf. chapter 4.4.3) formative for this research. More precisely, the (14) dimension of the uncertainty of gaining an adequate understanding is addressed by his emphasis of the contingency of understanding itself and, thus, its fundamentally uncertain character. In addition and zooming in on a specific aspect of the phenomenon, Berlin et al. also contribute to informing the (15) dimension of structural and organizational constraints influencing understanding. They describe the various ways in which an already etically-oriented research approach can be additionally burdened and potentially distorted. In their view, a prominent example represents the academic training in interpretative anthropology, which they consider resulting in an incorporation of problematic key assumptions and values (and, thus, of structural and organizational constraints). On all account, these constraints and biases render it less likely that the emic perspective can be perceived and, consequently, a robust understanding of local contexts can be reached.

5.5 Summary of the multi-disciplinary foundations for 'knowledge' and 'understanding'

While I focused earlier on analyzing the literature selection in disciplinary boundaries, I integrate at this point all the insights from the various theoretical disciplines and strands into an overview that illustrates the multi-disciplinary foundations of this research's main notion, 'knowledge', and the auxiliary term 'understanding'.

In the case of 'understanding', which received no individual literature analysis in this project, but was informed by the literature selected for grounding 'knowledge' (cf. chapter 1.3.2), the basis in the theoretical contributions is therefore rather straightforward, as shown in illustration 31:

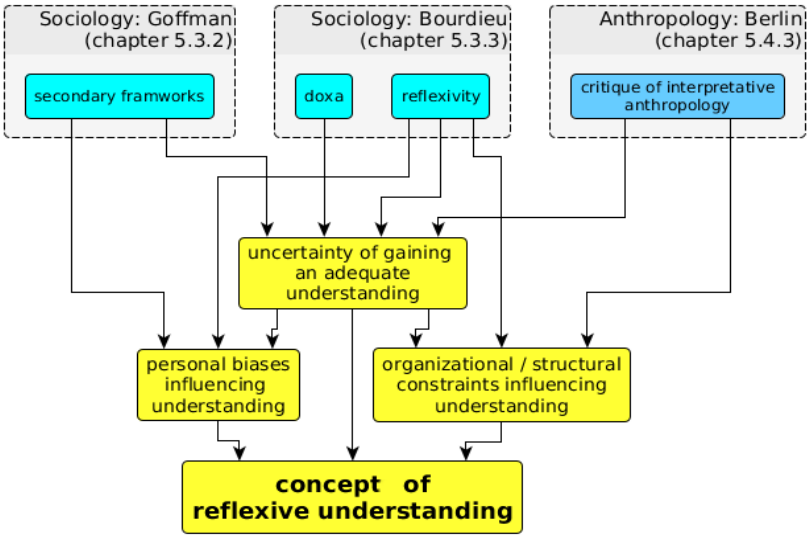

Illustration 31: Multidisciplinary foundations for understanding (overview)

In contrast und quite evidently given the central role of the term in the project, the result of the multidisciplinary analysis of 'knowledge'[185] turned out to be significantly more complex, as depicted in the following illustration 32:

[185] One element of Bourdieu's contribution (i.e. 'reflexivity') only informs 'understanding' and is therefore not related to any concepts (cf. illustration 31).

This page is intentionally left blank.

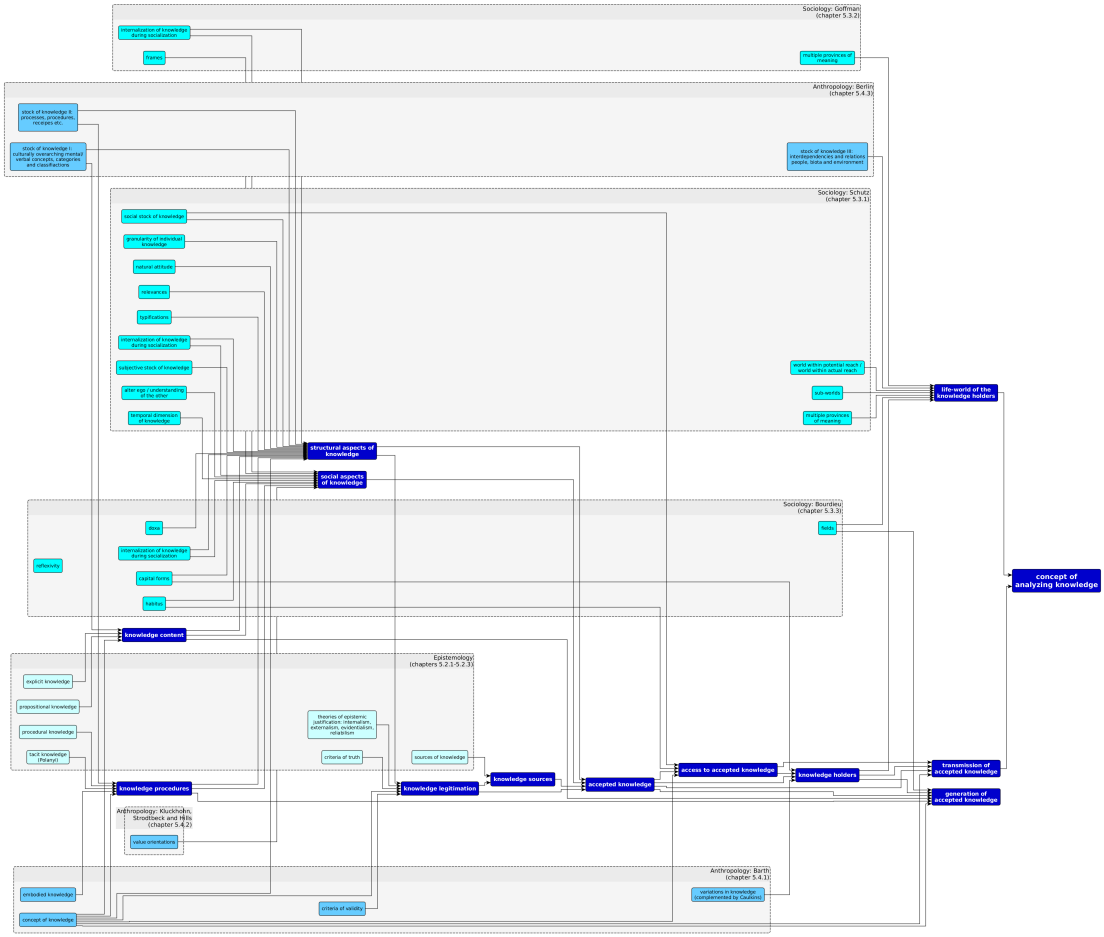

Illustration 32: Multidisciplinary foundations for knowledge

Illustration 32 is additionally uploaded to the open data repository Zenodo and can be found under https://doi.org/10.5281/zenodo.7526296

This page is intentionally left blank.

6 Multi-perspective analysis of 'locality'

Local knowledge is at one with lived experience.
To live is to live locally, and to know first of all,
the places one is in.
Casey (1996:18)

For many decades and across numerous academic disciplines the term 'locality' represents one of the fundamental spatial notions constituting the core of the respective disciplinary understandings. This reflects the pervasive role ‘space’ played, and still plays, in human social organization as much as its intimate entanglement with power, rendering it an often controversial and disputed topic. Examples include the widely discussed issues of forced and voluntary migrations (Akrap and Kalinić 2015; Lacina, Albert, and VanMeter 2017; Murillo 2008; Pérez 1997; Wood 1994), unsolved spatial conflicts rendering space a contested right, which is especially prevalent in indigenous communities given their overall lack of political and economic leverage (Behrendt and Kelly 2008; Biolsi 2005; Finley-Brook 2007; Mackey 2005), the foreignization of space in the global land grab (Dwyer 2013; Moreda 2015; Sullivan 2013; Vermeulen and Cotula 2010; Zoomers 2010) or territorial changes due to effects of climate change (Adger 1999; Barnett and Adger 2007; Ford, Smit, and Wandel 2006) – to only name a few.

Turning back to the academic discourse, 'locality’ is one possible conceptional denominator and approach to the topic of spatiality – correspondingly, the term overlaps with a number of related notions such as ‘location’[186], 'place', 'space', ‘area’ or 'site' (for a detailed review on these overlaps cf. e.g. Kokot (2007); Rotenberg (2012), for a focus on ‘place’ cf. e.g. Withers (2009)) as well as with the more abstract and generalized term of ‘spatiality’. The debate on the definitions of these notions is ongoing and their delineations remain to a certain extent blurry and contested as there is no uniform understanding of space, but rather a variety of perspectives and ways of conceptualizing it (Wippel 2013) – or, in Arias’ words, “the spatial turn speaks with more than one voice” (2010:31).

[186] Consulting a number of dictionaries (e.g. en.oxforddictionaries.com, www.vocabulary.com, www.dictionary.com and dictionary.cambridge.org) showed that the conceptual distinction between ‘locality’ and ‘location’ is far from being well-defined and contradicting definitions prevail. In geography where most spatial notions originated, the term ‘location’ is usually used to refer to a specific position on the map (e.g. by means of coordinates) to identify a specific point or area on the globe’s surface (or elsewhere, for that matter). In other words, the ‘location’ of something denotes exactly where it is. In contrast to this, ‘locality’ almost always denotes a specific town, village or area and refers to a populated place (or at least a place well-known to people) that is well-defined in terms of its name, but much less in terms of the exact boundaries demarcating it. Thus, locality means the general region around where something is located. Cities serve as an ideal example to demonstrate this difference: While the ‘location’ London denotes the exact geographical position of the city in terms of the coordinates describing the city area, the ‘locality’ London refers to the broader idea of the city and is not bound to its exact area.

The structure of chapter 6 is as follows: Given that the topic of ‘locality’ is treated here as modifier, resulting in it being discussed less extensively than ‘knowledge’ (cf. chapter 5), I start with a brief cursory overview on how space and spatial connotations have been and still are conceptualized (chapter 6.1). This allows me to provide a general overview on the debate and make up for the inevitable gradient in comprehensiveness between the discussions of ‘knowledge’ and ‘locality’. Thus, the aim of the cursory overview consists in preparing the ground for contextualizing the contemporary spatial conceptions outlined in chapter 6.3. It does, however, not have any pre-structuring function other than establishing a common understanding of how space was commonly conceptualized before and after the so-called ‘spatial turn’. This is first done with respect to the social sciences and humanities in general (chapter 6.1.1) and subsequently with respect to anthropology/ethnography, the discipline most formative when it comes to understanding livelihoods in other contexts (chapter 6.1.2).

Before presenting the more contemporary approaches to locality in the central chapter 6.3, I discuss in chapter 6.2 a number of procedural and methodological aspects involved in the subsequent analysis. This includes describing the background of the literature selection (chapter 6.2.1) as well as the expectations towards this literature against the backdrop of the basic dimensions of locality listed in chapter 4.4.2 (chapter 6.2.2).

Representing the core of the argument, I then proceed in chapter 6.3 to outlining six theoretical approaches to locality from various academic disciplines that provide relevant perspectives on spatial issues (6.3.1–6.3.6) – relevant in two respects: On the one hand, they contribute novel perspectives on spatial notions going beyond and complementing traditional spatial conceptions and on the other hand, these perspectives on ‘locality’ are suitable for informing the ‘local’ in ‘local knowledge’. With that in mind, each of the chapters 6.3.1–6.3.6 concludes with analyzing the specific theoretical contributions against the backdrop of the locality dimensions described in chapter 4.4.2, thereby relating the insights on ‘locality’/‘local’ back to the overarching research focus of ‘local knowledge’.

6.1 Brief excursus on the debate on ‘locality’

In preparing the ground for outlining contemporary spatial conceptions in chapter 6.3, I strive to provide here an insight into the broader development of the spatial debate, from the prevalence of so-called absolutist, fixed spatial conceptions to the introduction and increasing spread of so-called relativist spatial conceptions (for a detailed account

on absolutist vs. relativist conceptions cf. e.g. Löw (2001)). More precisely, chapter 6.1.1 gives an overview on the debate in the social sciences and humanities in general, including an account of locality's significant shift in meaning over the last two decades. Chapter 6.1.2 focuses on detailing said development for the discipline of anthropology/ethnography respectively.

6.1.1 'Locality' in social sciences and the humanities in general

Across a variety of academic disciplines and over long time periods, 'locality' and related spatial denotations constituted largely consensual ideas that were at the center of the respective disciplinary understandings. Little room was left for fundamental debates: First and foremost, spatial notions were perceived in terms of their physicality and materiality that were considered to be by and large static. Places, localities and space in general were considered to just be and exist as such, comparably to passive containers, arenas or stages on which action subsequently unfolds. From this perspective, space was seen as "a fundamental attribute of reality" that, together with time, represents the "mathematically describable context for natural phenomena" (Grossner 2017:1).

Consequently, 'locality' or 'local' were defined in a rather narrow terminological sense and commonly denoted "a particular neighborhood, place, spot or district" or, more abstractly, "the state or fact/quality of being local or having a location/position in space" (Oxford Online Dictionaries 2016). In this understanding, locality relates to a specific location in space and time and implies a stable and generally unchanging setting that itself does not exert any influence whatsoever (Arias 2010). Additionally, locality is often – albeit not always as the reference to London in footnote 186 exemplifies – researched against the backdrop of rurality, not the least in view of at both concepts being characterized along similar lines (Horáková 2014).

Generally speaking, for the better part of the 20th century, the realm of social sciences did not consider the spatial dimension nor related theoretical contributions to represent very promising, or, anthropologically speaking, 'thick' concepts[187]. On the contrary, in the modern era across (almost) all academic disciplines there was a clear preference

[187] While so-called 'thin concepts/descriptions' represent factual accounts without any further interpretation, 'thick concepts/descriptions' are "intensive, small-scale, dense descriptions of social life from observation, through which broader cultural interpretations and generalizations can be made" (A Dictionary of Sociology (online) 2016). Philosopher Gilbert Ryle introduced the term into the debate and Clifford Geertz adapted it for anthropology in his seminal publication "Thick descriptions: Towards an interpretive theory of culture" (1994). He claims that thin descriptions are not only insufficiently portraying a given culture (or aspects of it), but are genuinely misleading as they lack the additional commentary and interpretations that allow extracting the meaningful structures that make up a culture. This position results directly from Geertz's basic assumptions about mankind: "Man is an animal suspended in webs of significance he himself has spun. I take culture to be those webs and the analysis of it to be therefore not an experimental science in search of law but an interpretive one in search of meaning." (1973:5)

for space's twin concept 'time' – an attitude also expressed in the parallel rise of historicism under modern capitalism (Friedrich 2013). Generally, space was marginalized compared to time by presupposing the existence of temporal 'stages' of development (Döring and Thielmann 2009; Schreiber 2009) and by characterizing this development as an inescapable "ascent from savagery to civilization, simplicity to complexity, primitiveness to civilization, and darkness to light" (Warf and Arias 2009a:2). In contrast to space, time was perceived as dialectic and associated with motion, richness and life. Thus, over decades and across the whole academic spectrum, time was the preferred dimension, in line with the co-existing notions of development, progress and dynamics (Bonacker and Reckwitz 2007; Warf and Arias 2009a; Wippel 2013).[188]

In addition, extra-academic ideological and political events and trends also exert influence. Especially for the German-speaking countries, political implications related to earlier debates on space hampered its easy uptake until the late 1990s (Haslinger 2014), in academia as much as in the broader societal discourse. The reason for this is strongly related to the Nazi's fixation on space, prominently expressed in their attempt to acquire 'Lebensraum [living space] in the East'. After World War II, Germany's National Socialist ideology along with its wars of territorial expansion led to a wide-spread distrust and reservation against the topic of spatiality in general, which took time to overcome (cf. e.g. Gotthard (2005); Schlögel (2006), for a detailed account on space and race in Europe cf. e.g. Kletzin (2002)).

However, since approximately the 1980s, the spatial dimension gradually re-entered the discussion and made its way through the disciplines, resulting in what is retrospectively called the 'spatial turn' in the social sciences and humanities (Thrift 2006; Weinberg 2009). The reasons for this re-entrance and uptake are manifold and relate to both academic and extra-academic issues.

Extra-academic issues supporting the rising interest in spatial phenomena include the dissolution of the Western and Eastern blocs, the opening of borders, the introduction and worldwide spreading of spatial technologies such as Geographic Information Systems (GIS) helping to quantify data for place-related studies and – in the recent past – the rise and propagation of the internet or information and communications technologies (ICTs) in general. These played a significant role in allowing for human interaction

[188] While the modernist era of the 20th century was characterized by extensive debates on time, temporality, historicity and the stages of development, space, spatiality and locality turned into the dominant topics of the postmodern era. However, by and large, the academic debate rather quickly refrained from repeating this one-sided perspective on the contesting twin notions of 'time' and 'space and ceased to exclusively focus on the newly 're-discovered' spatial dimension, opting instead for exploring the potential hidden in the integration of both dimensions. This combined approach put an end to the often formulated reproach directed at researchers interested in space, i.e. the reproach of being hostile to time, of bluntly "denying history" or of "being a technocrat" (Foucault 1980:70).

over distances (Baldassar et al. 2016; González, Castro, and Rodriguez 2009; Khvorostianov 2016; Lloyd 2003; Nedelcu and Wyss 2016; Robertson, Wilding, and Gifford 2016). This included the creation of a myriad of new virtual cultural spaces such as discussion boards, online communities, virtual local networks or interest groups that could no longer be adequately characterized by the spatial parameters traditionally used (Hugger 2006; Tully 2009).[189] Rather, the internet and modern means of communication and media allow to bridge physical distances and maintain ties to distant home places. In addition, they offer an alternative to local communities in the form of what one could call 'imagined communities' where people no longer need to live close to each other, know each other profoundly or interact on a regular basis to build ties (Anderson 1983) – the networks are no longer defined geographically, but virtually.

As far as the realm of social sciences is concerned, the renewed interest in the spatiality of human life was critically triggered by the integration of new conceptual and theoretical approaches emerging from the globalization/glocalization debate (for a detailed account cf. chapter 6.3.3) next to being strongly influenced by critical appraisals of modernization approaches, the larger 'cultural turn' and social constructivism in general[190] (Brombert 2013; Ruotsala 2008).

Starting from approximately the 1980s, spatial categories of analysis were reintroduced into the social-scientific debate and agenda (Thrift 2006; Weinberg 2009) – after what Lossau and Lipuner called an "extended period of discursive exile" (2004:201)[191]. The re-entrance of the spatial dimension took place in parallel with the rebirth in scholarship in geography on the basis of the argument that "[g]eography matters, not for the simplistic and overly used reason that everything happens in space, but because *where* things happen is critical to knowing *how* and *why* they happen" (Warf and Arias 2009a:1). Following the initial publications by human geographers such as Edward Soja, David Hervey, Derek Gregory or Doreen Massey, a broad so-called 'spatial turn' evolved in the course of which many social science disciplines launched into exploring space as a major theoretical and philosophical concern (Roskamm 2016; Wippel 2013). The traditional, essentialist and static perspective on 'space', 'region' or 'locality'

[189] Notwithstanding the inadequacy of usual spatial parameters for comprehensively describing internet phenomena, spatial notions were critical in its first characterization. This is illustrated by numerous spatial connotations in the internet-related imaginary such as 'cyberspace', 'chatroom', 'portal', 'window', 'data highway' or 'homepage' (cf. e.g. Döring and Thielman (2009), for a detailed account on internet cartographies cf. Dodge (2008)).

[190] The 'spatial turn' is no isolated phenomenon; in fact, there were a number of so-called 'turns' that fundamentally reshaped the social sciences from the 1960s onward, including e.g. the 'quantitative turn' in history, the 'relativist turn' in epistemology, the 'cultural turn' in sociology, the 'linguistic turn' in literature and the 'interpretive turn' in social research methodology. For a critical approach to the phenomena of 'turns' cf. Grosetti (2011).

[191] While it is generally acknowledged that such a shift in perception took place, Szeman (1997) urges adopting caution as to its extent. He argues that most of the social sciences and humanities still presume an intimate relationship of culture to definite, distinct spaces, resulting in e.g. area studies still dominating the social sciences and literary studies still being branched into national specialties.

where social activities were considered to go on in predefined and container-like spatial contexts came to be seen as under-complex, along with the mostly implicit idea of social activities taking place in predefined spatial contexts (Wippel 2013). The world itself was no longer seen as a "collection of autonomous monadic spaces" (Szeman 1997:2), formerly imagined as nations, regions within nations or cultures delineated by nations or regions.

While initiated in human geography, the conceptual exploration of the spatial dimension was quickly taken up by other disciplines such as sociology where Lefebvre's publication "La production de l' espace" (1974) became formative for the debate.[192] Subsequently, a number of prominent scholars questioned whether the notion of space "as the dead, the fixed, the undialectical, the immobile" (Foucault 1980:70) was adequate and useful.[193] Fueled by the increasing dissolution of the previously inert and rigid images of space, locality, space and place were no longer seen as mere and neutral and static stage set.

On the contrary, space came to be understood as a creative power and inherently political in that it decisively shapes and influences many aspects of the lives of those who inhabit it, ranging from culture and identity to politics and economics. Space and spatiality were realized to be dynamic, relational and socially constituted or as Arias coined it, space is now seen as "a social product, i.e., […] made, not given" (2010:125) or as "[…] continuously produced, reconfigured and transformed by human acts, ideas and communication" (Wippel 2013:21). As such, places are "politicized, culturally relative, historically specific, local and multiple constructions" (Rodman 1992:641). Given their social constitution, they can be contested, re-imagined and re-made at any moment.

Against this background, it became generally acknowledged that social relations are not only heavily spatially organized, but that the spatial structuring has also a decisive influence on the distribution of other 'currencies' such as power and knowledge. This encompasses the distribution of material resources that additionally follows a differentiation by place, irrespective of also being tied to political, social and economic power (cf. the concepts of 'power-geometries' by Massey (2009, 2010)[194] and 'space-time compression' by Harvey (1990)).

---

192 For a detailed overview on the development of the spatial paradigm in the social sciences and humanities cf. Döring and Thielmann (2008), Tickamyer (2000) or Warf and Arias (2009b). With respect to German sociology, Georg Simmel is generally considered to have anticipated the cultural/spatial turn and laid ground to urban-spatial research (cf. his seminal publication "Die Grossstadt und das Geistesleben" (1903)).

193 For a detailed account of the influences of Lefebvre and Foucault on the debate cf. Roskamm (2016).

194 Among others, this approach is often applied when it comes to analyzing conflicts over space ('contested space') as e.g. in the case of indigenous communities struggling to enforce their spatial claims.

Next to the interaction between power and space, a second issue is formative for the debate on the spatial turn, namely the dichotomy between 'local' and 'global'. The hitherto strict dichotomy of the two widely used categories was fundamentally questioned and reviewed, as the need arose to revise the character of this polarity pair (Fardon 1995).

6.1.2 'Locality' in anthropology

Without question, 'space' holds a central position among the key concepts of anthropology and ethnography (Kokot 2007)[195]. For a number of decades, the relations of 'space' and 'culture' seemed obvious enough not to be questioned any further. Ethnography was firmly grounded in concrete and bounded places, practices as well as material relations and invested into understanding a specific, delineated community, tribe, village or culture from within or from an emic perspective with the aim to translate from one 'cultural idiom into another' (Werner, Schoepfle, and Ahern 1987). In terms of its methodology, ethnography relied on the situational combination of field techniques (i.e. interviews, note taking, audio-/visual recording etc.) grounded in the ideal of the so-called 'participant observation' that in turn strives for living as the locals themselves do, to the greatest extent possible (Falzon 2009). Places were generally perceived of as specific locations and were by and large "[…] equated with ethnographic locales. As such, they could be taken for granted. They were just space, 'the dead, the fixed, the undialectical, the immobile' in Foucault's lament [...]. They became the settings, albeit often exotic ones, where things happened." (Rodman 1992:640) In this vein, the traditional ethnographic method built on starting by identifying a "single locale with the local or the geographically bounded place of a human community" (Roudometof 2015:778). Such a demarcation served to determine the actual field that was going to be studied thoroughly with the self-declared aim of the ethnographer to understand it in its singularity (Nadai and Maeder 2005; Roudometof 2005).

However, in the course of the so-called spatial turn, ethnography's (and for that matter also anthropology's) relationship to space significantly changed. Early criticism was raised against what came to be seen as "spatially bounded notions of 'culture'" (Kokot 2007:10). More and more scholars accepted the idea that the relationship between culture, community, identity and a specific territory or locality is far more complex than previously assumed (Wonneberger 2011). Existing anthropological models of discrete societies, nations and cultures "occupy[ing] 'naturally' discontinuous spaces" (Gupta and

[195] Ethnography is often considered the key tool in applied anthropological research. For a comparison between the notions of 'anthropology' and 'ethnography' cf. Ingold (2008).
In line with the majority of disciplinary publications on the topic, I use the two terms interchangeably in this project.

Ferguson 1992) were increasingly criticized for their mechanistic approach. It was understood that bounded, isolated places hardly, if at all, exist.

Similarly, the essentializing approach of associating particular socio-spatial areas with cultural topics or traits characteristic of early ethnography was also heavily criticized (Fardon 1990; Kokot 2007). In this respect, Appadurai (1996b) went as far as denoting spatially based anthropological concepts as having turned into veritable prisons for regional anthropology. Following this thought, Gupta and Ferguson (1992) underline that a revised spatial understanding does not only do more justice to the ethnographic description of given phenomena, but also carries significant political implications, given that the enforced 'difference' of places amounts to an expression of a global system of domination. At the same time, according to them, questioning and revising cultural and spatial divisions contributes to fighting "a very literal 'spatial incarceration of the native' (Appadurai 1988) within economic spaces zones, as it were, for poverty" (1992:17).

By the 1990s and as a result of these developments and debates, the classical object of anthropology – the 'traditional society' – had disintegrated and ceased to exist as a bounded entity or at least has been integrated into larger social contexts to such a degree that the assumption of unified local and social boundaries had to be acknowledged to no longer be tenable (Appadurai 1996d; Nieswand 2009; Tsing 1994)[196]. As Ito condensed it, anthropology realized that it critically needed "ways of describing affiliation" (1999:1) or forms of sociation bridging geographic regions that are defined in terms other than territorial ones, while remaining grounded in concrete places and practices.

Against this backdrop, alternative a-spatial concepts of culture were developed and proposed in the following years. A broad range of studies form different disciplines indicated that (a) social relationships can surpass the borders of nation states, that (b) identities do not need a reference to a concrete place for their construction and that (c) communities can form on the basis of social networks en lieu of a shared physical locality as starting point (Wonneberger 2011). In view of this, anthropologists came to the conclusion that the local does not depend on referring to a spatially bounded or limited locale for its existence; rather, it can be understood as a "metaphor for a collectively imagined space – or a social space" (Roudometof 2015:778).

Consequently, a growing body of anthropological literature studies the relations between peoples, places and cultures while focusing on mobility, mixture and hybridity.

[196] With respect to the topic of local knowledge, Mueller underlines that "a social anthropological understanding of local knowledge must be a first step to overcome the traditional mapping of knowledge as contained in a 'box'" (2003:330).

These endeavors, however, did not lead to a uniform and consistent result in the sense of some "fully-formulated anthropological theory of 'culture and space'" (Kokot 2007:10)[197]. They rather present themselves as a somewhat fragmented collection of expressions and metaphors denoting spatial aspects of anthropological topics that received both praise for their inherent creativity and attracted criticism for being of a "more suggestive than analytical" (Kokot 2007:10) value.

Regardless of this disciplinary assessment, these various contributions to the spatial debate are highly relevant for the purpose of this project in that they in fact offer novel perspectives on 'locality'. Accordingly, I discuss in the following chapter 6.3 a selection of six theoretical approaches that I consider crucial for conceptualizing the locality dimension in the composite notion of 'understanding local knowledge'.

6.2 On the method

On the background of these developments and the inherent paradigmatic shift, chapter 6 intends to outline the debate on 'space'/'spatiality' and 'locality'. This includes describing the main theoretical contributions and the related specific socio-spatial understandings. The aim of this cursory overview consists in gaining an analytical understanding of the novelties introduced in the course of the debate on how to conceptionally grasp locality or spatiality. The main focus is set on identifying what characterizes locality under the new perspective.

Methodologically, the procedure resembles in many ways the one in the preceding chapter 5 dedicated to analyzing knowledge – with one difference. In contrast to the discussion on 'knowledge', I do not strive for presenting the spatial debate in its conceptual breadth or for providing detailed outlines of the scientific controversies following certain contributions[198]. Rather, en lieu of debating 'locality'/'local' in its own right, I discuss the notion with respect to its potential contributions to informing the overarching and composite notion of 'local knowledge' that is at the core of this research. The actual interest in exploring the topic of locality consists therefore in gaining insights as to how 'locality' (or, more generally, the spatial dimension) shapes and characterizes 'knowledge'. As such, 'locality' is studied in its function as modifying 'knowledge'. Accordingly, the aim of this chapter consists in establishing a theoretical substantiation of the modifier 'local' for the composite term of 'local knowledge'.

---

[197] For theoretical orientation, Kokot (2007) specifies, anthropologists turn to the respective debates in sociology, geography and urban studies.

[198] As mentioned earlier, to compensate for this, chapter 6.1 invests into providing an introductory overview on the topic, starting with 'locality in academia in general' (chapter 6.1.1) before proceeding to 'locality in anthropology' (chapter 6.1.2).

As far as issues of power and domination are concerned, they undoubtedly have an extraordinary influence when it comes to structuring and organizing space (Korf 2005; Lutz 2005; Novy 1998; Schroer 2006). For the purpose of this project I refrain, however, from taking these aspects into account. In parallel to the approach to 'knowledge', the emphasis is on gaining a clear conceptual understanding of the notion – even more so given the modifying and at the same time distinguishing function of 'locality/local'.

In the following, I describe the motivations steering the literature selection (cf. chapter 6.2.1) and outline the overall structure of the chapter and the expectations towards the literature (cf. chapter 6.2.2) against the backdrop of the five locality dimensions sketched in chapter 4.4.2.

6.2.1 Background of the literature selection

The approach chosen for the discussion of 'locality'/'local' is a broad one in that it does not limit itself to consulting studies that exclusively refer to the notion of 'locality' or 'local', but also includes complementing research on related spatial notions such as 'place', 'space' or, more abstractly, 'spatiality'. The reason for this inclusive approach is that no clear definitions and delineations exist that would help to consistently separate the various spatial notions from each other. Given this fuzzy initial position, I saw the necessity to include a broad spectrum of terms to be able to identify those aspects of locality crucial for the actual main topic of this research, i.e. for understanding how local settings influence the knowledge in a given place. In other words: Just exploring the spatial notions that directly include the term 'locality'/'local' would not result in a productive list of modulations as the literature on 'locality' in sensu stricto is rather modest and cannot do justice to all the spatially-induced nuances that can help to inform the composite concept of 'local knowledge'.

The relatively mixed disciplinary provenience of the selected spatial theories in chapters 6.3.1–6.3.6 is no attempt to cover the topic extensively. As a matter of fact, I prioritized identifying the contributions able to open up new perspectives over disciplinary considerations. The primary selection criterion was therefore 'novelty'. Novelty is, however, an ephemeral quality that can sometimes be hard to fully appreciate retrospectively. This is also true with certain theoretical insights I describe in the following chapters: Judging from today's perspective, some of them seem to propose statements that, at first glance, might seem somewhat obvious. However, one has to keep in mind that they need contextualizing and to acknowledge their belonging to the first arguments brought up against centuries-old static and bounded spatial conceptions. Seeing them

as the forerunner they were helps to realize the novelty they introduced at that time – even if from today's perspective it might be difficult to phantom how one could have thought otherwise.

Another characteristic in how I approach the topic of 'locality' consists in refraining from discussing the ensuing intra- and interdisciplinary academic debate. While this would be rewarding in itself, it goes beyond the scope of this project – with one exception: While many of the theoretical approaches discussed in these chapters entailed a considerable academic debate, few concepts came under such hefty criticism as 'hybridity' (cf. chapter 6.3.6). Given this exposed situation, I close this chapter by outlining the rationale that led me to integrating 'hybridity' regardless of disciplinary reservations.

Brief excursus on 'hybridity'

Generally speaking, the notion of hybridity is considered a problematic construct in that it presupposes a preceding state of purity and rests on essentialized conceptions of the 'other' (Moss 2003). Critics challenge it as an overly biologistic concept and argue that hybridity or hybridization can be found everywhere and at all times and that the idea of homogeneous collective identities, of 'purity' or a 'pure state' is as misleading as it is inconsistent with reality (Gilroy 2004; Moss 2003; Rapport 2014; Werbner 2001). It is argued that hybridity and essentialization are closely linked, given that the analysis of the former builds on "essentialised notions of the 'other'" (Peterson 2012:13) and necessarily results in essentializing groups. In addition, the hybridity concept is criticized for amounting to an instrument of power utilized by Western cultures to "obscure hierarchy and to reinforce power rather than to contest it" (Brettell and Nibbs 2009:680). The absence or downplaying of issues of (neo-colonial) power, hegemony and inequality is indeed the perhaps most often articulated critique directed at the topic (Hutnyk 2005; Peterson 2012; Pieterse 2001; Tanikella 2003; Williams 2003). It is feared that if these issues are left unmitigated, the very notion of hybridity runs the risk of turning into yet another category that separates and dissects communities and societies. The combination of these two lines of critique culminated in what Pieterse called an "anti-hybridity backlash" (2001:221), rendering the concept into one of the most contested ones (Peterson 2012).

However, according to Pieterse, the problem is not the concept of hybridity itself to which he attests "great historical depth" (2001:230), but what he calls "[...] the social proclivity to boundary fetishism" (2001:220). As a matter of fact, for him the actual theoretical contribution of hybridity lies in that it "problematizes boundaries" (2001:220) – boundaries that are, as much as hybrid identities, understood as contingent, fluid and

emerging (Brettell and Nibbs 2009). The many diverging perspectives on the topic fuel the impression that 'hybridity' is at the same time 'untenable' given its biologistic foundation and 'supporting' given its contribution to overcoming what came to be seen as unhelpful binaries (e.g. black vs. white, Western vs. non-Western, modern vs. traditional) and, ultimately, notions of universals (e.g. good vs. bad, right vs. wrong). This supporting function takes place through a shift of focus towards the multiplicity of potential outcomes that might occur when two entities meet and interact: "[…] there is no good versus evil, no right or wrong, just a series of iterations and in-betweens to be analysed and judged on their own merits" (Peterson 2012:12). Hence, against this backdrop and in view of the notion's widespread application in many academic disciplines, notably in the broader context of 'culture' and 'knowledge', 'hybridity' entered the selection of concepts discussed in more detail regardless of the above described reservations.

6.2.2 Expectations toward the literature and structure of the chapter

In parallel to chapter 5 on 'knowledge', I strive here to theoretically inform the dimensions describing 'locality' in the composite term of 'local knowledge' by an in-depth interdisciplinary literature analysis. For 'locality', I started from a set of three tentative locality dimensions (cf. chapter 4.4.2) that I saw the need to have somehow topically integrated into a conceptual-analytical characterization of 'locality'. These three tentative dimensions were meant to cover the following aspects:

1) physicality/materiality of the locality;
2) influence of human actors on the locality;
3) role of immaterial, imagined localities.

In contrast to the literature analysis on 'knowledge', I had few to no ex-ante expectations towards the literature. On the one hand, this stems from to a lack of exposure to the specific disciplinary publications. On the other hand, it is related to the academic debate itself: In contrast to 'knowledge'[199], the theoretical landscape with respect to 'locality' is significantly less defined. Many strings of debate are ongoing, relate to each other and, consequently, overlap, whether these overlaps are addressed explicitly or rather implicitly. Linked to this, the debate is to a much higher degree interdisciplinary, which makes it more difficult to anticipate the character and (potentially ideological) focus of a given contribution. In light of this, determining the dimensions addressed by a

[199] With 'knowledge' being one of the central topics in the humanities and a number of social sciences, the long-standing academic debate on knowledge is not only impressively vast and complex, but also well-structured and highly detailed. This is very helpful when it comes to analyzing specific contributions against the backdrop of a given set of dimensions – by and large, for 'knowledge' the allocations are rather forthcoming as they often result from the structuring synthesis of previous academic debates.

theoretical contribution or excluding specific ones with certainty amounts to an at times ambivalent undertaking. As a general rule to handle this type of fuzzy situation, I decided to only conservatively attribute dimensions, based on whether their mentioning is explicit – if it is only implicit or follows logically from other dimensions, it is not included as this could potentially dilute the profiles of the well-articulated dimensions into arbitrariness.

Anticipating the result of the analysis described in the subsequent chapters 6.3.1–6.3.6, I eventually identified a set of five dimensions characterizing 'locality' in the course of the literature analysis, namely:

(9) physical-material dimension of locality;
(10) actor dimension of locality;
(11) network dimension of locality;
(12) influx/response dimension of locality;
(13) relevance dimension of locality (functional-symbolical).

The following chapters describe the spatial theories that proved to be informative in terms of contributing to characterizing 'spatiality'/'locality' in a conceptual-analytical way. In parallel to chapter 5 on 'knowledge', I start each chapter by outlining the theoretical perspective offered by the respective contribution in regard to its potential for refining the understanding of 'local' in 'local knowledge'. In the same vein, I conclude each chapter with describing how the respective theory contributes to informing 'locality' and the dimensions of locality respectively (i.e. chapters 6.3.1.2, 6.3.2.1, 6.3.3.2, 6.3.4.2, 6.3.5.2 and 6.3.6.2). Lastly, I summarize in chapter 6.4 the core insights gained from the selected approaches to 'locality' and how they inform the concluding set of the five locality dimensions listed earlier (cf. chapter 4.4.2).

6.3 Theoretical contributions informing 'locality'

As outlined when sketching the evolution of the concept of locality in the social sciences and humanities in general (chapter 6.1.1) and in anthropology/ethnography in particular (chapter 6.1.2), the debate on spatial issues has significantly broadened and diversified over the last two decades. During this period, 'locality' and related terms have evolved into complex and polyphonic concepts. It is in first place the newer literature that takes account of and reflects this inherent complexity.

As stated earlier in 6.2, this chapter does not aim at providing a comprehensive overview on the developments in the spatial debate over the last decades nor does it explore the weighty interplay between space and power that doubtlessly merits extensive

research on its own. Rather, the spatial dimension is discussed in view of its relation to and potential for informing ‘knowledge’.

Against this backdrop, I introduce in the following chapters a selection of six spatial approaches that represent novelties (relative to the respective state of the debate) and are informative for gaining an understanding of how ‘locality’ influences and shapes ‘knowledge’. I start with two rather straightforward contributions that carry the actual modifier ‘local’ explicitly in their designations, i.e. ‘multilocality’ (chapter 6.3.1) and ‘translocality’ (chapter 6.3.2). The subsequent chapter 6.3.3 discusses the concepts of ‘globalization’ and ‘glocalization’, opening up the spectrum between the ‘local’ and the ‘global’. The following three chapters 6.3.4–6.3.6 describe complex or aggregated concepts that are related to locality and spatiality and are productive for the purpose at hand, however without denominating the spatial relation at first sight: ‘global cultural flows and the production of locality’ (chapter 6.3.4), ‘multi-sited ethnography’ (chapter 6.3.5) and, eventually, ‘hybridity’ (chapter 6.3.6).

6.3.1 Multilocality

I approach the topic by first summarizing the theoretical contributions in the context of ‘multilocality’ (chapter 6.3.1.1) before analyzing in a second step which of the locality dimensions listed above are informed by this approach (chapter 6.3.1.2).

6.3.1.1 Theoretical contributions

One of the earlier contemporary approaches to tackling the contested issue of place goes by the name ‘multilocality’. Somewhat simplifying and partially anticipating the debate, multilocality could be broadly described as “the attachment to and the participation in social and economic activities in a number of places” (Trager 1995:285). This entails, in other words, the “quality or fact of being present or operating in many places simultaneously” (Oxford Online Dictionaries 2016). The term can be traced back to its early exponents Waldenfels (1985) and Miranda (1995), as Rolshoven (2007) outlines, and shares its theoretical foundation with Appadurai’s concept of locality (cf. chapter 6.3.4).

Accordingly, research on multilocality is not a new phenomenon. It is especially true, Dirksmeier (2010) argues, for the disciplines studying non-European cultures such as e.g. anthropology that has a tradition of discussing multilocality against the backdrop of arrangements of residence after marriage (cf. the early study on this topic by Goodenough (1956)). Starting from these first anthropological contributions, the debate extended to several other disciplines – sociology, literature studies, history, human geog-

raphy and interdisciplinary studies such as environmental anthropology – where research traditions developed and topical foci were set (Dirksmeier 2010). However, for the purpose of this project, I limit myself to sketching the anthropological debate.

Building on the early contributions by Goodenough (1955, 1956), the anthropological perspective on multilocality of the first generation coined it in a classical way as “the co-occurrence of any two or more fairly frequent patterns of consanguineal residence” (Ember and Ember 1972:382). Centering on the rules of residence for married couples, anthropology distinguishes between three monolocal forms of residence – patrilocal, matrilocal and avunculocal residence – and recognizes temporal oscillations between certain forms (for a detailed outline cf. Goodenough (1956)). Subsequent anthropological studies attributed specific rules of residence to specific types of societies, denoting patrilocal groups as tending towards aggression and polygamy, while matrilocal groups were in turn considered to be peaceable and monogamous (Dirksmeier 2010). Consequently, groups residing in more than one place were assumed to be somewhere between the two poles (for a detailed account cf. Witkowski (1977)).

Contrasting this first generation approach, more modern anthropological studies stress another layer of meaning with respect to multilocality by thinking of it as of an important feature of urbanization processes. They see it expressed in the temporal migration between different rural and urban localities and point to the fact that these migrations occur at very differing periodicities, from daily to weekly, monthly, seasonally or with no regularity at all. This focus on the migratory characteristic of multilocality allows for studying people who in fact practice multilocal living in forms other than the mere switching between different homes as in the case of second-home owners. Such alternative multilocal living approaches are formative for a broad range of people including e.g. migrants, seasonal workers, students, long term campers, the children of divorced parents, the users of garden allotments or even homeless squatters occupying vacant summer houses during winter time (Rolshoven 2007). In this understanding of multilocality, it amounts to a “practice of life-world contextualization and of a ‘placing’ of the self” (Rolshoven 2007:18) or “a way of life” (2007:17), reflecting crucial tenets of Appadurai (1996e).

The most recent studies, however, underline a third layer of meaning, complementing the ones described above on place of residence and migration. A prominent scholar advocating this line of thought is Margaret Rodman who laid out her perspective on multilocality in the seminal paper “Empowering place: multilocality and multivocality” (Rodman 1992). Equating the conceptual complexity of place with the one of culture, she ar-

gues for paying close attention to places instead of taking them for granted as mere sites of ethnography, static and lasting by nature. According to her, “[p]laces are not inert containers. They are politicized, culturally relative, historically specific, local and multiple constructions” (Rodman 1992:641). Consequently, she sees places as being socially constructed by their inhabitants – as a result, they incorporate multiple functions and attributions and, thus, become multivalent. In her understanding, multilocality denotes the multilocality of a place itself that can combine meaning of all sorts for different cultures (Rodman 1992).[200] As for the actual experience of places, Rodman identifies the following four types:

(1) In its first meaning, multilocality adopts what Rodman calls a “decentered analysis” (Rodman 1992:646) in the attempt to understand the constructions of places from a broad range of viewpoints, including non-Western as well as Eurocentric ones. Multilocality in this sense implies to look at the places in question from the perspective of others while simultaneously realizing that despite all ‘othering’, the very notion of ‘others’ is obsolete in view of the interconnectedness of humanity and the fact that actions of individuals can potentially affect everyone.

(2) In its second meaning, multilocality involves “comparative or contingent analyses of place” (Rodman 1992:646). Building on Marcus, Rodman argues that specific activities such as e.g. markets or social movements emerge from the actions of multiple individuals in different places and can only be grasped by identifying “both intended and unintended consequences in the network or complex connections within a system of places" (Marcus 1989:25).

(3) In its third meaning, multilocality can relate to what Rodman calls “reflexive relationships with places” (Rodman 1992:646). Building on the observation that actors who can no longer return to their places of identification (be it because they are no longer reachable or not longer exist, e.g. following suburban development or after a disaster) have a tendency to perceive the new landscape along the lines they perceived the familiar one. This way, the original place of identity that became unattainable is being reconstructed reflexively, in a “multilocal way of sorting out meaning” (Rodman 1992:647).[201]

---

[200] She thereby delimits the notion of 'multilocality' from the term 'heterotopia' introduced by Foucault, arguing that while 'heterotopia' denotes the actual sites and their physical traits, 'multilocality' describes the “way of experiencing those and other places” (Rodman 1992:646) and the role of these places for the identity construction of individuals or social groups.

[201] Dirksmeier (2010) points to an ideal illustration for this phenomenon described by Lowenthal who cites the example of the Masai people relocated by the British colonial rulers, thereby referring to the Danish author Karen Blixen: “Thus in East Africa when the Masai were moved they ‘took with them the names of their hills, plains and rivers; and gave them to the hills, plains and rivers in the new country […], carrying their cut roots with them as a medicine’” (1975:9).

(4) In its forth and last meaning described by Rodman, multilocality can also characterize one single physical landscape/place that carries polysemous meanings for different actors, rendering this single place multilocal “in the sense that it shapes and expresses polysemic meanings of place for different users” (1992:647) . This implies that, in phenomenological terms, every specific locality in space amounts to a multilocality, given this polysemy.[202]

Recapping, such a differentiated approach to multilocality results in a perspective encompassing the relevant elements to be considered when aspiring at gaining an understanding of a place's meaning(s). As Buterbaugh succinctly paraphrases Rodman, multilocality “[…] can be used as a method for experiencing a place that has diverse meanings; a way of comparing multiple interpretations of place meaning; a way of understanding one place by relying on knowledge of another; or a way of creating multiple meanings for the various individuals interacting with a given place” (2012:2).

6.3.1.2 Summary of the dimensions of ‘locality’ informed

Analyzing the main characteristics of ‘multilocality’ against the backdrop of the five locality dimensions listed in chapter 4.4.2 reveals that four out of the five dimensions are indeed informed by the literature on ‘multilocality’, i.e. the (9) physical-material dimension of locality, the (10) actor dimension of locality, (11) network dimension of locality and, eventually, the (13) relevance dimension of locality (cf. illustration 33 for an overview).

Acknowledging the existence of sheer geographical locales, the concept of multilocality underlines that a person can be present and active in more than one place, even simultaneously, thereby informing the (9) physical-material dimension of locality. ‘Multilocality’ in this sense means the actual existence of a number of relevant localities in a person’s life. ‘Multilocality’ covers complex forms of multi-locatedness and goes beyond the case of owners of seasonal houses to include all forms of temporal migrations along with their various periodicities, including e.g. seasonal workers, migrants, members of patchwork families and students.

Moreover, ‘multilocality’’ also contributes to grounding the (10) actor dimension of locality by emphasizing that a person can be present and active in more than one place, also simultaneously.

[202] The first and the forth dimensions display a remarkable similarity – it seems as though the forth dimension amounts to a special case of the first dimension.

Additionally, ‘multilocality’ contributes to elucidating the (11) network dimension of locality by allowing for comparative or contingent analyses of a system of interconnected places. This perspective on locality originates in the idea that specific human activities such as e.g. markets or social movements usually arise from multiple individuals residing and acting in multiple places. In order to understand these activities, one has to take into account what happens in the different places simultaneously, paying attention to both intended and unintended consequences of this network of actions and places.

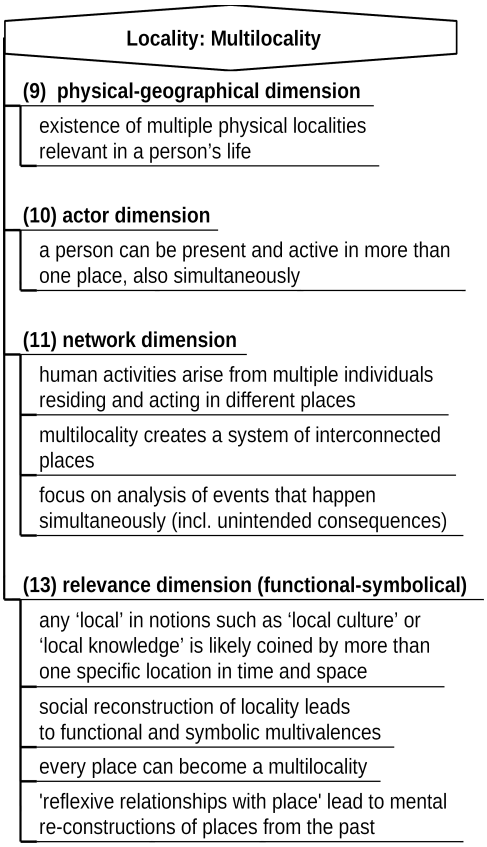

Illustration 33: Dimensions of locality informed by multilocality

Lastly, the concept of multilocality also informs the (13) relevance dimension of locality in that it underlines the multivalency of localities, both with respect to functional and symbolic dimensions. Starting from the assumption that localities are socially constructed by their inhabitants, the term describes that a place can at the same time embody multiple functions and symbolic attributions, thereby becoming multivalent. In this understanding, a place is called ‘multilocal’ if it carries polysemous meanings for different actors, even from different cultures. Generally, every place has the potential to turn into a multilocality and any ‘local’ in notions such as ‘local culture’ or ‘local knowledge’ might very well be coined by more than one specific location in time and space. For the contexts of this research, reflexive relationships with place leading to mental re-constructions of places from the past that are no longer attainable in new physical environments are seen as a special case of this functional-symbolic dimension of locality. The purpose of these reconstructions consists foremost in establishing meaning, belonging and familiarity in the new physical environments.

6.3.2 Translocality

As for ‘multilocality’, I tackle the topic by first recapping the theoretical contributions to ‘translocality’ (chapter) before analyzing which dimensions of locality outlined earlier (cf. chapter 4.4.2) are informed by this theoretical approach (chapter 6.3.2.1).

51Theoretical contributions

Similar to ‘multilocality’, the concept of translocality was developed by researchers interested in the dynamics of mobility, migration and socio-spatial interconnectedness (Greiner and Sakdapolrak 2013). Attempting to establish connections between the two concepts ‘globalization’ and ‘localization’ (Lachenmann 2010), the notion builds on the idea that globalization is by no means a uniform or standardized process, but characterized by an unevenly distributed array of processes that produce and shape cross-territorial linkages and flows. This variety constitutes the actual backbone of translocality, i.e. the processes of local adaptation and re-structuration and the study of related “interconnectedness/entanglement, overlaps as well as fragmentation and disparity” (Bromber 2013:63).

The term developed in the context of debates on the social production of place and space in the mid 1990s (Bromber 2013) and is attributed by some scholars (cf. e.g. Greiner (2010); Lachenmann (2001); Wippel (2013)) to being introduced by Arjun Appadurai in his seminal publication “The production of locality” (1996e). It has semantic overlaps with other trans-terminology[203] such as ‘transculturation’ and ‘transnationalism’[204], but also with studies of ‘culture of mobility’, ‘border culture’ and ‘cosmopolitanism’ (Bromber 2013; Wippel 2013). These interrelated concepts can be understood as efforts to move beyond methodological nationalism (for a detailed account cf. Wimmer and Glick Schiller (2002)) and to question the idea of “culture as a closed entity” (Bromber 2013:63). The functional role of translocality is still under debate; however, the majority of scholars agree that translocality can easily embody more than one function and act as both a concept/middle range theory and as a research perspective (Bromber 2013; Greiner and Sakdapolrak 2013; Mayar 2011).

Against this backdrop it is probably no coincidence that, as for ‘multilocality’, there is no generally agreed upon textbook definition of translocality (Greiner and Sakdapolrak 2013). Instead, the majority of publications opts to talk more implicitly about their respective understanding of translocality. As the notion is in practice often defined in terms of the author’s own conceptual understanding and preference, translocality as a theoretical concept therefore remains somewhat vague.

Notwithstanding this fragmentation, a number of common traits of ‘translocality’ can be extracted. In a first stage, the debate on locality had a strong twist towards geographical studies and, correspondingly, was primarily used in a mere geographical sense (for

[203] For a critical perspective on the widespread rise of ‘trans-terminology’ and the related danger of turning ‘trans-’ into an empty signifier cf. Bromber (2013).

[204] A small share of scholars even uses the terms ‘translocality/translocalism’ and ‘transnationalism’ as synonyms with no difference in meaning (Greiner and Sakdapolrak 2013).

a detailed account cf. e.g. Brickell and Datta (2011); Withers (2009)). At that time, it was mainly concerned with the topics of migration and migrants respectively. Along this line of reasoning, translocality was being reduced to the (retrospectively) somewhat trivial fact that migrants are living in more than one place. Correspondingly, 'translocality' was thought of as a transnational practice across borders, carried out by migrants; it was perceived of as the local-to-local connections across national boundaries shaped through everyday practices of transnational migrants. Studies inspired by this early perspective on translocality include e.g. Riccio research on Senegalese migrants in Italy and Senegal (2001), Hedbergy study on Thai women in rural Sweden (2016), Kim's research on Korean women selling sex in the USA (2016), Bork-Hüffer et al.'s study on African merchant entrepreneurs in China (2016) or Schröder's research on Central Asian translocal livelihoods (2014).

However, with more and more disciplines involved in the design and elaboration of translocality such as anthropology, development studies, history and cultural and area studies (Greiner and Sakdapolrak 2013), the approach moved beyond geographical concepts to ask more fundamental questions, challenging, as noted before, the idea of "cultures as closed entities bound to nation states" (Bromber 2013:9). The latter is of utter importance to the concept of translocality as it is one of the very purposes of its introduction, namely to "[b]uild on the insights from transnationalism" (Greiner and Sakdapolrak 2013:373) while simultaneously striving to master some of the limitations of 'translocality', namely overcoming the paradigm of the nation state and the eurocentricity inherent to the concept.

On this background, many researchers dealing with translocality came to the conclusion that there is ample evidence showing phenomena of translocality within national borders. In the meantime, it is therefore generally acknowledged that 'translocality' is productive without being necessarily related to issues of national states. On a very generic level, it is understood as the "simultaneity and interpenetration of the global with the local" (Lachenmann 2012:106, translated from German by the author) or, in Brickell and Datta's words, as "simultaneous situatedness across different locales" (2011:4). It necessarily involves processes of local adaptation and re-structuration and, as a consequence, results in varying degrees of adaption or rejection. The concept serves to depict "socio-spatial dynamics and processes of simultaneity and identity formation that transcend boundaries – including, but also extending beyond, those of nation-states" (Greiner and Sakdapolrak 2013:373). According to Appadurai, the concept is used to outline cultural and social representations of a globalizing world shaped by the movement of people, ideas and goods across borders (1996e). A number of schol-

ars address the very relation between the global and the local they consider problematic or, differently put, the overly schematic separation between the global and the local. It is argued that while the existence of the local is not questioned, specific local environments have trouble staying separate and untouched from larger movements of foreign resources, populations and ideas flowing through them. A static, untouched local does not exist[205], it is argued, as much as people living permanently in one place cannot help but notice and process news and trends arriving from the outside, at the risk of being altered by whatever arrives. Alike, no person, regardless of how much of a traveler she or he is, lives in some sort of global 'everywhere' and is able to experience some kind of 'global totality' that lacks all the specific differences characterizing local places. In other words: For all the cosmopolitan travels and movements through space, one is always specifically somewhere and mostly also rooted somewhere (Appiah 1997). Moreover, translocality is also said to allow to spotlight the "multiplying forms of mobility […] without losing sight of the importance of localities in peoples' lives" (Oakes and Schein 2006:1), a point also stressed by Riccio who argues for considering both transnational connections and local contexts (2001).

Finally, there is a subjective dimension to translocality that cannot be observed by outsiders, as it takes place in the imagination of the people and therefore does not involve actual physical movement, be it of the people themselves or of related ideas and goods (Oakes and Schein 2006). This dimension includes all sort of translocal imaginaries and vicarious mobilities, as it is e.g. often the case with migrants and refugees whose places of origin continue to live in their imaginations regardless of whether a return to these places is feasible at all.[206] As such, translocality does not require actual mobility, but is more of a mode of thinking about mobility and connectedness.

Research inspired by this broader perspective on translocality includes e.g. Baird's study on the concept of 'indigenous people' in Laos (2015), Benz's research on the role of migration and translocality in Pakistan (2014), Kochan's study on internal migrants in contemporary China (2016) or Holmes research on translocality in the context of Brazilian favela blogs (2016).

[205] It is interesting to note that the discourse on the 'noble savage' is closely linked to the Western idea of the 'pristine, untouched local'. For debate on the 'noble savage' in general cf. footnote 33.

[206] As Korff outlines, over time imagination can even replace reality in cases in which the far away 'home' changes as much as the memory of it, leaving the individuals with a "virtual local identity, where the local is an image of the mind" (2003:3).

6.3.2.1 Summary of the dimensions of 'locality' informed

Recapitulating the insights gained on 'translocality' in regard to the five dimensions of locality outlined in chapter 4.4.2 shows that four of the five dimensions are indeed informed, namely (9) the physical-material dimension of locality, the (11) network dimension of locality, the (12) influx/response dimension of locality and, lastly, the (13) relevance dimension of locality (cf. illustration 34 for an overview).

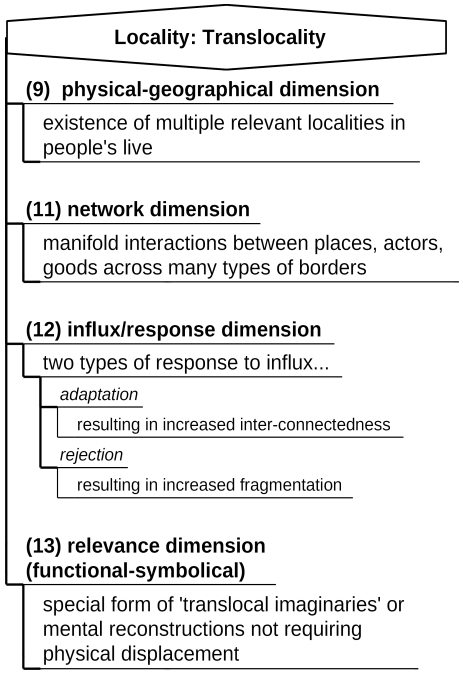

Illustration 34: Dimensions of locality informed by translocality

'Translocality' contributes to informing the (9) physical-material dimension of locality by stressing that people live their life in more than one place, a characteristic shared by 'multilocality' (cf. chapter 6.3.1). It emphasizes that these local-local connections rest on everyday practices and decisions of countless actors in the diverse localities. Building on the central aspect of 'movement' in general – be it of people, goods/objects, ideas etc. – 'translocality' describes the dynamics resulting from the combination of mobility, migration and socio-spatial interconnectedness. Special attention is thereby paid to the actual situatedness, in the first place of people, during mobility itself (and not only after their arrival in the place of destination).

Additionally, 'translocality' also lends itself to informing the (11) network dimension of locality, more precisely the manifold interactions between places, actors and goods/objects and ideas across manifold forms of borders, including but not limited to national borders. In this process, the global and the local are not separated, but are seen as interpenetrating each other, resulting in a simultaneous co-situatedness of the global and the local.

Moreover, the concept of translocality also elucidates the (12) influx/response dimension of locality. The interaction in question consists here of any given influx coming into a specific locality and a locally specific response to this influx. Generally, the interaction takes different forms: It can result in local adaptation and reconstruction of a given foreign influx, leading to an overall interconnectedness and entanglement and creating potential overlaps and cross-territorial linkages with other localities. Local adaptation,

however, can also be rejected, resulting in disparity and fragmentation from other localities. This shows that to understand a specific local situation, one has to take into account the many translocal connections as much as the specific local context, given that the latter is decisive when it comes to accepting and integrating the influx in question.

Lastly, 'translocality' also informs the (13) relevance dimension of locality, addressing the functional-symbolic aspects. It does so by allowing for a special form of 'translocal imaginaries', i.e. mental constructions that concern the subjective dimension of one's imagination and do not necessitate a physical displacement. It is described to be especially prominent among groups of people who keep a vivid mental connection with their place of origin as e.g. in the case of migrants or refugees.

6.3.3 Globalization and glocalization

In parallel to the previous chapters, I proceed by first recapitulating the theoretical contributions to 'globalization/glocalization' (chapter 6.3.3.1) before analyzing to what extent the five dimensions of locality from chapter 4.4.2 are informed by this theoretical approach (chapter 6.3.3.2).

6.3.3.1 Theoretical contributions

Although still recent as term, globalization has turned into one of the key concepts for discussing contemporary societal phenomena – to the extent that it became "something close to a general name for a current era in which we all live, for better or worse" (Beyer 2007:98). As it is characteristic for migration processes, globalization has a profound effect on the relationship between the local and global in that is shapes the "significance attached to place" (Ruotsala 2008:44) and the ways in which one thinks about this relationship. The term itself first appeared in 1961 in Webster's Dictionary, came into use as bureaucratic and later business buzzword in the 1970s and entered the scientific discourse in the 1980s to definitively gain momentum in public and scientific debates in the 1990s, leading to a vast increase in globalization studies (for a detailed account of the concept's evolution cf. Chanda (2008)). Globalization reiterates the idea already expressed in earlier terms such as McLuhan's notion of a 'global village' (1964), condensing in the "core meaning of all people on earth living in a single social space" (Beyer 2007:98). Schuerkens (2003b) stresses this aspect by referring to the post-traditional society as the first global society where preexisting traditions inevitably came into contact with other traditions or alternative life concepts, related customs and mores. In contrast to this global society, she argues, traditional societies were characterized by a "quasi-segmental state, in which many large enclaves of traditionalism per-

sisted" (2003b:210). This allowed the traditional societies to keep the global community divided into separated spaces with respective mores and customs and comparatively little incentive to establish a broad exchange.

The processes of globalization, however, put an end to this spatially segregated perspective on the world that was formative for many centuries. As a matter of fact, globalization had and has a noteworthy influence on how space, spatiality, place and locality are perceived, structured and organized. This spatial character of the notion 'globalization' is also underlined by Hannerz in his analysis that "[i]n the most general sense, globalization is a matter of increasing long-distance interconnectedness, at least across national boundaries, preferably between continents as well" (1996:17). This also involves a "process of deterritorialization" (Schuerkens 2003b:213) that is characterized by the vanishing of determined links of humans to national frontiers, towns and villages. Consequently, Schuerkens argues, one of the most salient effects of globalization is that social relationships are less and less bound by spatial location (2003b). This finds its expression e.g. in the fact that social groups are gradually less linked by a shared common local history and worldview.[207]

In parallel to the tendencies towards globalization and global integration, one cannot, however, overlook the opposite movement, i.e. the "intensification of the local cultural traditions, […] local particularism and differentiation" (Schuerkens 2003b:217). These processes take place in a broad number of societal fields, ranging from economy to politics and environmental movements (MacLeod 1991). Schuerkens argues that the focus on the local "can be an expression of fortification, revitalization or reinvention of local cultural identities and traditions based on ethnic, social, or religious elements they have in common" (2003b:217). This trend to reservedness grounds in the fact that local groups have gained not only an understanding of the complexity of global systems, but also came to realize how rapidly and extensively the world is changing on a global level (MacLeod 1991) – an insight that may lead to perceiving one's culture and life-form threatened or even attacked and to developing "a desire for stability and continuity" (Schuerkens 2003b:217). Strassoldo argues along similar lines when identifying the need for "a feeling of stability and confidence in the face of processes of globalization" (1992:46) as main driver of this so-called 'new localism'. According to him, this drive towards stability can find its expression in references to local communities and local values, in a revitalization of traditional cultures and in an emphasis on local cultural iden-

[207] The effects of globalization can amount to the structures of local communities no longer being negotiated and constructed at the local level, but potentially by organizations and bodies far away, as in the case of development initiatives aiming at improving the livelihoods of local communities. Such processes crystallize what she meant by calling globalization essentially "action at distance" (Schuerkens 2003b:210).

tity. It is motivated by the “search for a refuge from the unsettling confusion of the larger world” (1992:46). In this context, Schuerkens points to an additional, less often mentioned factor: the emphasis on local cultures as “an opposition to globalization processes originated in western countries” (2003b:218). According to Strassoldo, the worldwide spread of ideas and values resulted in a new cultural self-confidence. The recognition of culture and cultural forms of expression as a universal value gives, in turn, rise to “a global recognition of the right to an own culture and cultural self-determination” (Schuerkens 2003b:218). On this background, Strassoldo (1992) argues that the emphasis on one's own culture is not primarily oriented against another real culture but rather against anticipated negative effects of globalization processes.

In the contemporary world, these two opposing tendencies at work – universalizing processes of modernization and globalization as well as what could be called processes of localization aiming at maintaining traditional and culturally authentic life-worlds – increasingly and inseparably intertwine, being as much interdependent as mutually enabling and structuring.[208] By and large, the 'global' can no longer be conceptualized without the respective 'local' and vice-versa. Supporting this revised line of thought, Pieterse (2004) also thinks of the globalization of cultures as of processes of hybridization or synthesis, arguing against alternative views that are e.g. reflected in Samuel Huntington’s prominent notion of the ‘clash of civilizations’ (1993) or in the phrase of the McDonaldization of the world coined by Ritzer (1993).

This increasingly formative interaction between global forces and local life-worlds gave raise to a new term – 'glocalization' – a portemanteau of 'globalization' and 'localization'. It is indeed an interaction; globalization is, in Schuerkens words, “not simply dissolving local life-worlds in their traditional local structures and settings, but is interacting with them in a sort of localization, or 'glocalization' [...]” (2003a:196–97). In fact, as Robertson (1995) argues, it is the local culture that assigns meaning to global influences, giving the global a local flavor. As such, glocalization denotes the way “globalization dynamics are always re-interpreted locally” (Ejderyan and Backhaus 2007:1), leading thus to context-dependent outcomes.

Originally derived from the Japanese notion '*dochakuka*'[209], the English counter-part term ‘glocalization’ was deployed and developed by the British sociologist Roland

[208] In this vein, Robertson understands human actions on local levels such as the search for 'home' or 'roots' not primarily as counter-reactions to globalization, but rather as a need prompted and structured by the universalizing processes of globalization (1995).

[209] In its original use, the term referred to the adaptation of farming techniques to local conditions – however, with increasing industrialization, the semantic meaning was transferred in the 1980s from agriculture to the field of business and 'dochakuka' started to denote 'global localization', i.e. the idea of adapting a global product to conform to a local market with its specific local taste and interest (Robertson 1995).

Robertson in the 1990s (1992, 1995, 1998); subsequent salient theoretical contributions to the debate were made by Cox (1997), Ritzer (2003, 2004), Roudometof (2005, 2015) and Swyngedouw (1997, 2004). In the beginning, the term was biased towards economic issues and primarily used in the context of micro-marketing. It is the merit of the early theorists interested in global processes to have freed the concept from its original sense and to have introduced novel characteristics related to the social, cultural and political dimensions. In doing so, they aimed at providing an alternative to the concept of globalization that, in Vizureanu' words, might be able to "capture much more from the complex reality of phenomena and processes 'hidden' by the latter" (2013:194).[210] In this spirit, at a conference on "Globalization and Indigenous Culture" in 1997, Robertson extended the semantic field, stating that glocalization, in general, "means the simultaneity – the co-presence – of both universalizing and particularizing tendencies" (1997:4).[211] As a result of this development, the term 'glocalization' nowadays incorporates aspects of both sides – global forces and local life-worlds that no longer need to be considered separate entities, but need to be understood in their interaction in the very "convergence of global dynamics and local contexts" (Ejderyan and Backhaus 2007:1; Schuerkens 2003a). In general, glocalization is strongly informed by the development of distinct, however overlapping fields of global-local linkages, resulting in what Garardi calls "a condition of globalized panlocality" (2001:33).

There is a general agreement among scholars that even though intercultural ties are increasingly fastened throughout the world, humankind is far away from steering towards a united human culture. Rebutting initial concerns drawing parallels to globalization, glocalization does not lead to cultural homogenization. On the contrary, processes of heterogenization and homogenization coexist (Giulianotti and Robertson 2007; Robertson 1995). In fact, processes of glocalization are said to give rise to "varying forms of implantation of and adaptation to western modernity and culture, crystallizing in differing mixtures and hybrid modes of western modernity and non-western traditions, various forms of reaction and resistance to the imposition of the western model, or various forms of dissolution and destruction of traditional life-worlds through the impact of the western civilization" (Schuerkens 2003b:195).

The reason for this phenomenon lies with the very nature of the interaction of global and local forces. Despite the fact that global trends flood the world and create the im-

[210] Some authors went as far as suggesting replacing the concept of globalization with the one of glocalization, wishing to blur the boundaries between the local and the global and arguing that glocalization is the way how globalization operates in the real world (Robertson 1992, 1995; Swyngedouw 2004).

[211] Pieterse explored similar converging processes with respect to the concept of culture, denoting them with terms such as mélange, syncretism or hybridity (2004). For a detailed discussion of 'hybridity' cf. chapter 6.3.6.

pression as though the local was in a subordinate, receptive role and bound to be eventually swallowed up by the global, research showed that, in fact, it is ultimately the local that is decisive in how exactly global trends are received in a specific location (cf. e.g. Ejderyan (2007); Long (1996); Steger (2010)). In fact, it is the local where the global influences encounter a specific daily reality; it is this particular reality against which the influences from outside are selected, processed, assessed and consumed in line with the local culture's needs, taste and social structure. In this context, Schuerkens refers to the “cultural power of the local daily life” (2003b:216) and considers the possibilities of cultural influences from the global culture to be markedly limited.

Given the decisiveness of the local in determining if and/or how global influences are integrated, Hannerz introduced the term “form-of-life-frame” (1996:28) to better describe the local and its essential elements. In his conception, this frame encompasses all elements that are generally taken for granted as aspects of local life such as the daily activities in the household, workplace and neighborhood, daily emotional face-to-face relations to close people as well as daily uses of symbolic forms (1996:28). It is within this form-of-life-frame that culture is in large part organized, produced and spread whereby every individual participating in the specific local life takes part in the constant circulation and negotiation of meanings. Thus, external cultural inflows have to be negotiated with daily local actions and interactions. In this process, the cultural inflows are “filtered by local human experiences which allow the acceptance, refusal, interpretation and transformation of actions and forms” (Schuerkens 2003b:216). As such, the local form-of-life-frame is under constant potential construction as incoming cultural elements such as e.g. Western consumer articles and values or television series can evolve into elements of the local daily life. The local form-of-life-frame is temporal and therefore always about to potentially be re-negotiated and subsequently changed in the wake of external cultural influences.

Reflecting this inherent and intertwined complexity, Hannerz characterizes the local as an area “where the global, or what has been local somewhere else, also has some chance of making itself at home” (1996:27). Summarizing the complex interaction, Long describes the mutual influence of the local and the global as follows: “'Local' situations are transformed by becoming part of wider 'global' arenas and processes, while 'global' dimensions are made meaningful in relation to specific 'local' conditions and through the understandings and strategies of 'local' actors.” (1996:8) Consequently, an unceasing interaction of local elements and global influences takes place, resulting in the permanent local co-construction of cultural meaning and cultural forms.

Research focusing on the interaction between globalization and glocalization has been conducted on a broad variety of social phenomena such as language, education, law, sport and leisure activities, to only name a few. Examples include the study by Pérez-Llantada and Ferguson on “English as a gloCalization Phenomenon” (2006), Ching-Yi and Talley’s research on “’Think globally, act locally’: Glocalization in Taiwanese Higher Education” (2012), Shalini Randeria’s work on “Glocalization of Law: Environmental Justice, World Bank, NGOs and the Cunning State in India” (2003), the studies by Giulianotti and Robertson on ”Glocalization and Sport in Asia” (2012) and “Forms of Glocalization: Globalization and the Migration Strategies of Scottish Football Fans in North America” (2007), and, lastly, the leisure-related study by Matusitz on “Disney’s successful adaptation in Hong Kong: A glocalization perspective” (2011).

6.3.3.2 Summary of the dimensions of ‘locality’ informed

Recapitulating the theoretical insights on globalization/glocalization described above against the backdrop of the locality dimensions outlined in chapter 4.4.2 shows that the twin concept contributes to informing two of the five locality dimensions, that is the (11) network dimension of locality and the (12) influx/response dimension of locality (cf. illustration 35 for an overview).

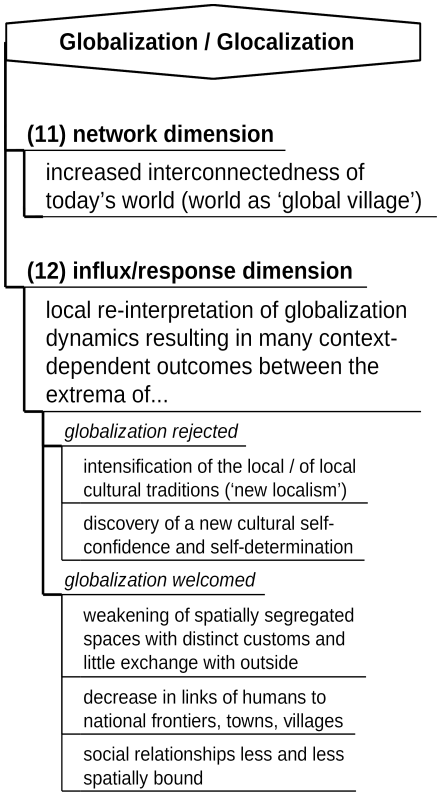

Illustration 35: Dimensions of locality informed by globalization/glocalization

Globalization/Glocalization contributes to informing the (11) network dimension of locality by emphasizing the significantly increased interconnectedness of today’s world, famously captured in the notion of the world as ‘global village’. In general and notwithstanding certain processes of particularization, a shift has taken and still takes place from a formerly more territorialized and nation-state-oriented setting to a more fluid, translocal, interconnected and globally oriented one. Given that cultural practices and forms are now more disconnected from geographical, social and institutional embeddedness, culture as a whole – and with it knowledge – has become more mobile and prone to mixing and exchange.[212]

[212] This results in what research commonly denotes as ‘postmodern hybridization’ (for ‘hybridity’ cf. chapter 6.3.6).

Related to (11), the concept of globalization/glocalization also contributes to inform the (12) influx/response dimension of locality. While on the overall, global interconnectedness doubtlessly increased, the reactions to this process were highly disparate, accounting for the many diverse local reactions to globalizing influences. In certain regions and domains, globalization managed to prevail or was actively welcomed; this led to putting an end, or at least weakening, spatially segregated spaces with distinct mores and customs and relatively little exchange with the surrounding world. Without doubt, this process entailed at the same time a decreasing and/or vanishing of specifically defined links of humans to national frontiers, towns, villages and, on the overall, results in social relationships being less and less bound by spatial location. At the same time, globalization led to quite the opposite and caused a counter-reaction, i.e. an intensification of local cultural traditions and the local in general, resulting in a so-called 'new localism'. As an opposition to global processes stemming from Western countries, emphasis is thereby set on local culture, leading to the discovery of a new cultural self-confidence and self-determination. Regardless of the degree to which globalization is actively integrated in a local culture, there is no such thing as one single glocalization – rather, the term underlines that globalization dynamics are always re-interpreted locally, leading to countless context- and setting-dependent outcomes and, consequently, countless versions of the specific glocalization phenomena.

6.3.4 Global cultural flows

As far as the next spatial contribution is concerned, I again start by summing up its theoretical contributions to the overall spatial debate (chapter 6.3.4.1) before analyzing to what extent the five dimensions of locality listed earlier (cf. chapter 4.4.2) are informed by it (chapter 6.3.4.2).

6.3.4.1 Theoretical contributions

The cultural dynamics of globalization and related effects on locality are also at the core of the work of Arjun Appadurai, a cultural anthropologist both interested in the relation between local places and global forces and aware that locality was in the process of increasingly becoming differentiated from a physical site or place (Roudometof 2005). Interested in the production of locality under the conditions of modernity, he set

out to study the “nature of locality, as a lived experience, in a globalized, deterritorialized[213] world” (Appadurai 1996b:52).[214]

Relying on a theoretical background in Marxist cultural studies, Appadurai’s work finds itself within a theoretical framework that builds on the idea of an increasingly borderless global economy (Robinson 2011). While Marxist approaches principally gravitate towards concentrating on connections and similarities, Appadurai chooses an alternative approach and focuses on disjunctures and disjunctions. He unveils how many of the relations among different contemporary so-called ‘global flows’ do not fit and at which points various processes or logics are not compatible, leading to ruptures, tensions and conflicts.

Laying out what he thought of as meta theory of disjuncture in his much recognized essay “Disjuncture and Difference in the Global Cultural Economy” (1996a), he argues that deterritorialization along with the breaking-down of existent territorial connections represent central characteristics of the modern world. According to him, one not longer lives one’s life in locally imagined communities, but in more aggregated entities that are globally imagined, all involved in a constant global exchange of ideas and information, whereby media and migration are the main drivers of this process (Appadurai 1996c).

On the background of the above mentioned borderless global economy he deems a “complex, overlapping, disjunctive order” (1996a:32), Appadurai suggests his often cited model of ‘global cultural flows’ (1996a:33–36). He argues that the above described contemporary ‘order’ is made up of distinctive interrelated, yet disjunctive global cultural flows. His model sorts the various global processes or flows into five categories or, in his terminology, 'scapes', i.e. ethno-, techno-, finance-, media- and ideoscapes and posits that these scapes are integral in establishing what he calls a ‘worldwide connectedness’. The first three '-scapes' – ethnoscape, technoscape and financescape – are all closely interrelated and shift in relation to each other, forming the ever-moving global landscape.

213 In Appadurai’s understanding, ‘deterritorialization’ entails a “systematic subversion of the principle of territoriality” (Berking 2003:250) that is formative for states, local cultures and collective identities. According to him, it signifies that spaces are progressively no longer restricted in territorial terms (but with respect to the cultural flows or ‘-scapes’, cf. below) and display non-territorial forms of sociation such as diasporic public spheres and translocalities (Appadurai 1996d).

214 Appadurai distinguishes between the two terms ‘locality’ and ‘neighborhood’ whereby the latter is defined as “life-worlds constituted by relatively stable associations, by relatively known and shared histories and by collectively traversed and legible spaces and places” (1996e:178–79). Accordingly, ‘neighborhood’ refers to the actually existing social forms in which locality is expressed.

Appadurai's *ethnoscapes*[215] encompass groups of people in motion or "[...] the landscape of persons who constitute the shifting world in which we live" (1996a:33) – a characteristic and ever-amplifying phenomenon of (post-)modernity as short- and long-distance transportation became, by and large, increasingly available and affordable. Against this background, Appadurai argues that the fluid and open concept of 'global ethnoscapes' is better suited to describe phenomena linked to the globalization of culture than the idea of locally bounded cultures and ethnic groups (Nieswand 2009). The term 'ethnoscape' refers to the migration of people across cultures and borders and underlines the notion of the world and its many communities as fluid and mobile instead of static and sedentary. These groups of people in motion comprise a broad range of 'travelers' including seasonal workers, refugees, migrants, but also tourists and explorers of different kinds. Their motivations are equally diverse and range from traumatic and dramatic reasons (war, displacement, natural disasters, famine etc.)[216] to hope-instilling ones (as in the case of those looking for a better livelihood elsewhere)[217] and finally to leisure-oriented ones (as in the case of tourists). To their new homes, they take their familiar cultural characteristics, traditions, norms and values, whereas after their return their old homes come into contact with newly imported ideas, perspectives, customs, along with the new currency earned elsewhere (Ruotsala 2008). This ongoing, habitual exchange bears an influence on the people whose lives are coined by constant movements between local settings. Correspondingly, they display much less often fixed imaginary identities compared to sedentary groups of people. In this respect, ethnoscapes represent "deterritorialized spaces of ethnic group identity formation" (Wonneberger 2011:130) or, in Appadurai's words, "the many displaced, deterritorialized, and transient populations that constitute today's ethnoscapes are engaged in the construction of locality, as a structure of feeling, often in the face of the erosion, dispersal and implosion of neighborhoods as coherent social formations" (1996e:199). Prominent examples of research on ethnoscapes encompass the study by Aaron Koh on "Global flows of foreign talent: Identity anxieties in Singapore's ethnoscape" (2003) or the one by Paul Watt on "East London Mobilities: The 'Cockney Diaspora' and the Remaking of the Essex Ethnoscape" (2014) .

---

215 Kokot points to the great similarity of Appadurai's notion of 'global ethnoscapes' with Brah's concept of 'diaspora space' (Brah 2005), arguing that both approaches follow the basic assumption that certain nodes of concentration exist in which "different types of networks (or 'cultural flows' in Appadurai's terms) do interconnect" (2007:19). In her view, it is exactly in these nodes where the transnational practice of creating locality takes place.

216 In this context, Appadurai speaks of "diaspora of terror" and "diaspora of despair" (1996c:6).

217 Appadurai refers to this phenomenon as to "diaspora of hope" (1996c:6).

Technoscape[218] describes the 'space' established by scientific and technological developments. By this term, Appadurai denotes the “global configuration, also ever fluid, of technology” (1996a:34) or, in other words, the flow of technology, mechanical goods, software goods etc. in a boundless environment. Technoscapes result from the power of technology and profit from its rapid diffusion across national boundaries. They arise once technical devices, artifacts, experimental materials and related social practices become more and more comparable or connectable, allowing linking different entities in almost no time (Powell and Steel 2011). According to Appadurai, this manifold movement of technology leads to new forms of cultural interaction and exchange that become increasingly complex and multi-directional. He underlines the importance of speed and velocity for technoscapes: Regardless of whether the technology in question is high- or low-level, mechanical or informational, it moves at unprecedented high speeds across a range of hitherto impassible boundaries (Appadurai 1996a). Next to the common characteristic of high speeds, Barry (2007) argues, the technoscapes are characterized by a number of varying parameters such as the points of access to the technoscapes (more or less clearly marked), the gateways (more or less well-defined and functioning) or the ownership structure (privatized or some form of open access).[219] Finally, Appadurai emphasizes that the movement of technology within the technoscapes is driven by the multifarious relationships between “money flows, political possibilities, and the availability of both un- and highly skilled labor” (1996a:34), underlining the close relation between techno- and financescapes. Research on technoscapes includes the study by Mallan et al. on “Navigating iScapes: Australian Youth Constructing Identities and Social Relations in a Network Society” (2010), Bucholzki’s research on “Surveillance and Sousveillance on Facebook: Between Empowerment and Disempowerment” (2016) or, on a more general level, Sue Peters’ research on “Information Mobility: the Behavioural Technoscape” (2004).

Appadurai’s *financescape* describes the space(s) created by the cross-border movements of money or, as Powell (2011) details, of loans, equities, direct and indirect investments, securities and currencies transcending the power of the nation state. Appadurai sheds light on the fact that “currency markets, national stock exchanges, and commodity speculations move megamonnies through national turnstiles at blinding speed” (Appadurai 1996a:330). As such, financescapes emerge from the ever increasingly fast financial flows and the related global political economy that builds on what he

[218] There are similarities between Appadurai’s notion of 'technoscape' and the notion of 'technological zones of circulation' suggested by Haraway (2007).

[219] Barry (2007) underlines the role of technoscapes with respect to the formation of Europe, stating that the unification of Europe entailed to a significant degree an effort to build a more or less homogeneous European technological zone.

sees as the ongoing decline of the nation-state. In fact, according to Appadurai, the logic of this financial hegemony consists in cutting government expenditures and state interventions through privatization and contracting out. Thus, financescapes do not come without perils for society as a whole; in fact, Appadurai views them as the imperialism of global flows of finance in which unrestrained and fast movements of capital might have the potential to destabilize entire national economies (Powell 2012). The fact that the economy is constantly in flux and remains widely unpredictable, regardless of all attempts to manipulate it, has significant effects on the financescapes. Given the scale of the world and its omnipresent interconnectedness, money is even harder to track than ever, notwithstanding all technological innovations. In this respect, Powell describes that financescapes greatly facilitate a corporation's capacity to have its money 'exit' a given nation, thereby bypassing corporate responsibility and/or taxation. Examples for research on financescapes encompass the publication by Cátia Ferreira on “Second Life: The Emergence of a New Moneyscape” (2015) or the one by Kimberley Kai Hoang entitled “Flirting with Capital: Negotiating Perceptions of Pan-Asian Ascendency and Western Decline in Global Sex Work” (2014).

The other two '-scapes', mediascapes and ideoscapes, deal with the national and international creation and dissemination of information, ideas, concepts and related representations, images and sound.

Mediascapes can be understood as the movement of media around the world or as the flow of images and information. In Appadurai’s conceptualization, the function of mediascapes consists in providing “large and complex repertoires of images, narratives, and ethnoscapes to viewers throughout the world” (1996a:35). This global movement of media includes the contributions by traditional media outlets (newspapers and magazines (print and on-line), television and radio stations, film studios) as much as, more recently, the content produced by countless individuals on the internet in general and on social media platforms in particular. As such, mediascapes rely on many players around the world having acquired two core competences (or one of the two as they do not have to be necessarily combined in the same actor): the ability to both produce media images and to spread them (Appadurai 1996a) – a development that got accelerated over the last years due to the widespread diffusion of internet access and the ready availability of mobile devices. This movement of media around the world allows distant cultures and ethnicities to view each other (or at least the representations of each other), thereby shaping the ‘imagined world’ as narratives and images are quite often the only way to form an opinion about unfamiliar places or cultures. At the same time, these representations run the risk of portraying the place, ethnicity or culture in

question in a narrow-sighted or even skewed manner (Appadurai 1996a). According to him, the potential of media to transform the world cannot be underestimated. The main influence is generated by the massive degree of instability in the creation of viable selves and identities (Szeman 1997) – an instability Appadurai deems positive and productive. He argues that the almost global access to images and narratives by individuals at all social levels has led to a democratization of the imagination itself. While it was formerly by and large restricted to artistic and/or intellectual elites, the widespread access to images and narratives turned imagination into a daily activity accessible by everyone interested with access to media (Appadurai 1996c). It allows for the creation of new identities or, more generally, for the "dreaming of dreams that were previously unavailable to ordinary people" (Szeman 1997:4). As a result of the conjunction of media and migration and of the inherent democratization, 'the imagined' ceases to represent the 'imagined community' of the nation-state, but rather a larger number of "diasporic public spheres"[220] (Appadurai 1996c:4). Examples of research focusing on mediascapes include the PhD by Rajakulasingam Chelliah entitled "Between two time zones and places: A study on how media habits shape a sense of belonging among Tamils in Norway" (2012) or the publication by Daya Thussu on "Media on the Move: Global Flow and Contra-Flow" (2006).

Ideoscapes concern the global spread of ideas and values, denoting the movement of political ideas from one area to another. They center on the ideologies of governments and counter-ideologies of opposing movements around which "nation-states have organized their political cultures" (Powell and Steel 2011:79). Appadurai outlines that ideoscapes are frequently constructed from variants of Enlightenment ideas that are adapted and introduced as 'keywords' in local ideologies, representing a kind of global flow of ideological Western views: "These ideoscapes are composed of elements of the Enlightenment worldview, which consists of a chain of ideas, terms, and images, including *freedom, welfare, rights, sovereignty, representation*, and the master term *democracy*." (1996a:36) However, these shared basic assumptions and values do not entail a process of global rapprochement, on the contrary. As Strassoldo underlines in the context of Appadurai's ideoscapes, an increasing number of groups view their culture and lifestyle as a political right, which leads them to emphasizing their own culture, not seldom to the detriment of alternative ideoscapes. Subsequently, and in combination with the phenomena of global migration and mass media, it became easier to establish and promote global cultural differences (Strassoldo 1992). Examples of re-

[220] As an example for such diasporic public spheres, Appadurai mentions e.g. Pakistani cabdrivers in Chicago listening to sermons recorded in Iranian mosques (1996c).

search exploring ideoscapes encompass the study on “The internationalization of Higher Education with Chinese Characteristics: Appadurai’s Ideas Explored” by Suvi Jokila (2015), Katy Sian’s study on the topic “Losing my Religion: Sikhs in the UK” (2013) or Cobus Staben’s research on “Chewing on Japan: Consumption, Diplomacy and Kenny Kunene’s Nyotaimori Scandal” (2015).

These five ‘-scapes’ outlined above share a number of characteristics in their effort to suggest an “alternative spatial rendering of the present, one that is not ‘fixed’ as a typical landscape might be [...]” (Szeman 1997:4).

First, ‘-scapes’ are formative on all scales: The ‘-scapes’ apply and extend to a broad scale, covering both the local specificity and extending far beyond regional and national boundaries. Looking at political formations, ethnic groups and sectarian movements, Appadurai observes that these groups tend to transcend territorial borders and identities in their operations. Their movements occur on a world scale, but equally on national and regional levels. With respect to migrant labor, Korff (2003:3) exemplifies the broad scale from global to regional effects: “Migrant labor is not only heading towards the Middle East, North-America and Western Europe, but as well to Malaysia (migrants from Indonesia, India, Bangladesh, Pakistan, Myanmar, Bosnia), Thailand (migrants from Myanmar, Laos, Cambodia), Korea and other places.”

Second, ‘-scapes’ are fluid, irregular and in constant change: A second distinctive characteristic of all '-scapes' is their fluidity and variability, resulting from them being in constant change, adaptation and re-construction: “The suffix *-scape* allows us to point to the fluid, irregular shapes of these landscapes, shapes that characterize international capital as deeply as they do international clothing style.” (Appadurai 1996a:33) As Powell and Steel (2011) illustrate, ethnoscapes change as people move, technoscapes change as technology is invented and diffused, financescapes change along with the capital moving around globe and shaping the global economy, mediascapes change as a result of the extension and changes in the reach of media from different places and, lastly, ideoscapes change along with the exchange and the spreading of ideas.

Third, ‘-scapes’ are relational and actor-centered: **‘**Actor-centeredness’ and ‘relationality’ are at the core of Appadurai’s understanding of ‘locality’. According to him, locality does not relate to a specific place, size or definition (Ruotsala 2008). Rather, he views locality “as primarily relational and contextual rather than scalar or spatial, […] as a complex phenomenological quality, constituted by a series of links between the sense of social immediacy, the technologies of interactivity and the relativity of contexts” (Appadurai 1996e:178). Consequently, his notion of locality refers to relationships with lo-

cality and locality's relationship with others. He considers the local level to amount to significantly more than just being a site where global processes are reflected or have effects (Kokot 2007). He in fact argues that global interconnectedness is created by exactly these face-to-face interactions and by the daily practice of local actors (Appadurai 1996e). Consequently, the '-scapes' imply that they do not represent objectively given relations that look the same regardless of the respective perspective. Rather, these '-scapes' are "deeply perspectival constructs, inflected by the historical, linguistic, and political situatedness of different sorts of actors" (Appadurai 1996a:33).[221] On the background of this relationality, Appadurai deems locality an "inherently fragile social achievement" (1996e:179) in need of careful maintenance: "Even in the most intimate, spatially confined, geographically isolated situations, locality must be maintained carefully against various kinds of odds." (1996e:179) While these odds vary depending on place and time, Appadurai considers rituals, in first place 'rites de passage' to be crucial in the production of locality, both as the very spatial construction and as a way of embodiment through the production of local subjects: "They [the rituals] are ways to embody locality as well as to locate bodies in socially and spatially defined communities" (1996e:179). Alternative influential means to produce localized subjects and neighborhoods are, in his view, agricultural practices that structure the seasonal work in rural contexts (Appadurai 1996e:179–81).

Forth, '-scapes' are polyphonic: The forth characteristic – polyphony – is a direct consequence of the preceding characteristic of actor-centeredness and relationality. The polyphony and diversity inherent to the '-scapes' relativize the widespread concern that globalization inevitably leads to cultural homogenization. Appadurai posits that globalization does not translate into cultural imperialism, notwithstanding all equalizing tendencies.[222] He argues that given that an idea or image can change in its interpretation depending on the context or the spectator, there exist multiple realities within each of these types of flows. Comparable to real landscapes, Appadurai's '-scapes' look differently depending on the perspective, namely depending on who is looking and how one looks at the '-scape' in question (Powell and Steel 2011). As a result, unambiguousness is hardly available, if at all, given that the meaning of notions and ideas depend on the person ingesting them. For Appadurai, this signifies that we live in a world of "imagined worlds" (Appadurai 1996a:33) in which one's reality is no more real than somebody's else's.

[221] This explicit perspectivity led to significant criticism among the scholars who take a critical stance towards constructivism in general.

[222] On the contrary, he identifies the very interaction between global forces and local places as constitutive in terms of contemporary global relations: "The central problem of today's global interactions is the tension between cultural homogenization and cultural heterogenization." (1996a:33)

Fifth, imagination plays a central role in building of the '-scapes': The fifth characteristic relates to the central aspect of imagination. In Appadurai's perception, the different '-scapes' represent "building blocks of what […] [he] would like to call imagined worlds, that is, the multiple worlds that are constituted by the historically situated imaginations of persons and groups spread around the globe" (1996a:33). He considers imagination a social practice and a "key component of the new global order" (1996a:31):

> "No longer mere fantasy (opium for the masses whose real work is elsewhere), no longer simple escape (from a world defined principally by more concrete purposes and structures), no longer elite pastime (thus not relevant to the lives of ordinary people), and no longer mere contemplation (irrelevant for new forms of desire and subjectivity), the imagination has become an organized field of social practices, a form of work (in the sense of both labor and culturally organized practice), and a form of negotiation between sites of agency (individuals) and globally defined fields of possibility." (1996a:31).

Accordingly, imagination plays a central role in Appadurai's understanding of the overall organization of social life. As new ideas transported via migration and mass media led and still lead to a huge diversification, particular attention is paid to the distinctive opening up of new possibilities for self-determination and agency: "Lives today are as much acts of projection and imagination as they are enactments of known scripts or predictable outcomes." (Appadurai 1996b:61) As a result of, individual values, behaviors and lifestyles increasingly differ from local cultural traditions and frameworks (Lauser 2005; Schuerkens 2003b).

6.3.4.2 Summary of the dimensions of 'locality' informed

Analyzing the theoretical contributions by Appadurai's concept of global cultural flows against the backdrop of the locality dimensions described in chapter 4.4.2 shows that it contributes to informing three of the five dimensions, namely the (10) actor dimension of locality, the (11) network dimension of locality and, lastly, the (13) relevance dimension of locality (cf. illustration 36 for an overview).

Appadurai's approach stresses and thereby informs the (10) actor dimension of locality – on the one hand by emphasizing individual imagination and actor-centeredness as fundamental characteristics and on the other hand by postulating that the production of locality is inextricably linked to the five global cultural flows. These interrelated global cultural flows, Appadurai's '-scapes', turn out to be highly diverse and include living actors (humans, animals, plants etc.) and non-living ones (objects, ideas, practices etc.) moving through space. Appadurai enumerates five such spaces, namely ethno-, techno-, finance-, media- and ideoscapes, structuring the movement of people, technology, money, media and ideas/values respectively. These '-scapes' represent what

Appadurai calls the basis components of imagined worlds of past and present generations around the world. As such, these '-scapes' have to be thought of as of deeply perspectival constructs, shaped through context, perspective and individual imagination.

The approach also informs the (11) network dimension of locality, given that according to Appadurai, human interactions are organized along the above described five interrelated 'global cultural flows'. In addition, migration and movement in general play a pivotal role in the concept of global flows and are said to be formative in the alternative spatial rendering postulated by Appadurai, together with media. As a consequence, a spotlight is on the network that results from the interconnections established through the diverse global cultural flows and the omnipresent phenomena of migration/ movement. Whether it is living objects (e.g. humans, animals, plants) or non-living ones (e.g. objects, ideas, practices etc.) migrating is of little importance – in both cases a network is established connecting thematically related 'dots' across space.

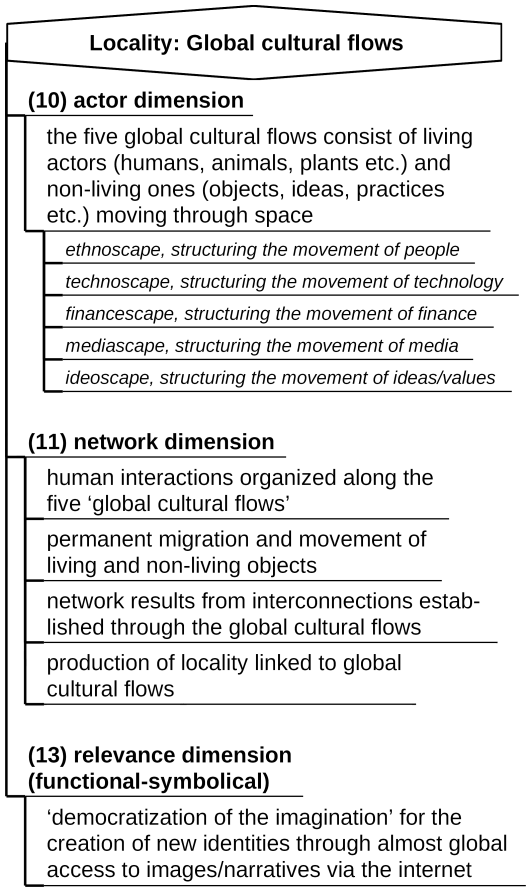

Illustration 36: Dimensions of locality informed by global cultural flows

Lastly, Appadurai's concept also contributes to informing the (13) relevance dimension of locality whereby the so-called 'democratization of the imagination' plays a crucial role in attending to the functional and symbolic layers. According to him, imagination became democratized once individuals at all social levels could almost globally access images and narratives, without any major problems provided they had a reasonably viable internet access. Thus, individual imagination fueled by the ongoing global stream of images and narratives turned into a daily activity that is no longer reserved merely to artistic and/or intellectual elites, but allows everybody to create new identities, dream previously unavailable dreams and envision an alternative future.

6.3.5 Multi-sited ethnography

In parallel to the preceding chapters, I start by first summarizing the theoretical contributions to 'multi-sited ethnography' (chapter 6.3.5.1) before analyzing to what extent these contributions contribute to informing the five dimensions of locality outlined earlier (chapter 6.3.5.2).

6.3.5.1 Theoretical contributions

The analysis of globalization processes, along with the related consequences for the notion of culture led George Marcus to suggesting what he called 'multi-sited ethnography'.[223] In his seminal article "Ethnography in/of the World System: the Emergence of Multi-Sited Ethnography" (1995), Marcus laid out his idea of a contemporary approach to ethnography striving for adequately taking account of the phenomena of modernity and globalization (Coleman and von Hellermann 2011). He suggested the theoretical and methodological foundations of what could be called a multi-local and multi-perspective field research. This entailed a break with the way ethnography was conventionally conducted[224], i.e. with the approach of single-site ethnography, aiming at providing a comprehensive representation of more or less clearly circumscribed, fairly small social groups (Nadai and Maeder 2005; Pierides 2010). In fact, engaging in conventional ethnographic research implied, at least in theory, a relatively long-term stay in the research field site, in general several months upwards, ideally at least one year (Falzon 2009; Nadai and Maeder 2005). The actual research site itself was perceived as setting or scenery, mostly static and not too interesting in and by itself. Consequently, the site in question was mostly considered representing "the container of a particular set of social relations" (Falzon 2009:1) that were up to examination and potential comparison with the contents of other places' containers. In addition, it was assumed that these contents might allow for generalization, thus providing area, regional, or even universal/global knowledge (Falzon 2009).

In contrast to these perceptions, multi-sited ethnography does not aim at eventually picturing a portrait of the global. Rather, it starts from the assumption that every ethnography of a culture is already an ethnography of the entire system, given that the global influences the cultural and culture is not bound to a specific place, but unfolds in translocal spaces. On this background, Marcus argues that "any ethnography of a cul-

[223] Although being more of a contribution to methodology than to theory development, Marcus' approach forms part of this analysis due to the relevance of his perspective for crystallizing the modifying characteristics of 'locality' against the backdrop of the overarching topic of 'understanding local knowledge'.

[224] An alternative approach to understanding local dynamics and the plurality of experiences of diverse actors consists in the so-called 'iterative ethnographic research' that builds on systematic re-visits to research sites (cf. Burawoy (2003); O'Reilly (2005)).

tural formation in the world system is also an ethnography of the system, and therefore cannot be understood only in terms of the conventional single site 'mise-en-scène' of ethnographic research [...]" (Marcus 1998:83). In other words, it is ethnography *in* and *of* the world system (Marcus 1995) or in Minowa et al.'s words, "it is 'in', since it helps locate the local within the global; it is 'of', since the multiplicity of observation sites stimulates the researcher for tracing links among sites and representing the global as an interconnected system of the localities." (2012:483)

As such, multi-sited ethnography aims at providing an approach that allows for ethnographically researching transnational and global life-worlds. Rather than opting for studying single sites and locales[225], Marcus suggests that researchers concentrate on "multiple sites of observation and participation that cross-cut dichotomies such as the global and the local, the life-world and the system" (Marcus 1995:95). The objects of the research are mobile and multiply located (meaning in different locations) which in turn implies that the researcher tracks them across spatial and temporal boundaries. The aim thus consists in relating these multiple localizations to each other – localizations of the research interest that are often perceived as separate worlds, creating a fake impression of segregation and topical detachment. Correspondingly, under the paradigm of multi-site ethnography, interdisciplinary approaches to fieldwork opened up, accommodating methods from other disciplines such as e.g. science and technology studies, media studies and cultural studies.

According to Marcus' central tenet, multi-sited ethnography follows the object of its interest; even more, the very act of following is what defines the object of the study. In this respect, he proposed *six strategies* he considers useful in facilitating a linking of the fields according to multi-sited ethnography: (a) follow the people, (b) follow the thing, (c) follow the metaphor, (d) follow the plot/story/allegory, (e) follow the life/biography and (f) follow the conflict (Marcus 1995, 2005).

(a) 'Follow the people' implies orienting the ethnographic research towards the movements of specific people and groups, e.g. in the course of migration processes. Prominent examples of studies under this perspective include Gallo's research on gender relations among Malayali migrants in Italy (2005, 2006), Riccio's research on Senegalese migrants in Italy and Senegal (2001) and or Kassaye's study on transnational grandparenting among Ethiopian migrant families in the USA and Ethiopia (2015).

[225] According to Marcus, conventional ethnographic field research in the (pure) sense of Malinowski or Geertz is hardly feasible any longer, given that the symbols and narratives take on differing meanings while traveling over the globe and, consequently, are being interpreted divergently (2005, 2007:4).

(b) ‘Follow the thing’ involves focusing on the circulation and movements of specific things such as goods, gifts, money flows or art. A classic example of this type of ‘following’ is Sidney Mintz’s historico-cultural analysis of sugar (1985) or Tsing’s research on ‘matsutake’ (2009), a highly prominent mycorrhizal mushroom characteristic for Japanese cuisine.

(c) ‘Follow the metaphor’ signifies concentrating on mental constructs, i.e. objects within discourses and ways to think. In this setting, the circulation of signs, symbols and metaphors is crucial and has the potential to inform the constitutions of a field. Martin’s study entitled “Flexible Bodies” (1994) takes up the task of depicting the ways how people in different life-worlds within the American society think about the human immune system, thereby relating the perspectives of science, mass media and the common public, including alternative therapeutic approaches. Another example of ‘following the metaphor’ is Cohn’s study on gender and US national security discourses (2006).

(d) ‘Follow the plot/story/allegory’ implies taking stories and narrations learned in a field research site as starting point. Marcus suggests in this respect “reading for the plot and then testing this against the reality of ethnographic investigation that constructs its sites according to a compelling narrative” (Marcus 1995:109).[226] He concedes that following the plot/story/allegory is a somewhat more challenging sub-type, which might also contribute to it representing a “virtually untried mode of constructing multi-sited research" (1995:109).[227]

(e) ‘Follow the life/biography’ means that the focus is set on the autobiography of a person. It serves to relate various locations and ethnographic fields to each other and to follow the life story across these different fields. A widely discussed example of this perspective is Kanwal Mand’s study of the biographies of Sikh women (2005, 2006), following them from London to Tanzania or Lauser’s research on Philippine marriage migration (2004, 2005).

(f) ‘Follow the conflict’ entails following the different parties in conflicts[228], thus relating the fields to each other. Fynes’s research on the abortion debate in an American community (1998) represents a telling example of this sub-type.

---

[226] Critical voices question whether there is a strong categorical difference between (c) ‘follow the metaphor’ and (d) ‘follow the plot/story/allegory’ (Burger 2017, personal communication) – a question that cannot be solved here and, in fact, does not require a solution with respect to this project’s research focus, i.e. understanding local knowledge.

[227] The research by Willis (1977) on how working class kids end up in working class jobs already implemented this idea, several years ahead of Marcus’ publication of the concept of multi-sited ethnography.

[228] This perspective has already been elaborated in the context of the ‘extended case method’ (Burawoy 1998, 2009; Kempny 2005).

All in all, multi-sited ethnography may follow as many as six 'leads', i.e. (a) ethnic groups, (b) things and objects, (c) metaphors, (d) stories surfacing in multiple locations, (e) biographies of individuals or groups moving through space and time, and/or (f) conflicts that surpass boundaries. Often, in the actual research practice, several of these aspects occur together as expressions of the same topic. A prominent example is Scheper-Hughes's study on the international black market for the trade of human organs (2002, 2004) where she follows not only the organs in their transfer across a number of legal and illegal networks, but also the rumors and urban legends about child kidnapping and organ theft that are being bandied around in poor and needy communities.

By proposing multi-sited ethnography as a methodology, Marcus focuses on the potential that results from a systematic (inter-)relation of differing and geographically and socially distant fields. He argues that by means of such an approach, a greater understanding can be attained when studying the impact of world-systems on local communities and vice-versa. He is seconded by a number of researchers supporting his approach and claiming that it bears the potential to yield a better understanding of a range of perspectives around a specific topic/object/idea/procedure, thereby allowing for valuable generalization (Horst 2009; Nadai and Maeder 2005; Vossoughi and Gutiérrez 2010; Wylie and Albright 2014). Following a research interest through multiple spaces can, they argue, potentially reveal additional layers behind what was visible at the onset. Instead of e.g. studying a commodity in only one place, the researcher engaging in multi-sited ethnography follows its research interest as it moves over the globe, thereby uncovering its overall impact across the world. In addition, this approach also allows for comprehending the role of power and gaining an understanding of the ways in which power structures of apparently separated spaces eventually impact a specific population or group (Vossoughi and Gutiérrez 2010). Last, multiple research sites permit collecting multiple data sets for comparison, triangulation and contrast[229] during analysis, providing a broader and more accurate picture of the research object (Nadai and Maeder 2005).

6.3.5.2 Summary of the dimensions of 'locality' informed

Analyzing Marcus' theoretical contribution against the backdrop of the locality dimensions described in chapter 4.4.2 reveals that multi-sited ethnography indeed contributes to informing a whole range of dimensions, namely the (9) physical-material dimen-

[229] Nadai and Maeder (2005) underline that multi-sited ethnography is more than mere contrasting; rather, it adopts the principle of theoretically based contrasting as suggested by 'grounded theory' (cf. Glaser and Strauss (1967)).

sion of locality, the (10) actor dimension of locality, the (11) network dimension of locality and, lastly, the (12) influx/response dimension of locality (cf. illustration 37 for an overview).

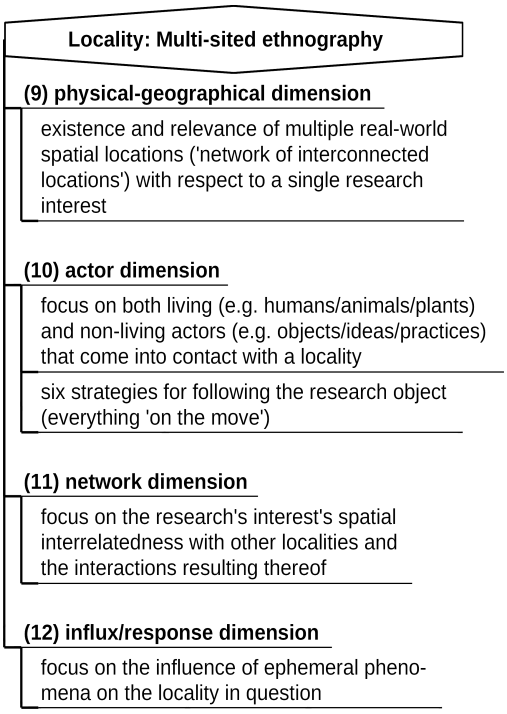

Illustration 37: Dimensions of locality informed by multi-sited ethnography

Multi-sited ethnography informs the (9) physical-material dimension of locality in acknowledging the sheer existence and relevance of multiple real-world spatial locations with respect to a single given research interest. In contrast to earlier approaches, the physical places where research is conducted are no longer seen as largely static containers that would not undergo any modifications while being researched. Rather, they came to be understood as a network of interconnected locations that shape and influence each other, from the local to the global level and vice-versa. The theory's explicit emphasis on the existence and relevance of this set of interconnected places/localities amounts to, in a first step, taking notice of the physical-material dimension of locality in the first place (next to also informing the network dimension of locality, cf. below).

In addition, Marcus' approach also takes into account and informs the (10) actor dimension of locality. The term 'actor dimension' extends to and covers all the living and non-living actors that come into contact with a specific locality, thereby influencing it while at the same time being shaped by the locality itself. As outlined in chapter 4.4.2, the category of actors includes in this project both living entities (e.g. humans/animals/plants) and non-living/material ones (e.g. objects/ideas/practices) and denotes everything, to use Marcus' vocabulary, that is on the move and can be followed. This comprises not only the category of people Marcus suggests that one follows, but also the remaining non-living 'leads' that require following, that is things (e.g. goods/gifts/money), metaphors, plot/stories/allegories, lifes/biographies and, eventually, conflicts.

Moreover, Marcus' multi-sited ethnography also contributes to informing the (11) network dimension of locality. Given that movement through space plays such a pivotal role in multi-sited ethnography, a focus is automatically set on understanding how the

different geographical locations relevant for a specific research question are interrelated and interact. Thus, following the research interest in its movement across localities provides one with an insight into the spatial interrelatedness of locations and the various degrees of interconnectedness. In this vein, multi-sited ethnography facilitates locating the local within the global and, at the same time, representing the global as an interrelated system of localities. Importantly, it additionally allows taking into consideration power structures in different locations that impact the lives of people over potentially long distances. This in turn permits to provide a more considered and layered picture of contemporary life-worlds that is able to cross-cut the usual dichotomies of 'global/local' or 'life-world/system' and, as last characteristic, allows for comparisons and triangulation to substantiate the research findings.

Lastly, multi-sited ethnography with its explicit focus on following the research object in its movement through space stresses – seen from the perspective of the localities – the aspect of moving into a locality, interacting there and moving out of it again. With respect to the dimensions of locality introduced in chapter 4.4.2, this informs the (12) influx/response dimension of locality and sensitizes to the influential potential of ephemeral phenomena emerging and impacting on the locality in question and disappearing or moving on again. As such, multi-sited ethnography is interested in uncovering the overall impact a specific research interest has across the world, i.e. the specific responses of a given number of places/localities on a specific influx.

6.3.6 Hybridity

In the vein of the preceding chapters, I begin by first recapping the theoretical contributions to 'hybridity' (chapter 6.3.6.1) before analyzing which of the five dimensions of locality described earlier (cf. chapter 4.4.2) are informed by the literature discussed (chapter 6.3.6.2).

6.3.6.1 Theoretical contributions

As introduced in chapter 6.2.1, hybridity is considered to represent a slippery and highly controversial, however emblematic notion of our era, given that in its current understanding, it resonates with central ideas of globalization and multiculturalism (Burke 2009; Kraidy 2005; Young 1995b). It celebrates "cultural difference and fusion" (Kraidy 2005:1), advocating the idea that all cultures will inevitably be transformed, foremost due to the myriad of free, unhampered economic exchanges. Correspondingly, the concept also displays an interesting and diverse history of utilization, from biology, racial theory and linguistics to contemporary applications across numerous academic disci-

plines and debates, including the discourses of post-colonialism, identity, race, anti-racism, diaspora, multiculturalism and globalization. In its most basic meaning, 'hybrid' and 'hybridity' refer to mixture of at least two elements that were previously considered standing alone and 'being pure' in their original states – a central conceptual tenet of hybridity and at the same time the main point of criticism (cf. chapter 6.2.1). Hybridity has overlapping semantic ranges with related concepts such as 'multiculturalism', 'métissage', 'syncretism', 'mestizaje' and 'creolization' (Brettell and Nibbs 2009; Burke 2009; Kraidy 2005; Pieterse 2001; Prabhu 2007) (for a detailed discussion of 'hybridity' and 'mestizaje' cf. e.g. Alonso (2004), on 'hybridity' and 'creolization' cf. e.g. Boswell (2005)).

Conceptionally, the development of the term's utilization depicts the development of hybridity rhetoric from biological to cultural discussions and, according to Orlove (2007), can be divided into three major stages. The 1st stage refers to hybridity against the backdrop of biology and racial mixing while the 2nd stage discusses hybridity from a postcolonial perspective, critically examining the effects of hybridization on culture and identity. The 3rd stage is characterized by both a broadening of the field and, in parallel, a critical stance towards the concept itself and its general validity.

1st stage: Hybridity in biology & hybridity as racial mixing

In the 1st stage, hybridity was first and foremost perceived of as a biological phenomenon and discussed in the context of, initially, genetic theory and, later and much more extensively, racial mixing (Acheraiou 2011). While originating in the early 17th century from botany/biology, the word 'hybrid' and its derivative 'hybridity' came into regular use only in the course of the 19th century to denote "the offspring of two plants or animals of different species"[230] (Young 1995b:5). Young adds that once the difference between the two original species became too significant, such offspring was generally considered being unable to produce own offspring that was fit to survive, if procreation was deemed possible at all.

By the mid 1800s, however, in parallel to the biological usage of the term where hybridization was considered an entirely desirable goal, especially in the context of horticultural endeavors (Arditti 1984; Kingsbury 2009; Nelson and Oliver 2004; Palladino 1993), the notion gained an additional, more problematic meaning. It was adopted by what would today be called Victorians' extreme right to label the offspring of humans of different races – races that were believed at that time to belong to different species that

[230] Acheraiou points to the fact that according to the 'Oxford English Dictionary', the word 'hybrida/hibrida/ibrida' denoted the "offspring of a tame sow and a wild boar, child of a free man and a slave" (2011:88).

should in theory not be able to produce offspring at all. In accordance with the *zeitgeist* of that period, discussions about hybridity were grounded in racist assumptions about the human species to the extent that the very notion of hybridity became critical in creating an emotionally agitated and fearful debate around racial mixing (Acheraiou 2011). This inherent emotionality was further fueled by the fact that the debates about human hybrids revolved around highly contested and value-laden cultural topics such as fertility, sexuality, desire and power (Young 1995c).

Although over time, arguments of infertility had to be given up in face of growing mixed-race populations, scholars of both social and natural sciences invested significant work into adjusting theories of biology that sustain ideologies of racial hierarchy and difference (Bakraina 2008; Young 1995b). Based among others on pseudo-scientific models of anatomy and craniometry, European scientists built a case to substantiate what was called the racial inferiority of Africans, Asians, Native Americans and Pacific Islanders to Europeans. On the background of this postulated inferiority of other races, the fate of hybrids was even worse: Considered to be of even less value than inferior races, hybrids were seen as straightforward aberrations. Carlyle, e.g., described them in his article “Occasional Discourse on the Negro Question” from 1849, as “[…] dark extensive moon-calves, unnameable abortions, wide-coiled monstrosities, such as the world has not seen hitherto!” (1849:531). Societally speaking, racial interbreeding was considered a serious threat to racial purity and was expected to eventually lead to a dilution of the European race, if unmanaged (Acheraiou 2011). Consequently, sexual unions between different races (in first place between blacks and whites) were met with great anxiety. Such an attitude clearly depicts that notwithstanding the backdrop of the humanitarian Age of Enlightenment, the existing social hierarchy was readily accepted and, consequently, the position at the hierarchy’s summit was almost exclusively attributed to Europeans, as the following summary statement from 1863 shows:

> “If there be various species of mankind, there must be a natural aristocracy among them, a dominant white species as opposed to the lower races who by their origin are destined to serve the nobility of mankind, and may be tamed, trained, and used like domestic animals, or may, according to circumstances, be fattened or used for physiological or other experiments without any compunction. [...] Wherever the lower races prove useless for the service of the white man, they must be abandoned to their savage state, it being their fate and natural destination. All wars of extermination, whenever the lower species are in the way of the white man, are not only excusable, but fully justifiable.” (Waitz and Collingwood 1863:13)

Unveiling the underlying cultural and racial arrogance, the colonial powers of the 19th and 20th centuries showed great reluctance to acknowledge the cultural influence from the colonies, conceptualizing hybridization only as a one-way process. Consequently,

the local population was not seen “as agents of knowledge and enlightenment” (Acheraiou 2011:63) and non-European contributions to modernity were dismissed or marginalized.

2nd stage: Post-colonial studies

The 2nd perspective on ‘hybridity’ is strongly shaped by broader socio-political factors that came into effect in the last decades of the 20th century: Economic liberalization, increasing immigration, a growing multi-cultural awareness and the social transformations ensuing the termination of colonial mandates significantly transformed the use and understanding of the term ‘hybridity’. In contrast to earlier approaches, it is now utilized by theorists to not only depict cultural forms that originated from colonial encounters between the ‘colonizers’ and the ‘colonized’, but to also analyze forms of resistance to colonialism (Scott 2005; Yazdiha 2010). This double perspective on hybridity became widely accepted in the course of the 1990s and is intrinsically interlinked with the surge of post-colonial studies and their critical stance towards cultural imperialism (Orlove 2007).

For the subsequent use of the term ‘hybridity’ in postcolonial studies, linguistic models were decisive in their perspective on culture as a process and a site of contestation. The work of Mikhail Bakhtin, a pioneering Russian literary theorist working on the political effects of hybridity in language, was particularly influential (Burke 2009). He used the notion ‘hybridity’ to refer to the way in which language, within a single utterance, can be double-accented – that is, can contain two styles, belief systems, or social languages (Bakraina 2008), thereby functioning as a challenging act of resistance against a dominant cultural power (Young 1995a). In this respect, he distinguishes between two kinds of hybridity, i.e. organic and intentional hybridity. The first one is defined as the permanently ongoing, unconscious hybridization while the latter one, intentional hybridity, is conceptualized as a “deliberate dialogical juxtaposition of different languages, discourses and points of view within the same semiotic/textual space without fusing them” (Acheraiou 2011:36). In this context, hybridity serves to describe the ways in which the power of colonial discourses “is disrupted in and through its very attempts to deny other knowledges, the traces of which shape colonial discourse and render it inherently double-voiced” (Bakraina 2008:2).

Generally speaking, principal post-colonial social theorists such as Homi Bhabha, Stuart Hall and Paul Gilroy are foremost concerned with exploring and studying the effects of mixture upon identity and culture. Accordingly, the majority of publications takes a critical stance by focusing on the post-colonial context, i.e. the “patterns of domination

and resistance" (Orlove 2007:631) and the "relations of inequality and homogenization" (Brettell and Nibbs 2009:680) in the colonies and, soon afterwards, independent nations. The focus was set on the strategies that subaltern peoples recurred to in order to "subvert[..] the endeavors of dominant groups to establish firm identities and hierarchies, usually centered on race" (Orlove 2007:631).

In the same vein, Lowe understands hybridity as "the formation of cultural objects and practices that are produced by the histories of uneven and unsynthetic power relations" (1996:67). Against this backdrop and drawing on post-structuralist theory, the studies on hybridity of the 2nd stage studied and acknowledged numerous types of cultural performance that undermined "hegemonic systems of categorization" (Orlove 2007:631). Such research was directed at questioning not only the political systems eager to secure the boundaries between populations and cultures, but also academia with its long history of devaluing hybrid social categories and cultures as inauthentic. As Orlove succinctly summarizes it, "[the] single greatest act [of the debate on hybridity] was to evoke and celebrate the previously devalued and marginalized figure of the hybrid" (2007:631).

Summarizing, the theorists of the 2nd stage draw the attention to the productivity of cultural performance for scrutinizing the mixing of categories and, thereby, to hybridization in action, all the while taking into account power structures and relations. Aware of the basic difficulty to maintain boundaries between categories and displaying an intimate understanding of the political importance of boundaries, researchers of the 2nd stage recurred to hybridity as a means to work against the traditional (imperialist) academia that insists on culture flowing in one single direction, thereby devaluing other cultures on principle.

3rd stage: Contemporary approaches

The third perspective on 'hybridity'[231] – especially prominent among scholars working on topics such as globalization, diaspora, migration and transnationalism – displays two distinct characteristics. *First*, the debate on 'hybridity' itself is significantly broadened in terms of the topics discussed and *second*, the concrete implementation of hybridity is critically reflected, i.e. the link between ideology and action.

With respect to specifying and broadening the debate, more recent studies do not limit themselves to the traditional racial and ethnic categories of colonial and postcolonial rule. Orlove (2007) underlines that the main aim of 3rd stage research on hybridity no

[231] Most scholars identify only two main phases in the debate on hybridity, usually summarizing the here-described 2nd and 3rd stage into a single one. The perspective by Orlove (2007), however, stands out as an exception in that it opts for a tripartite classification.

longer consists in challenging present dominant hierarchies and power structures. According to him, it rather aims at exploring a variety of diverse forms of hybridity under a broader notion, including considering categories other than racial and ethnic ones (e.g. biological categories of humans and animals[232]). In addition, he outlines, 3rd stage research on 'hybridity' strives for expanding the field by taking into consideration new topical sections such as law and science. This includes e.g. studies on 'hard' and 'soft' law (Trubek, Cottrell, and Nance 2005), on the hybridity of law and new governance (De Búrca and Scott 2006) or on intersectional discrimination against the backdrop of hybridity (Grabham 2006)j; for the realm of science, a focus is set on phenomena of hybridity in the context of science education (cf. e.g. Brown and Spang (2008); Hanrahan (2006); Taylor (2006)).

In addition to broadening the debate thematically, more recent studies display a different approach to time, namely an explicit emphasis on the future. According to Orlove, studies of the preceding 2nd stage are likely to concentrate on the present, either exclusively or by juxtaposing it with precolonial or early colonial times. Consequently, potential future developments such as e.g. a destabilization of existing ruling systems are only marginally analyzed. In contrast, research from the 3rd stage is clearly set on the future and closely observes and depicts the tensions between differing conceptions of it, revealing "the multiple and uncertain possibilities of the future" (Orlove 2007:631). Thus, the debate on hybridity evolved from a mostly backward-oriented study of colonial times and relations into a debate characterized by its explicit orientation towards the future or, in Drichel's words, towards a "radical futurity" (2008:608). Next to the strong analytical focus on the future, the overall perspective of the most recent research on hybridity is generally significantly less celebratory and self-convinced than earlier approaches.

As sketched earlier, another difference to earlier approaches consists in how ideology and action are linked. Orlove describes how earlier research postulated a direct relation between the ideologies bolstering colonial domination and the agency of resistance in the form of hybrid cultural productions and performances. In contrast, he argues, newer research on hybridity acknowledges the "presence of multiple ideologies, multiple forms of agency, and more complex relations between them" (Orlove 2007:632). As such, this change in focus is not singular, but can be observed in anthropology as much as in other disciplines where the debate moves away from the simple dichotomy

[232] For a consideration of human-ape hybrids or chimeras and a discussion of the challenges linked to upholding the boundary between humans and animals cf. the study by Alter (2007).

between domination and resistance to rather explore the “forms of action within social hierarchies” (Orlove 2007:632).

6.3.6.2 Summary of the dimensions of ‘locality’ informed

Notwithstanding the scholarly criticism against underlying ideas of purity, there is a wide agreement on the substantial influence of hybridity and its central notion of ‘in-betweenness’. Reviewing the theoretical contributions to hybridity with regard to the locality dimensions from chapter 4.4.2 reveals that the concept in fact contributes to informing two out of the five dimensions, namely the (10) actor dimension of locality and the (12) influx/response dimension of locality (cf. illustration 38 for an overview).

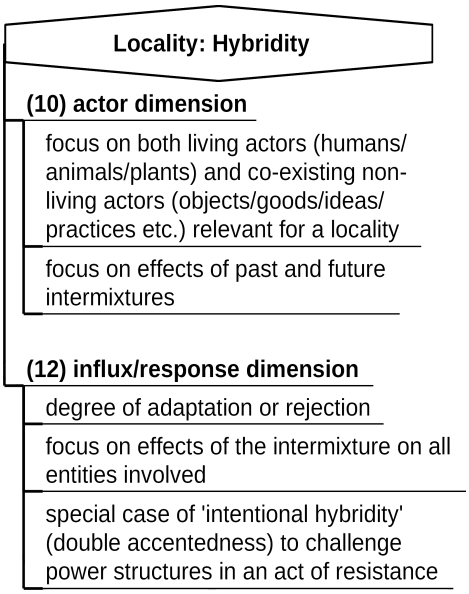

Illustration 38: Dimensions of locality informed by hybridity

First, ‘hybridity’ sheds light on and, thus, informs the (10) actor dimension of locality; this includes the actors (e.g. humans/animals/plants) living in and shaping a given locality as much as the co-existing non-living actors (e.g. objects/goods/ ideas/practices) that also affect the overall constellation in a given place. Dealing on a basic level with processes of cultural contact, fusion, intrusion and disjunction – namely with the dissolution of definite and rigid cultural boundaries between individuals and/or groups and with the actual intermixture of diverse identities – the concept of hybridity as applied in this research draws the attention to the actors of a given locality. It investigates to what extent they result from an intermixture of local and, initially, non-local influences (be they of colonial origin or not). Inspired by more recent research on hybridity, this also entails deliberations on all kinds and types of intermixtures (e.g. racial, ethnic, religious, biological etc.). As a matter of fact, ‘hybridity’ is often utilized to underline that ‘something hybrid’ is recognized as challenging essentializations, i.e. as calling into question essentialist perceptions of complex notions such as culture, race, nation and identity[233], not seldom in an unexpected way. In addition, research on hybridity is not only interested in studying intermixture to understand past encounters between differing entities, but also strives to realize

[233] For the sake of conceptual clarity and delimitation, this research does not invest in detailing these complex and highly controversial notions (for a first approach cf. Appiah (1996)). Even more so than the notion of ‘knowledge’, the terms of ‘identity’ and ‘race’ are political constructs transporting normative assessments. This represents an additional reason for not elaborating on these terms, given that this research does not focus on studying issues of power and domination, but invests into identifying a conceptual-analytical approach to local knowledge.

change over time and anticipate potential effects of future intermixtures. Whereas the rejection of racial mixing among humans typical for the 1st stage of 'hybridity' research is as factually untenable as morally repugnant, the aspect of double-accentedness in the creation of hybrid forms as discussed during the 2nd stage of 'hybridity' merits attention. It denotes the potential of hybrid forms containing two styles, belief systems or social languages as an expression of resistance to power hierarchies and structures.

Second, the concept of hybridity also serves to informing the (12) influx/response dimension of locality. As state of intermixture, hybridity genuinely relies on at least two entities (living and/or non-living ones) being mixed, whereas the two entities have to differ qualitatively, which is easiest achieved if they originated in different locations. Once such hitherto alien influences arrive at a given location, intermixture takes its course. This in turn allows studying the influx itself and subsequent reactions by the local setting (namely the degrees of adaptation or rejection) as well as the more general effects of this intermixture upon identity and culture. In specific cases, the mixture of two entities, styles, belief systems or languages is intentionally used to challenge a dominant power entity in an act of resistance (cf. Bakhtin's so-called 'intentional hybridity'). Moreover, special consideration is given to studying the influences and effects of *all* entities involved in the intermixture to ensure that hybridization is not conceptualized as a one-way process hiding specific racial, ethnic or otherwise coined preferences.

6.4 Summary of the multi-disciplinary foundations of 'locality'

Recapping the theoretical approaches discussed in chapters 6.3.1–6.3.6 shows that in its current understanding, 'locality' and other spatial notions have evolved into complex and polyphonic concepts. Over the last decades, the global interdependency has significantly increased and rendered many static notions and conceptions obsolete, including former spatial concepts. These proved to be too over-simplifying in their approach and unsuitable for adequately describing the complexity of spatial phenomena.

Nowadays, spatial notions are seen as amounting to relational and/or contextual categories, in addition to being spatially defined through their characteristic physical properties. Thus, locality is understood as a form of ongoing complex social configuration characterized by the permanent negotiation and (re-)construction of space. Against the backdrop of such a broad perspective on 'locality', the literature analysis of the theoretical contributions in chapters 6.3.1–6.3.6 provided ample substantiation for the five concepts of locality, as displayed in illustration 39:

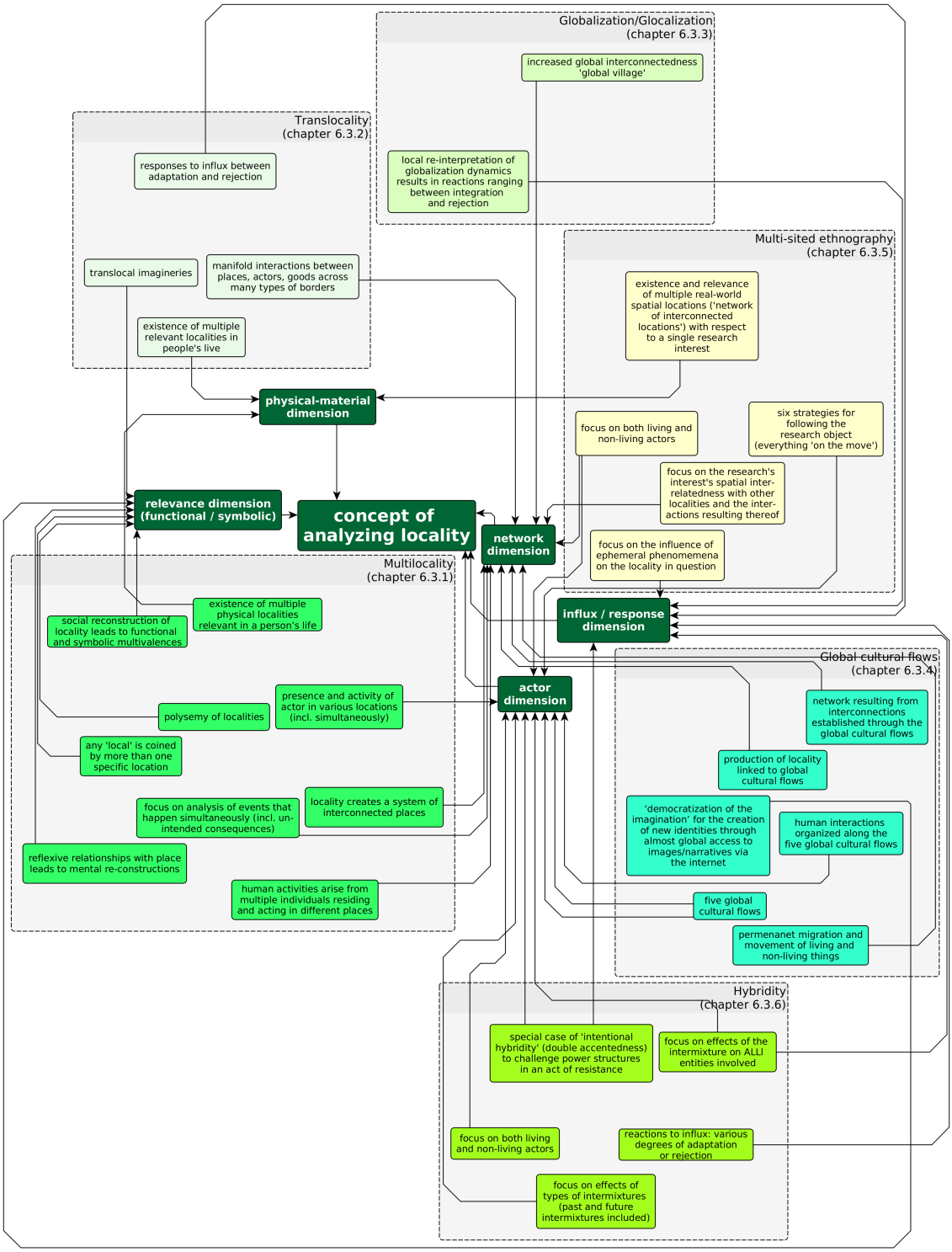

Illustration 39: Multidisciplinary foundations for locality (overview)

Against the backdrop of this overview, I proceed to summarizing the main insights from the literature discussed earlier. In addition, I outline how these selected theoretical contributions contribute to grounding and informing the five dimensions of locality. In this vein, the following paragraphs relate the spatial insights from the theoretical contribu-

tions in chapters 6.3.1–6.3.6 to the five basic dimensions of locality as suggested in chapter 4.4.2; an overview on the topical insights is provided in illustration 40.

Analyzing the characteristic elements of **'multilocality'** (chapter 6.3.1) against the backdrop of the locality dimensions outlined led to informing four of the five dimensions. *First*, 'multilocality' acknowledges the very existence of a set of relevant physical locations where people reside and live their daily lifes, thereby informing the (9) physical-material dimension of locality. *Second*, multilocality contributes to informing the (10) actor dimension of locality in emphasizing that a person can be present and active in more than one place, even at the same time. *Third*, 'multilocality' contributes to elucidating the (11) network dimension of locality by allowing for comparative or contingent analyses of a system of interconnected places arrive at an understanding of what happens different places simultaneously and how these events relate to and influence each other, taking into account both intended and unintended consequences of this network of actions and places. *Forth*, 'multilocality' also details the (13) relevance dimension of locality by emphasizing the multivalency of localities: Places are generally seen as having the potential to embody at the same time multiple functions and symbolic attributions and to carry polysemous meanings for different actors. In this research project, reflexive relationships with places leading to mental re-constructions of unattainable places from the past in new physical environments for the sake of establishing meaning and belonging are seen as a special case of this relevance dimension of locality.

As far as **'translocality'** (chapter 6.3.2) is concerned, a recapitulation of the insights gained showed that the concept serves to inform four of the five locality dimensions from chapter 4.4.2. *First*, in parallel to 'multilocality', 'translocality' contributes to informing the (9) physical-material dimension of locality by emphasizing that people have a strong tendency of living their life in more than one physical place. The concept advocates that such connections between the multiple localities relevant in a person's life rest on a multitude of everyday practices and decisions of countless actors. In addition, special attention is paid to the situatedness of (primarily) people while traveling between the diverse localities. *Second*, 'translocality' elucidates the (11) network dimension of locality, i.e. the multifarious interactions between places, actors and objects/ ideas across various forms of borders (national and other ones). In this process, the global and local are not seen as isolated, but as interpenetrating forces, resulting in them being simultaneously co-situated. *Third*, 'translocality' also informs the (12) influx/response dimension of locality. In this case, the interaction involves any given influx entering a specific locality and the locally specific response to said influx. In gen-

eral, this interaction can have two results: Either the influx is locally adapted and reconstructed, resulting in an increased overall interconnectedness, or it is rejected, leading to disparity and increased fragmentation. *Fourth,* the concept also contributes to informing the (13) relevance dimension of locality by means of so-called 'translocal imaginaries' that represent mental constructions, especially frequent among people who are far from home as e.g. in the case of migrants or refugees. Instead of a physical displacement, these constructions rely solely on the subjective dimension of one's imagination and serve a functional-symbolic purpose.

With respect to the twin concept of **'globalization/glocalization'** (chapter 6.3.3), the literature analysis showed that it contributes to informing two of the five locality dimensions, namely the (11) network dimension and the (12) influx/response dimension of locality. *First*, 'globalization/glocalization' emphasizes the (11) network dimension of locality by exploring the decidedly increased interconnectedness of today's world as condensed in the notion of 'the world as global village'. Despite certain particularizing and localizing tendencies, one can observe an overall shift from a nation-state oriented and territorialized understanding of space to a more interconnected, fluid and globally oriented one. This shift leads to a significantly higher degree of overall interrelatedness, connection and, consequently, interdependence. *Second*, and related to (11), the twin concept also elucidates the (12) influx/response dimension of locality. Whereas global interconnectedness certainly increased, globalization is by no means a uniform process given that it has to build upon local re-interpretation: The specific local responses to the influx can highly differ depending on the particular local context, leading to countless context-dependent outcomes. Where globalizing influences are willingly taken up and adapted, spatially segregated spaces with little exchange with the surrounding world begin to weaken or disappear altogether, along with the characteristic links of humans to national frontiers, towns, villages; as a result, social relationships are also decreasingly bound by spatial location. In contrast, globalizing influx can also be rejected, leading to an intensification of local culture and the local in general, culminating in a new cultural self-confidence and self-determination (so-called 'new localism').

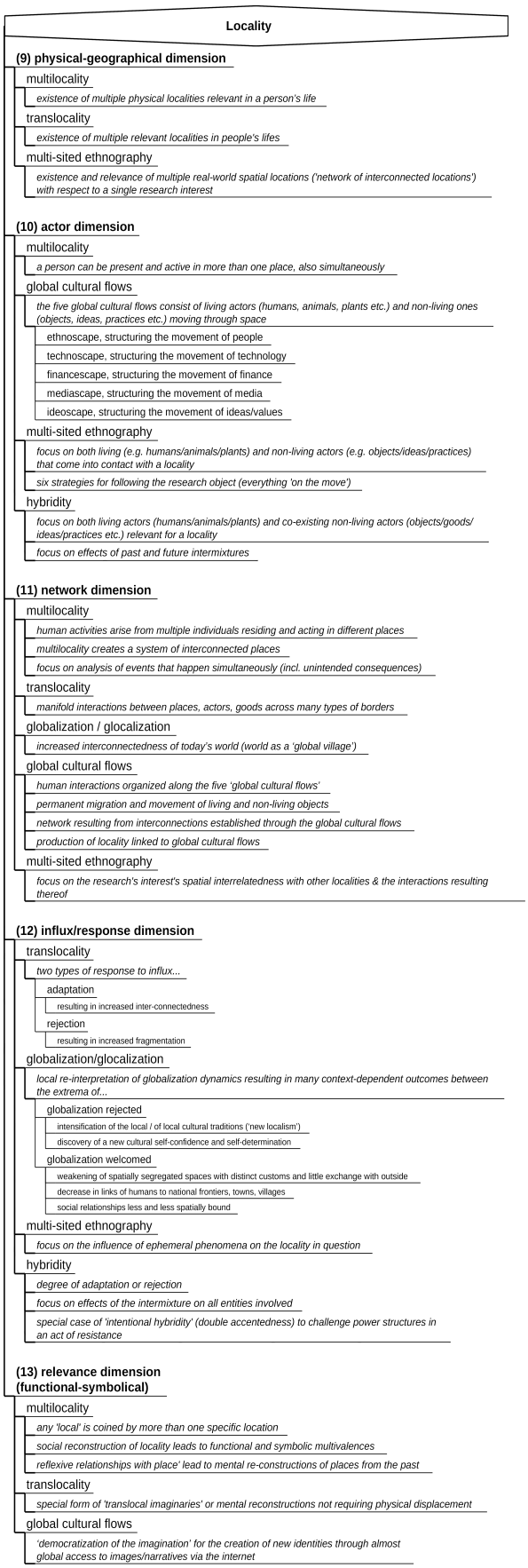

Illustration 40: Summary of all dimensions of 'locality' informed by the literature

Analyzing the characteristic elements of Appadurai's **'global cultural flows and the production of locality'** (chapter 6.3.4) against the backdrop of the locality dimensions led to the insight that the theory contributes to informing three dimensions. *First*, it grounds and informs the (10) actor dimension of locality by positing that the production of locality is inseparably linked to five so-called 'global cultural flows' (in my terminology understood as 'actors') that create their own kind of 'space'.

These so-called '-scapes' are highly diverse and include living actors (humans, animals, plants etc.) and non-living ones (objects, ideas, practices etc.) moving through space. There are five such spaces, namely (a) ethno-, (b) techno-, (c) finance-, (d) media- and (e) ideoscape that structure the movement of people, technology, money, media and values/ideas respectively. These '-scapes' represent what Appadurai calls the 'building blocks of […] imagined worlds' of past and present generations and are deeply perspectival constructs, shaped through context and individual imagination. In contrast to earlier conceptions that deemed locality to be a spatial or scalar category, Appadurai considers locality to be a genuinely relational and contextual one. *Second*, the approach also informs the (11)

network dimension of locality. In Appadurai's understanding, human interactions are highly entangled, given that they are organized along the five -scapes. Consequently, special attention is paid to the network and the interlinkage ensuing from the alternative spatial rendering, i.e. from the interconnections established through the five flows. In this respect, it is irrelevant whether the migrating elements are living entities (humans/ animals/plants etc.) or non-living ones (objects/ideas/practices etc.). *Third*, the theory also contributes to informing the (13) relevance dimension of locality whereby what Appadurai calls 'democratization of the imagination' is decisive in combining both functional and symbolic aspects. According to him, this democratization of the imagination comes happens once people all over the world have access to images and narratives via the internet on an (almost) global scale. The exposition to the continuous global media stream resulting thereof entailed and still entails a certain mental individuation in many individuals in that imagination is not longer considered an artistic or intellectual undertaking reserved for the upper classes, but is now understood as a (potentially) daily activity open to everybody wishing to engage in it.

Analyzing **'multi-sited ethnography'** (chapter 6.3.5) against the backdrop of the locality dimensions from chapter 4.4.2 reveals that it contributes to informing four of the five locality dimensions. *First*, 'multi-sited ethnography' elucidates the (9) physical-material dimension of locality by recognizing that multiple real-word spatial locations might exist with respect to a single research interest. It advocates that the research interest – regardless of whether it involves a living or non-living entity – is by no means static, but more often than not on the move. Consequently, it requires to be followed through space for proper exploration, which also includes taking notice of the (potentially) multiple locations that might be involved.[234] *Second*, the theory also grounds and informs the (10) actor dimension of locality, namely by taking notice of all the actors present in a given location or moving through it and by paying attention to how they influence the locality and/or are being influenced by it. The category of actors includes living actors (humans/animals/plants etc.) as well as non-living ones (objects/ideas/practices etc.). The latter also comprises all the so-called 'leads' Marcus considers worth following (next to following humans), namely things (goods/gifts/money), metaphors, plot/ stories/allegories, lifes/biographies and, eventually, conflicts. *Third*, 'multi-sited ethnography' also informs the (11) network dimension of locality. In view of the central role of movement through space, special attention is paid to understanding how the different

[234] This new perspective on the research topic itself has potentially far-reaching consequences for the academic disciplines concerned: Under the conditions of modernization and globalization, conventional ethnography entailing a long stay in a confined site is no longer considered representing necessarily the adequate instrument for exploring contemporary life, experiences and mindsets. (Nieswand 2009)

geographical locations relevant for a specific research interest are interrelated and interact. The very act of 'following the research interest' furnishes one with an understanding of the spatial interrelatedness of relevant locations relevant and the various degrees of interconnectedness between these locations. Such an approach is also helpful when analyzing the power structures that unfold on this spatial background. *Forth*, Marcus' approach also elucidates the (12) influx/response dimension of locality through its explicit emphasis on the act of following the research. Marcus underlines the importance of paying close attention to the overall impact the research object has in its movement through space (=influx) and to the various reactions to its presence in a given locality (=response).

Analyzing the insights on **'hybridity'** gained in chapter 6.3.6 against the backdrop of the five locality dimensions demonstrates that two dimensions are informed, namely (10) the actor dimension and (12) the influx/response dimension of locality. *First*, by concentrating on the various actors in a given place and their respective degrees of purity or mixture and 'in-betweenness', 'hybridity' contributes to informing the (10) actor dimension of locality. Recapitulating all three stages of the hybridity debate shows that the category of actors is a broad one in that it includes living entities such as people, animals or plants as much as non-living entities such as objects, goods, ideas, stories and practices. Correspondingly, the potential types of intermixtures between these multifarious actors is equally diverse and covers next to the racial mixing among humans all kinds of ethnic, religious, biologistic etc. intermixtures. Their common feature consists in challenging essentialist conceptions of complex ideas such as race, nation, identity, culture etc. and in advocating for acknowledging the lot of possible outcomes from any kind of intermixture, next to studying them prospectively in terms of their future potentials instead of focusing on 'coming to terms with the past'. *Second*, 'hybridity' also contributes to informing the (12) influx/response dimension of locality by emphasizing the broad array of potential reactions (=responses) to a given actor (=influx) entering a locality. The responses by the local setting can be manifold and result in varying degrees of integration/adaptation or rejection whereby all the entities involved in a given locality need to be taken note of to make sure that certain entities are not prioritized over others. On a more general level, such intermixtures have their own effects upon culture and identity that are worth studying. In specific cases, intermixture/hybridity is intentionally sought after and created to question and test dominant power structures and/or hegemonic systems of categorization in an act of resistance through the very combination of two styles, belief systems or social languages.

7 Developing the framework for ‘understanding local knowledge’

Don’t mistake your own lack of imagination for
deficiencies in other people’s worldviews
Juan Pablo Sarmiento Barletti (2013)

Drawing on the results of the extensive literature reviews on knowledge (cf. chapter 5) and on locality (cf. chapter 6), chapter 7 focuses on elaborating the actual framework for understanding local knowledge. This takes place in four subsequent steps that build on each other: Chapter 7.1 starts by describing the framework specifics, i.e. its purpose, characteristics and the concept-based method applied for developing the framework itself. The following chapters 7.2–7.4 concentrate on developing the conceptional structure constituting the framework, i.e. twelve concepts of knowledge (chapter 7.2), five concepts of locality (chapter 7.3) and, lastly, three concepts of reflexive understanding (chapter 7.4). The concluding chapter 7.5 integrates these three conceptional parts elaborated in chapters 7.2–7.4 into the framework for understanding local knowledge.

7.1 Framework specifics

For the theoretical insights from the literature analyses in chapters 5 and 6 to be productive with respect to developing a framework for understanding local knowledge, they need to be arranged and set into relation to each other in a transparent and systematic way. Chapter 7.1 describes how I intend to tackle this task. More specifically, chapter 7.1.1 outlines the framework’s purpose along with a number of functions I expect the framework to fulfill. Chapter 7.1.2 describes the basic characteristics of the framework type applied in this research, i.e. the *conceptual-analytical framework* according to Jabareen (2009), Dowding (2001) and Stanley (2012). This includes the understanding of the structure and functions of *concepts* as understood by Deleuze et al. (1994), given that they represent the fundamental building blocks of the framework. Chapter 7.1.3 prepares the ground for the following chapters 7.2–7.4 by detailing the methodology applied in construing the framework and elaborating these concepts – from identifying to describing and relating the concepts to each other in the overall framework for ‘understanding local knowledge’.

7.1.1 Purpose of the framework

Against the backdrop of traditional approaches to local knowledge focusing primarily on measurable, tangible facts related to ecological issues (cf. chapter 2.4), the framework to be elaborated here is expected to fulfill a complementing role. More specifically, I see three specific functions that I briefly describe in the following.

First, I expect the framework to potentially accommodate any form of local knowledge. In view of this, I consider it crucial to conceptualize the heuristic in as broad a manner as possible. This automatically entails conceptualizing the two formative notions 'locality' and 'knowledge' in equally broad terms. While both terms are discussed in great detail in various academic disciplines, it might not surprise that the inter-disciplinary exchange on the topics is relatively modest, at least among disciplines with no priorly established form of cooperation[235] or with a record of going to some length to distinguish themselves from one another in the past, not at least to justify their respective existence[236].

The historically grown academic landscape and the related power dynamics lead to the situation that insights gained in specific disciplines run the risk of being overlooked by other domains of academia. Hence, this framework aims to bring together and integrate the troves of insights from the various disciplines and schools of thought that individually deal with the concepts of 'knowledge' and 'locality'. This way, I expect to arrive at the comprehensive perspective on 'local knowledge' I strive for. More specifically, I envision the heuristic to go beyond existing approaches in that it not only covers rather evident characteristics of 'knowledge' such as the actual knowledge content and related procedures or, for 'locality', the physical-material characteristics of the geographical location in question. Rather, I expect the framework to allow for a more complex and comprehensive characterization. Applying a broad understanding of knowledge differentiates the framework from other approaches in terms of the number of topical areas and interconnections included. This in turn facilitates capturing the multidimensional character of the knowledge phenomenon as embedded in a specific local reality frame in as broad a sense as possible.

Second and related to the heuristic's inner methodological workings, it shall provide and allow for a conceptual-analytical approach to local knowledge. This implies a cate-

[235] Generally, habitual cooperation among different disciplines seems to be best established in the natural sciences.

[236] An example for this constellation relevant for this research is the relationship between sociology and anthropology and their handling of the topic of knowledge forms that distinguish themselves from scientific knowledge: Though local knowledge forms are a relevant societal factor in industrialized countries too, sociology focuses almost exclusively on scientific knowledge in the context of science and technology studies, leaving the study of local knowledge forms largely to anthropology.

gorial and generic understanding of local knowledge forms and goes beyond a purely descriptive, itemizing and enumerative approach. The reason therefore is that I see substantial potential in a more structured, systematic and encompassing approach for advancing the debate on 'local knowledge'. On the one hand, it can serve to distinguish the heuristic from other local knowledge conceptualizations by facilitating a more nuanced and complete understanding of a given local knowledge form. On the other hand, the theoretical, structured and systematic character of the framework also bears the potential to increase overall comprehensibility of and accessibility to the topic across disciplines and establish a reliable basis for comparative studies on local knowledge issues.

This, in turn, leads to the *third,* rather long-term purpose: The framework is meant to provide a structured, solid and theoretically sound basis upon which practical applications and instruments for investigating and understanding specific local knowledge forms can be developed in the wake of this project.[237]

7.1.2 Theoretical characteristics of the framework

The framework to be developed in chapters 7.2–7.4 is conceptual-analytical in that it combines characteristics attributed to both conceptual and analytical frameworks. Following Jabareen's (2009) notion of conceptual frameworks, the framework elaborated here is conceptual in a number of ways: (1) It results from "qualitative processes of theorization" (Jabareen 2009:50) that (2) establish "a network, or 'a plane', of interlinked concepts that together provide a comprehensive understanding of a phenomenon" (Jabareen 2009:51). Furthermore, this network of interlinked concepts (3) displays "key factors, constructs or variables, and presumes relationships among them" (Miles and Huberman 1994:440), as the concepts forming the framework support one another and build on each other. Another characteristic of conceptual frameworks consists in what Jabareen calls (4) the inherent "ontological, epistemological and methodological assumptions" (2009:51). According to Guba and Lincoln (1994:108), the ontological assumptions "relate to knowledge of the 'way things are', 'the nature of reality' […]", while the epistemological assumptions "relate to [...] 'how things really work'", always in what Jabareen denotes as "an assumed reality" (2009:51). Methodological assumptions, the last of the triplet of assumptions, detail the process of developing the conceptual framework and of determining what "it can tell us about the 'real' world'" (Jabareen 2009:51). Lastly, a conceptual framework (5) does not strive for "knowledge of so-called hard

[237] The adaptation of the theoretical framework into a practical tool applicable in concrete field situations goes beyond the scope of this project, given its theoretical orientation, and therefore represents a separate undertaking.

facts" (Levering 2002:6), but intends to provide "soft interpretations of intentions" (2002:6), resulting in (6) a conceptual understanding rather than precise predictions (2002:6). As such, conceptual frameworks do not aim at furnishing a causal chain or a causal setting, but provide an "interpretative approach to social reality" (Jabareen 2009:51).

Complementing these conceptual characteristics, the framework also features certain features typical for an *analytical framework*. In this respect, I follow the theoretical explanations by Dowding (2001) and Stanley (2012). According to them, analytical framework are on the one hand meant to be applicable to a broad variety of contexts through the processes of simplification and typification that are said to represent characteristic procedural traits of such frameworks (Dowding 2001:10). On the other hand, frameworks of this type aim at generating what Stanley calls "an underpinning prism for the construction of explanations" (2012:474). In his view – and very fittingly for the purpose of this project – the goal of such frameworks does not consist in providing an exact representation of reality, but rather in providing support for "categoris[ing] and reduc[ing] its inherent complexity" (2012:476).

In terms of the internal structure, frameworks of this conceptual-analytical type consist of *interlinked concepts* as central constituents. These concepts build on each other, thereby constituting a framework for explaining the phenomenon in question in its diverse dimensions. With respect to theoretically capturing the idea of concepts as such, I follow Deleuze et al. (1994), while slightly adapting their approach for the context at hand, as described below.

In their understanding, concepts are seen as incorporating the following three properties[238]: (1) They are made of several components – later referred to as *'elements'* – and are in content specified and defined by those. (2) Concepts are *linked to problems or issues*[239] that are significant to and characteristic for the overall phenomenon the framework addresses. In fact, concepts result from these problems or issues as their role consists in contributing to providing solutions and explanations to the questions arising from these problems/issues. (3) Concepts are interlinked and therefore relate to other concepts, within and outside the framework. By building on each other, they take

[238] These properties are also reflected in the three-step method applied for the description of concepts in chapters 7.2–7.4 and described in detail in the following chapter 7.1.3.

[239] Deleuze et al. (1994) propose to use for this purpose the expression 'problem addressed'. For the sake of this project, I complement the expression to the more allowing and neutral notion of *'problem/issue addressed'* in order to make room for research questions that do not address actual problematic situations or phenomena in need of concrete solutions, but focus on gaining as broad as possible an understanding of the relevant characteristics of a given local knowledge form.

up and imply issues formulated in related concepts, establishing a network of interconnected meaning.

Importantly, the relations among the concepts do not illustrate temporal sequences in the sense that the concepts are set in any chronological succession or other sequence. Rather, these relations represent *conceptual dependencies* outlining what concept stands on what concept's shoulders in terms of their thematic interconnectedness and dependence. To illustrate this with an example: A hypothetical concept B building on a hypothetical concept A does not depend on any output from concept A that is taken up and further processed. Rather, concept B builds on the terms and understandings that characterize concept A and integrates these in the sense that they form part of the presupposed basis of concept B without, however, being made explicit a second time. Importantly, 'building' in this sense implies that the elements characterizing one concept *occur only once* and are not repeated in other concepts. Thus, to understand a concept, it is indispensable to study the underlying concepts that inform it. Thus, this method centers on the one hand on the framework's inner logic striving to capture the phenomenon in question and on the other hand on the interrelations between the concepts. This interrelatedness extends to concepts already developed within the framework and to theoretical conceptual input from outside the framework.

A concluding distinction needs to be made: Conceptual-analytical frameworks reveal the ideas a given concept consists of and builds on. They, however, must not be equaled to conceptual models, as Dowding (2001:91) emphasizes. The latter strive for simplified representations of phenomena of the real world and use for this purpose variables or take measurements to later determine the model’s accuracy. In the case of conceptual-analytical frameworks, no such approximate quantifications and measurements are made (cf. Jabareen (2009:51)). On the contrary, they rather aim at expounding a specific understanding of a given phenomenon in detail.

7.1.3 Method for developing the concepts constituting the framework

The framework for understanding local knowledge results, as described earlier, from an integration of three specific conceptual components, namely the eight concepts of ‘analyzing knowledge’ (chapter 7.2), the five concepts of ‘analyzing locality’ (chapter 7.3) and the three concepts of ‘reflexive understanding’ (chapter 7.4). As explained in the methodological comments (cf. chapter 1.3.2), these components have differing roles: ‘Knowledge’ is attributed a key position while ’locality’ serves as modifier for ‘knowledge’ and ‘understanding’ has the auxiliary function of supporting the framework user in

realizing and reflecting upon his/her own basic assumptions and biases and their influence on research process and outcome. The following illustration 41 depicts this basic structure.

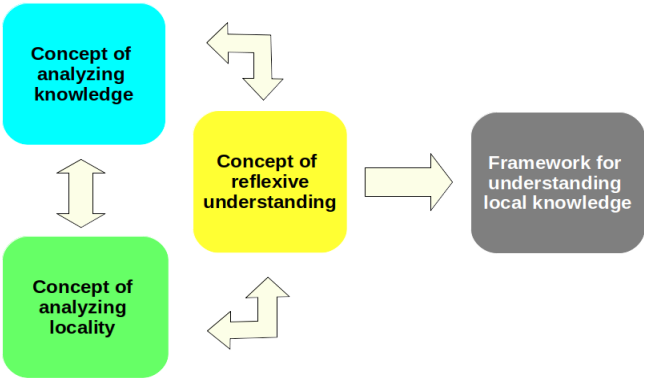

Illustration 41: Framework components

Correspondingly, chapter 7.2 invests into translating and, where necessary, complementing the insights gained in the course of the literature analysis on 'knowledge' (cf. chapter 5) into corresponding concepts of 'analyzing knowledge'. In the same vein, chapter 7.3 elaborates the concepts of 'analyzing' locality, based on the insights from the literature analysis on 'locality' (cf. chapter 6). To conclude the triplet, chapter 7.4 translates the insights on 'understanding' gained from the literature on 'knowledge ' (cf. chapter 1.3.2 for the rationale) into corresponding concepts of 'reflexive understanding' that aim at guiding the user in reflecting on the influence of his/her own mental biases and presuppositions on this research. Lastly, chapter 7.5 merges all concepts elaborated in chapters 7.2–7.4 into the 'concept for understanding local knowledge'.

Three-step method for elaborating concepts

The concepts of analyzing knowledge, of analyzing locality and of reflexive understanding are all generated according to the same three-step method that reflects the central tenets of Deleuze et al. (1994) as outlined in chapter 7.1.2.

The three-step method is organized as follows: *First,* the **problem or issue addressed** by the concept is outlined, along with the quasi-control question of what would be missing if this specific aspect expressed in the concept at hand did not enter the characterization of the overall topic.[240]

Second, the **elements** detailing and characterizing the respective concepts are described. On the overall, the majority of elements is grounded in the theoretical concepts discussed earlier in chapters 5 and 6 that stem from philosophy, sociology, anthropology and the various disciplines involved in studying spatial issues such as e.g. geography, area studies, anthropology, history or development studies.

[240] For questions of terminology cf. footnote 239.

However, to complement the notions in view of their specific contributions to the overarching composite concept of 'understanding local knowledge', it turned out to be productive and necessary to add a number of distinct elements such as e.g. the temporal dimension. Importantly, I would like to stress that the inspirations for these complementing elements did no stem from theoretical contributions, but go back to personal experiences I made when working in rural settings in developing countries with a collection of practice-oriented methods and related tool-boxes[241] designed to foster participatory development processes.[242]

The exact provenience of the elements – whether they are obtained from the theories discussed in chapters 5 and 6 or whether I added them for complimentary reasons – is specified in the respective paragraphs under the section 'elements'. In addition to this complementation, another sub-division turned out to be useful for the task at hand: In the case of two particularly complex concepts from the knowledge domain, namely the concept of the structural aspects of knowledge (chapter 7.2.3) and the concept of the social aspects of knowledge (chapter 7.2.4), I saw the need to subdivide these elements into facets to adequately outline the complexity of the issues.

Third, the **relations of the concept to other concepts** are illustrated. Generally speaking, there are two types of relations that I decided to name 'incoming relations' and 'outgoing relations' respectively. Under incoming relations I subsume those concepts whose function consists in informing and grounding the concept in question. Given that by doing so, these concepts become part of the overall framework following the logic of conceptual-analytical frameworks, they are also called *'adopted concepts'*. Adopted concepts come in two variations: Either the incoming relation is grounded on one of the theoretical inputs outlined in chapter 5 (on knowledge) or chapter 6 (on locality) – in these cases, the adopted concept is written in lower cases to indicate that it is grounded in a theory discussed earlier in this research. Alternatively, the incoming relation is founded and informed by an already elaborated concept from within the framework[243] – in these cases, the adopted concept is written in upper cases to mark that they do not base on an external theoretical input, but refer to a concept from within the

241 For development cooperation, this includes among others the following participatory approaches: Rapid Rural Appraisal (RRA), Participatory Rural Appraisal (PRA), Participatory Poverty Assessment (PPA), Participatory Action Research (PAR) and Appreciative Inquiry (AI) (for a detailed account cf. Duraiappah et al. (2005); Garg (1995)). For the context of sustainable development, it entails the Capability Approach (CA), the Sustainable Livelihoods Approach and Sustainability Assessments (SA), the latter with the many related tools including life-cycle assessment, ecosystem-services valuation, sustainable impact assessment, ecological foot-printing, benefit-cost analysis and present and future scenario tools (for a detailed account cf. Koroneus et al. (2013); Rennie (1996); Robèrt (2000)).

242 Such real-world situations have the invaluable benefit of giving instant feedback as to what kind of approaches are productive and appropriate when attempting to gain an understanding in and of an alien local context.

243 In fact, conceptual-analytical frameworks allow for priorly described concepts informing and grounding subsequent concepts.

framework. As far as the second type of relations, outgoing relations, is concerned, its function consists in building the groundwork and informing other concepts within the framework for understanding local knowledge. Correspondingly, these concepts are called *'informed concepts'* and are always written in upper case to underline that they do not directly link back to a theoretical input from chapters 5 or 6.

Summarizing, the description of each concept in the following chapters 7.2–7.4 includes three paragraphs: one paragraph on the problem/issue addressed, one paragraph on the elements constituting the concepts and a final one on the relations of the concept with other concepts in the framework, whereby I distinguish between 'incoming relations'/'adopted concepts' and 'outgoing relations'/'informed concepts'.

Exemplary illustration of a 'concept card'

Illustration 42 shows a graphical representation of such a concept in the form of a 'concept card'. There, the *elements* detailing the concept are listed in the rectangle while the *concepts' relations to other concepts* are summed up at the bottom and top of the rectangle. The latter two places denote the two types of relations, i.e. incoming and outgoing relations.

Incoming relations are so-called 'adopted concepts' that inform and ground the concept in question and are always listed at the bottom of the rectangle. In case they stem from the theory body outlined in chapters 5 and 6, they are written lower cases (e.g. multi-sited ethnography); in case they are priorly developed concepts of knowledge that feed the concept in question, they are written in upper cases (e.g. CONCEPT OF KNOWLEDGE SOURCES).

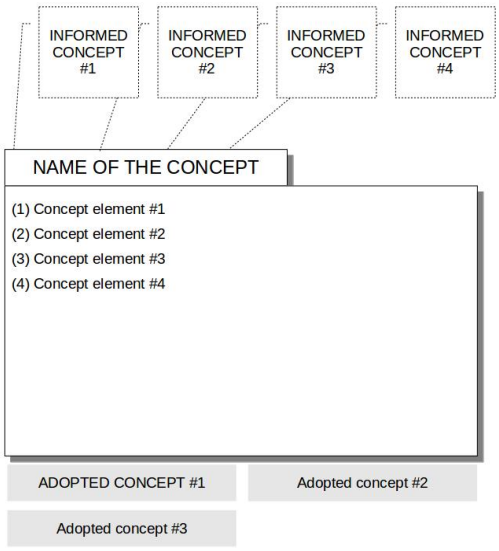

Illustration 42: Example card for concept characterization

Outgoing relations are concepts that are being informed by the concept in question and are called 'informed concepts'. For the sake of clarity, they are listed at the top of the rectangle. In contrast to incoming relations, the actual notation remains the same: They are consistently written in capital letters as they do not go back to an external theoretical input, but are developed as a result of this research (e.g. CONCEPT OF NETWORK DIMENSION OF LOCALITY).

7.2 Concept of analyzing knowledge

The extensive literature review on knowledge (cf. chapter 5) forms the basis for the construction and elaboration of the concept of analyzing knowledge in chapter 7.2. However, 'forming the basis' does not imply that all perspectives from philosophy, sociology and anthropology discussed are necessarily integrated nor does it entail that the concepts of knowledge are exclusively informed by these theories. Rather, the eventual set of twelve concepts of knowledge described in chapters 7.2.1–7.2.12 results from a combination of two approaches: While the concepts are in fact predominantly informed by the theoretical foundations from chapter 5 and relate to the eight dimensions of knowledge from chapter 4.4.1, I saw the need to complement them given the aim of arriving at a bird-view perspective on knowledge that is productive with respect to the overarching topic, namely 'local knowledge'.[244]

Before outlining this complementation in more detail, I briefly recapitulate the theoretical basis for 'knowledge', as elaborated in this project. In this vein, the following table 5 recapitulates the eight dimensions of knowledge together with their respective key questions (cf. chapter 4.4.1):

Dimensions of knowledge	**Key questions**
1. epistemic: content of knowledge	1. What is being known (knowledge content/items, facts of the world)?
2. procedural: processes and skills	2. What are the related skills, recipes and processes?
3. actor-related: knowledge holders	3. Who has the knowledge?
4. in terms of social issues: social organization of knowledge	4. How are access, generation and transmission of knowledge organized?
5. contextual: context of the life of the knowledge holders	5. What is the broader context (cultural, economic, political, environmental, religious etc.)?
6. ontological: sources of knowledge	6. Where does the knowledge originate from initially?
7. legitimational: legitimation of knowledge	7. Who or what justifies the validity of the knowledge?
8. representational: representation of knowledge	8. Through what material forms (media) is the knowledge presented?

Table 5: Relationship between the knowledge dimensions and the related key questions

In terms of the method followed in the elaboration of the concepts, most of these dimensions (1, 2, 3, 5, 6, 7, 8) have been taken up thematically without major modifications. Minor changes were made in two respects: *First* with regard to dimension 4 (dimension of the social organization of knowledge) which has been split into three con-

[244] Importantly, I do not aim at providing a comprehensive concept of knowledge in itself, but of knowledge with respect to local knowledge, the core topic of this research.

cepts given its depth and complexity and *second* in terms of introducing three additional, previously unmentioned concepts, namely the concept of the structural aspects of knowledge, the concept of the social aspects of knowledge and, lastly, the concept of accepted knowledge – all of which I consider to be crucial in complementing the picture. This results in a total of 12 chapters (7.2.1–7.2.12) that conceptually describe knowledge in a broad and inclusive way.

Broken down to the level of the chapter, the eight dimensions of knowledge have been transferred into 12 concepts of knowledge (cf. chapters 7.2.1–7.2.12) by means of the following conjunctions and, where necessary, modifications: Chapter 7.2.1 on knowledge content is inspired by the epistemic dimension and deals with issues related to the actual knowledge items. Similarly, chapter 7.2.2 on knowledge processes reflects the procedural dimension discussed in chapter 5 and focuses on skills and processes related to specific knowledge items. Chapter 7.2.3 on the structural aspects of knowledge and chapter 7.2.4 on the social aspects of knowledge do not refer to dimensions detailed earlier, but represent additional concepts that have been added to summarize a range of fundamental theoretical insights from the literature review that do not fit into the other concepts that proved to be topically more specific. Chapter 7.2.5 on knowledge legitimation takes up the insights from the legitimational dimension from chapter 5 and concentrates on the principles and processes that render knowledge valid in a specific social context. Chapter 7.2.6 on the knowledge sources is inspired by what has been earlier discussed as ontological dimension and focuses on the knowledge sources identified by the knowledge holders themselves. The following chapter 7.2.7 on accepted knowledge represents the third additional category. It is introduced to delineate on the framework level knowledge that is socially legitimized from heretic or 'new' knowledge that, at least so far, lacks the respective social legitimation. Chapter 7.2.8 on the knowledge holders is founded on the actor-related dimension from chapter 5 and centers on the knowledge holders themselves. Similarly, chapter 7.2.9 on the life-world context of the knowledge holders is inspired by the contextual dimension discussed in chapter 5 and deals with the manifold facets characterizing the knowledge holders' everyday lives. Finally, the concluding chapters 7.2.10, 7.2.11 and 7.2.12 on access to knowledge, generation of knowledge and transmission of knowledge elaborate on three different aspects of what has been detailed earlier in the context of the social organization of knowledge, with transmission of knowledge additionally building on the representational dimension of knowledge.

The following illustration depicts these concepts and their relations to each other, expressed by arrows (the relations are explained in more detail in the respective chapters):

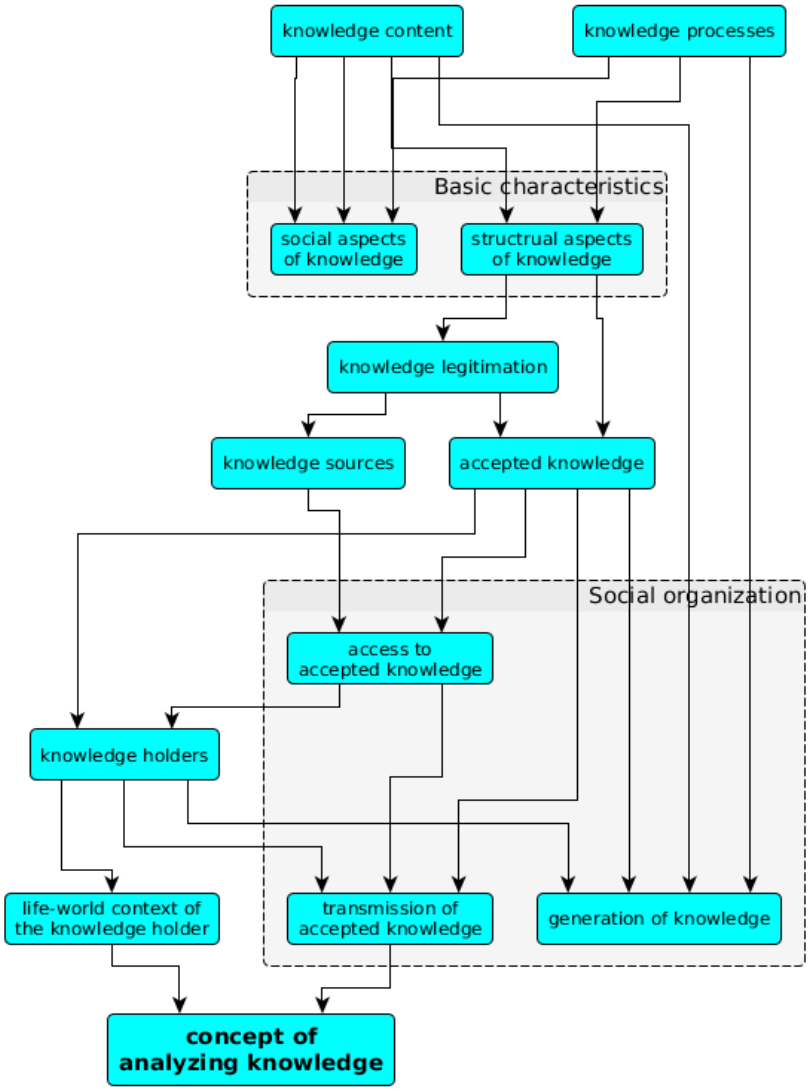

Illustration 43: The twelve concepts of knowledge and their interrelations

At the same time, this illustration sketches the sequence in which the concepts are outlined in the following chapters, which corresponds to their place in the overall framework (cf. illustration 43). Reading the illustration from top to bottom, it starts with the two fundamental concepts when analyzing any knowledge form – knowledge content and knowledge processes – and proceeds to the similarly basic concepts of the structural and the social aspects of knowledge respectively. The remaining seven concepts build on this basis as displayed in illustration 43 where their interrelations are mapped by means of arrows connecting the respective concepts.[245] These interrelations are explained in detail in the following chapters.

[245] In order not to overload illustration 43, it does not include the many contributions by philosophical, sociological and anthropological theories to the 12 concepts (cf. chapter 5). However, as the contributions by the different disciplines are crucial in grounding the concepts theoretically, they are made explicit as 'adopted concepts' and outlined in their functions in the descriptions of the respective concepts.

7.2.1 Knowledge content

The concept of knowledge content refers to what has been labeled as 'propositional dimension' in philosophy (cf. chapter 5.2.1.1) or as 'corpus of assertions and ideas' in Barth's anthropological perspective on knowledge (cf. chapter 5.4.1.2). Representing what is called 'propositional knowledge' or 'declarative knowledge' in epistemology, it covers the actual information basis of a given knowledge form. Being conscious knowledge mostly explicit enough to be verbalized, it represents the dimension of knowledge that is traditionally and commonly covered in great detail in many research studies.

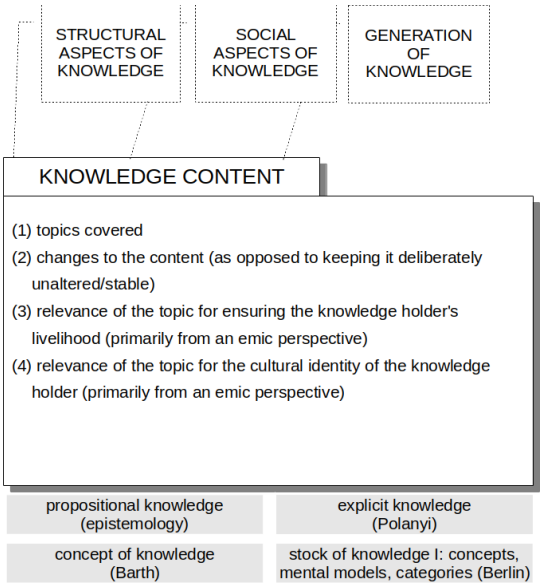

Illustration 44: Concept of knowledge content

Problem/Issue addressed: Knowledge content represents one of the two core aspects of knowledge, encompassing the very facts. If knowledge were devoid of content, it would lack in substance and could no longer be called knowledge as such.

Elements: The four elements comprised in the concept of knowledge content all address this factual dimension of knowledge with the aim to broadly capture the knowledge content. The first element is inspired by the epistemological debate on propositional knowledge, by Polanyi's contribution to explicit knowledge and by Berlin's 'stock of knowledge I'. It inquires what themes and topics are covered by the knowledge form in question.[246] The second element adds a temporal dimension to the epistemological discussion and to Polanyi's perspective, exploring the general mutability of the knowledge in question. It asks whether the content is by design meant to undergo changes and be modified if deemed appropriate or whether it is supposed to remain, to the greatest extent possible, stable and unaltered. The following two elements are influenced by Barth's anthropologically coined concept of knowledge and his suggestion that the aspect of the material circumstances should be included into the analysis of knowledge forms. In this vein, the third element examines the relevance of the knowledge content in terms of its potential contribution to covering subsistence needs. It addresses, in other words, whether the topics covered by said knowledge are to be con-

[246] This element refers to the type of information on which most conventional studies on local knowledge predominantly focus in their quest to collect knowledge items, next to assembling data on related knowledge processes, cf. chapter 7.2.2.

sidered indispensable for upholding livelihoods. Related to this, the forth element shifts the attention to another aspect crucial to local knowledge forms, i.e. the cultural dimension, and inquires whether the themes covered are relevant for the cultural identity of the knowledge holders and if so in what respects. The anthropologically coined approach to knowledge is also reflected in the perspective from which the third and forth element are studied: They both strive for as emic a perspective as possible; what matters for this purpose is the insider perspective while the etic one of observer or researcher comes second.

Relations: The position of the concept of knowledge content in the framework is basal and so are its relations to other concepts. In terms of the incoming relations ('adopted concepts'), it is informed by the concept of propositional knowledge (chapter 5.2.1.1), by Polanyi's idea of explicit knowledge (chapter 5.2.1.2) and, lastly, by Berlin's 'stock of knowledge I' (chapter 5.4.3.2/5.4.3.3). In addition, it draws on Barth's concept of knowledge outlined in chapter 5.4.1.2, more specifically on his deliberations regarding the content of knowledge. With respect to the outgoing relations ('informed concepts') and, thus, the contribution to the overall framework, the concept of knowledge content informs the basic characteristics of knowledge, namely the structural and social aspects of knowledge (chapters 7.2.3 and 7.2.4) as well as the concept of the generation of knowledge (chapter 7.2.11).

7.2.2 Knowledge processes

The concept of knowledge processes relates to what I referred to as 'procedural dimension' in chapter 5.2.1.2 on the philosophical foundations. It covers the procedural knowledge of how to perform or operate something and relates to skills, techniques and methods. In contrast to knowledge content, knowledge processes are often transmitted not with the aid of explanations and cognitive processing, but through direct observation and imitation. As a result, the very acquisition and structure of knowledge processes are often unconscious and therefore not considered in detail. They amount to what can be called 'body knowledge' or 'tacit knowledge'. As such, they are only hardly explicitly available to the subject (if at all)

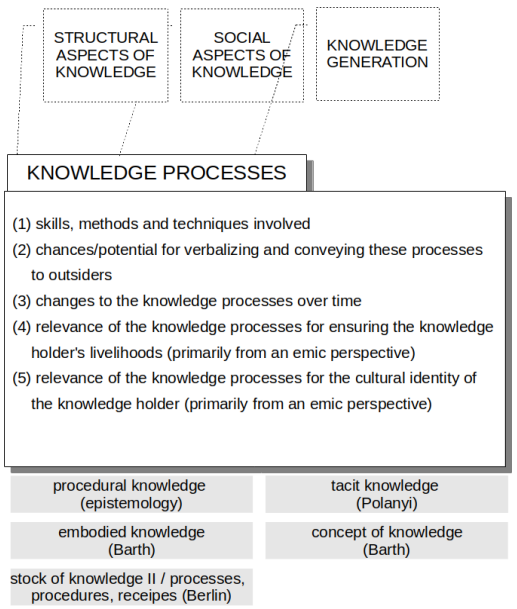

Illustration 45: Concept of knowledge processes

and, therefore, potentially difficult to put into words. Knowledge processes can be correlated and linked to knowledge content; in these cases, explicit and implicit knowledge aspects complement each other and can be thought of as two sides of a coin, covering the same issue from different perspectives.

***Problem/Issue addressed*:** Knowledge processes represent the second core aspect of knowledge, covering the skills, methods and techniques related to a given knowledge form. If knowledge were devoid of this procedural side, it would lack the practical, pragmatic and implementation-related character needed to render it into something one can apply and act on it in the world.

Elements: The elements contained in the concept of knowledge processes detail the procedural side of knowledge and are, given the intrinsic linkage between knowledge processes and knowledge content, similar to those specifying knowledge content in the preceding chapter 7.2.1, except for one additional element. Based on the literature consulted, describing knowledge processes comprehensively entails paying attention to five different elements. The first element draws on the epistemological debate on procedural knowledge, on Polanyi's ideas on tacit knowledge, Barth's approach to what he calls 'embodied skills' and Berlin's 'stock of knowledge II'. It focuses on analyzing what methods, techniques and skills are critical for a given knowledge form and are, potentially, linked to knowledge content that has been identified by means of the concept of knowledge content.[247] The second element zooms in on Barth's 'embodied skills' and on the tacit nature of knowledge processes detailed by Polanyi that render a verbalization, and therefore transmission, potentially challenging to impossible. Against this backdrop, it investigates whether and to what extent the skills and techniques identified can be verbalized and conveyed to outsiders. The third element adds temporality to the epistemological deliberations and to Polanyi's and Barth's perspectives on 'tacit knowledge' and 'embodied skills' alternatively. For this purpose, it addresses the issue of mutability and studies whether changes and modifications of processes are in principle considered appropriate or whether they should remain unaltered, to the greatest extent possible. In parallel to the description of the elements characterizing knowledge content in the preceding chapter 7.2.1, the following elements four and five are shaped by Barth's concept of knowledge in general and by his suggestion to paying close attention to material circumstances in concrete empirical cases. Moreover, elements four and five are influenced by the anthropologically inspired emphasis on the emic perspective, favoring the viewpoints and explanations of the knowledge holders over those

[247] More recent studies on local knowledge lay more emphasis on examining the aspect of knowledge processes when studying knowledge content.

of external observers or researchers. Against this backdrop, the forth element inquires the relevance of the knowledge processes in question for contributing to upholding livelihoods by covering (at least a part of the) subsistence needs of the knowledge holders. Supplementing this perspective, the fifth element introduces a cultural perspective and clarifies whether the knowledge processes identified earlier have any relevance for the cultural identity of the knowledge holder such as e.g. playing a role in ritual contexts.

Relations: The position of the concept of knowledge processes in the framework and its relations to other concepts in the overall framework are fundamental: Concerning the incoming relations ('adopted concepts'), the concept is informed by the concept of procedural knowledge stemming from epistemology (chapter 5.2.1.2), along with the idea of tacit knowledge suggested by Polanyi (chapter 5.2.1.2). In addition, it is founded on Barth's concept of knowledge and his notion of embodied skills (chapter 5.4.1.1), next to being informed by Berlin's 'stock of knowledge II' (chapter 5.4.3.2). In terms of the outgoing relations ('informed concepts'), the concept of knowledge processes informs, in parallel to the concept of knowledge content, the basic characteristics of knowledge, i.e. the structural aspects of knowledge (chapter 7.2.3) and the social aspects of knowledge (chapter 7.2.4), in addition to grounding the concept of the generation of knowledge (chapter 7.2.11).

7.2.3 Structural aspects of knowledge

The concept of the structural aspects of knowledge captures the structural organization of the phenomenon of knowledge in a comprehensive manner.[248] This includes the integration of a number of crucial characteristics of knowledge derived from the literature review in chapter 5.

More precisely, such a description of the structural aspects of knowledge covers three aspects: It extends (1) to the actual components constituting the knowledge form examined, (2) to the way the knowledge is stratified in layers and (3) to the distribution of knowledge within a social entity, indicating how evenly a given knowledge is spread within a social group.

[248] Procedural comment: This concept comprises characteristic elements representing independent categories that are not suited for integrating into concepts directly derived from the dimensions discussed in chapter 5 (for a detailed account of the relationship between concepts and dimensions refer to chapter7.1.2).

Problem/Issue addressed: The concept of the structural aspects of knowledge instructs the observer and/or researcher as to what constitutive aspects need to be taken into account in the analysis of a given knowledge form. Such an encompassing structural perspective counteracts the rather widespread approach to single out specific selected aspects and to deduce from them overall statements on the structural design of a given knowledge form.

Elements: The three elements of this concept outline these structural issues in more detail. 'Knowledge components', the first element, studies the basic constituents of a given knowledge form. 'Knowledge layers', the second element, explores the stratification of an individual's knowledge body with respect to whether the knowledge holder can consciously access it. Lastly, 'knowledge depth' specifies the distribution of knowledge within a group of people, i.e. the varying degrees of comprehensiveness in terms of what different knowledge holders know on a specific topic. In the following paragraphs, I describe these three elements and their various facets in more detail.

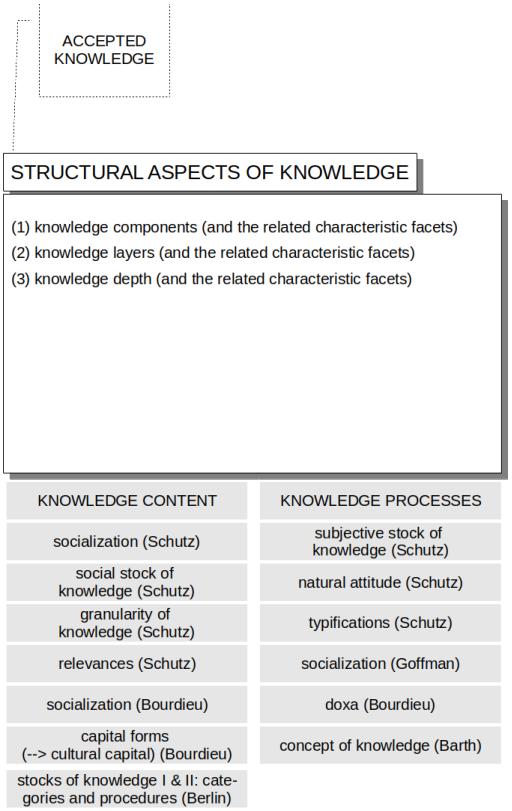

Illustration 46: Concept of the structural aspects of knowledge

First element: Knowledge components

In terms of its theoretical foundation, the first element draws on the distinction stemming from epistemology between propositional and procedural knowledge (chapter 5.2.1) and on Barth's broad and anthropologically inspired notion of knowledge that includes emotions as basic parts of knowledge (chapter 5.4.1.1). In addition, it is informed by Berlin's 'stocks of knowledge I and II' (chapter 5.4.3.2) that provide a perspective on concepts and categories as well as procedures and processes characteristic for a given social group (chapter 5.4.3.2). Thematically, the knowledge components encompass the following three facets: knowledge content, knowledge processes and emotions related to knowledge content and/or processes. The first two facets (knowledge content and knowledge processes) represent concepts that have already been detailed in the preceding chapters 7.2.1 and 7.2.2. The third facet, namely emotions re-

lated to knowledge content and/or processes, represents the actual novelty. This facet builds on Barth's notion of knowledge and is best described by outlining its basic three characteristics. A first one entails the identification and understanding of emotions linked to a specific knowledge content and/or processes and the apprehension of related basic positions, assessments and valuations. A second characteristic extends to gaining an understanding on how these emotions shape and color the assessment and valuation of the knowledge content and/or processes in question. A third characteristic addresses the issue of mutability, studying whether the knowledge holders consider the emotional disposition vis-à-vis knowledge content and/or processes as relatively stable. In case he/she reports significant changes in the past, the ensuing question would address the reasons for these changes.

Second element: Knowledge layers

The three facets representing the knowledge layers as conceptualized in this research include (1) the basic ideas and assumptions, (2) the working knowledge and (3) the potential knowledge. With respect to the theoretical foundation, this tripartite classification is inspired by Schutz division of what he calls 'subjective stock of knowledge' into four elements (chapter 5.3.1.2). Additional theoretical contributions formative for the elaboration of these facets are described in the following paragraphs.

The first facet – basic ideas and assumptions – represents a condensation of the first two elements of Schutz's concept of the 'subjective stock of knowledge', namely of 'basic elements of knowledge' and 'routine knowledge'. According to him, condensing these elements is justifiable given that these two elements cannot be strictly delineated and therefore remain somewhat blurry. On top, it is this project's overarching topic of 'understanding local knowledge', along with its inherent complexity that suggests opting for a condensation rather than for a more granular distinction.

In addition to being influenced by Schutz notion of the 'subjective stock of knowledge', this first facet draws on the theoretical considerations on the influence of socialization on knowledge formation expressed by Schutz (chapter 5.3.1.1), Goffman (chapter 5.3.2.1) and Bourdieu (chapter 5.3.3.1). In addition, it is based on Schutz's notion of 'natural attitude' (chapter 5.3.1.2) and on his concept of 'typifications' and 'relevances', in the first place the 'in-order-to'-motives and 'because'-motives (chapter 5.3.1.1). Moreover, it draws upon Bourdieu's concept of 'doxa' (chapter 5.3.3.1) and upon Goffman's concept of 'frames' (chapter 5.3.2).

Thematically, this first facet covers a set of cognitive and emotional dispositions that have been learned and embodied during socialization, which, in turn, established a

common and shared sense of reality. It is shaped by a collection of shared relevances and interpretational patterns. They represent first-order categories supporting the individual in perceiving, interpreting and simultaneously construing reality in accordance with his/her social environment. These relevances and patterns demonstrate how individual consciousness is structured and on what categories intersubjective assumptions held by many individuals are based. These deep-founded beliefs and values form the basis of the knowledge body of any given knowledge holder upon which he/she builds all subsequent cognitive processes, makes sense of and acts in the world. Given that these basic ideas have been absorbed very early in childhood, they remain to a large extent unconscious and guide the actor's actions and thoughts on a very fundamental level. Although these basic ideas may e.g. manifest in differing assessments of external issues by knowledge holders stemming from a similar context, it goes without saying that they are very hard to inquire or determine, given the many facets of motivations. It is nevertheless helpful to keep this somewhat ephemeral basic stratum in mind, especially with respect to differing assessments and valuations of situations or issues by actors from comparable backgrounds.

The second facet – working knowledge – theoretically builds on the third element of Schutz's 'subjective stock of knowledge', namely on what he calls 'explicit' knowledge (chapter 5.3.1.2). Thematically, it refers to what knowledge holders have available to deal with in their daily life. It includes the parts that refer to content and can be verbalized as much as the parts that relate to processes and can be demonstrated and shown.

The third facet – potential knowledge – corresponds to Schutz's forth element of the same name in his concept of the 'subjective stock of knowledge' (chapter 5.3.1.2). Thematically, this facet comes in two forms: The first type describes knowledge that is potential in character in that it has not yet been acquired by the knowledge holder. For obvious reasons, such knowledge does not enter the game. The second type is potential in that it has been known at an earlier point in time, but has either been forgotten in the meantime or mixed with newer knowledge parts.[249]

Third element: Knowledge depth

In this research the three facets detailing knowledge depth are 'common knowledge', 'specialized knowledge' and 'expert knowledge'. Theoretically, this classification is in-

[249] With respect to addressing potential knowledge in a concrete research design, studies have shown that an immersion into a stimulating context can be helpful in evoking additional, previously forgotten knowledge in knowledge holders. In other words, 'potential knowledge' (the third facet) is about finding out whether the knowledge holders might be able to recall more information when exposed to a thematically stimulating experience, such as e.g. being shown pictures displaying the knowledge items in question or taking a walk through a territory associated with the knowledge in question (e.g. so-called 'transect walks', cf. e.g. Hunt and Berkes (2003) or Akerreta et al. (2010)).

spired by Schutz's deliberations on the 'social stock of knowledge' (chapter 5.3.1.2) and on the 'granularity of knowledge' (namely Schutz's differentiation into 'knowledge about', 'knowledge by acquaintance' and 'dimensions of mere belief' (chapter 5.3.1.2)). Essentially, it represents a combination of these two approaches with the difference of dividing what Schutz calls 'specialized knowledge' into two categories distinguishing between differing grades of specialization and expertise (for the detailed explanations cf. the respective paragraphs below).

The first facet – common knowledge – corresponds to Schutz's idea of 'generalized knowledge' (chapter 5.3.1.2), i.e. of knowledge that is not only widespread, but also relevant to all members of a social entity and therefore potentially transmitted from everybody to anybody. At the same time, the facet integrates the idea of both 'knowledge by acquaintance' and 'dimensions of mere belief', as conceptualized by Schutz (chapter 5.3.1.2); it does so by not determining on what justificatory basis someone accepts knowledge as plausible. Thematically, common knowledge refers to knowledge that is intimately linked to daily life and is usually shared in daily activities, without any specific and intended transmission mechanisms. It describes the knowledge on a number of topics a person generally acquires while growing up in and adapting to a specific environment. Importantly, such knowledge is generally not related to one's gender or social role. An example for common knowledge from the health domain is knowledge on poisonous animals, which is generally held by many if not all members of a specific social group.

The second facet – specialized knowledge – takes up Schutz's notion of 'specialized knowledge' (chapter 5.3.1.2), with the difference of conceptualizing it here such that it leaves room for an even more specified layer of knowledge (cf. the third facet below). Specialized knowledge as understood in this context is more extensive than common knowledge and more exclusive in the sense that the people holding it have specific characteristics in common such as age or gender, which delineates them from other members of the social group who do not have access to said knowledge. A health-related example for this knowledge type is general knowledge related to pregnancy, birth and post-natal care commonly often shared exclusively or foremost by women.

The third facet – expert knowledge – is theoretically inspired by a fusion of what Schutz termed as 'specialized knowledge' and as 'knowledge about' (chapter 5.3.1.2), in addition to integrating the idea of 'cultural capital' forwarded by Bourdieu (chapter 5.3.3.2). According to Schutz, 'knowledge about' represents the most specialized form of knowledge in regard to knowledge depth. For this research, this implies that expert knowl-

edge is conceptualized as the most comprehensive version of the three. In general, it is relatively systematized compared to the other two versions and is usually held by only a few people, not seldom related to specific roles in the social group. Its transmission is more formalized and occurs through specific culturally-shaped knowledge exchange mechanisms where specialists – often elders, but not exclusively – share it with a few selected (mostly younger) people within the social group with these people often assuming their expert roles at a later stage in their lives. Importantly, such knowledge can be institutionalized in the form of titles attributed to the holders of expert knowledge or find an expression in specific objects associated with this type of specialized knowledge. A health-related example of this knowledge type is knowledge held by midwifes or medicinal plant specialists whose expertise goes transcends the popular and generally relatively widespread knowledge on household remedies.

Relations: The relations of the concept of the structural aspects of knowledge to other concepts in the overall framework are manifold. In terms of the incoming relations ('adopted concepts') the first element – *knowledge components* – is informed by two 'own' concepts developed earlier, i.e. by the concept of knowledge content (chapter 7.2.1) and the concept of knowledge processes (chapter 7.2.2). It is additionally grounded in Barth's anthropologically coined notion of knowledge (chapter 5.4.1.1) and in Berlin's 'stocks of knowledge I and II' (chapter 5.4.3.2) . The second element – *knowledge layers* – is informed by Schutz' concepts of the 'subjective stock of knowledge' and the 'social stock of knowledge' and by his notions of 'natural attitude', 'typifications' and 'relevances' (chapters 5.3.1.1/5.3.1.2), by the concept of 'doxa' suggested by Bourdieu (chapter 5.3.3.1) and by the deliberations on the role of socialization on knowledge formation by Schutz (chapter 5.3.1.1), Goffman (chapter 5.3.2.1) and Bourdieu (chapter 5.3.3.1). The third element – *knowledge depth* – rests upon the concept of the 'social stock of knowledge' and the idea of the 'granularity of knowledge'[250] advocated by Schutz (chapter 5.3.1.2) and upon the concept of 'capital forms' by Bourdieu, namely on 'cultural capital' (chapter 5.3.3.2). In terms of the outgoing relations ('informed concepts'), the concept of the structural aspects of knowledge informs the concept of accepted knowledge described in chapter 7.2.7.

[250] Procedural comment: Schutz does not use the collective term of 'knowledge granularity' I employ here, but speaks of its three components 'knowledge about', 'knowledge by acquaintance' and 'dimensions of mere belief' (cf. chapter 5.3.1.2).

7.2.4 Social aspects of knowledge

The concept of the social aspects of knowledge comprehensively details the phenomenon of knowledge in terms of its social conditionality and embeddedness.[251] Describing the social aspects of knowledge involves two aspects, namely (1) the social formation of the fundamental knowledge base during socialization and (2) the shared core value base.

Problem/Issue addressed: The concept of the social aspects of knowledge informs the researcher and/or practitioner on the various social factors that need to be taken into account when striving to understand knowledge as a social phenomenon in its many ramifications. The absence of such a bird-view approach harbors the risk of partial insights potentially not being recognized as such, leading to hasty and incomplete statements on the social conditionality of a knowledge form observed.

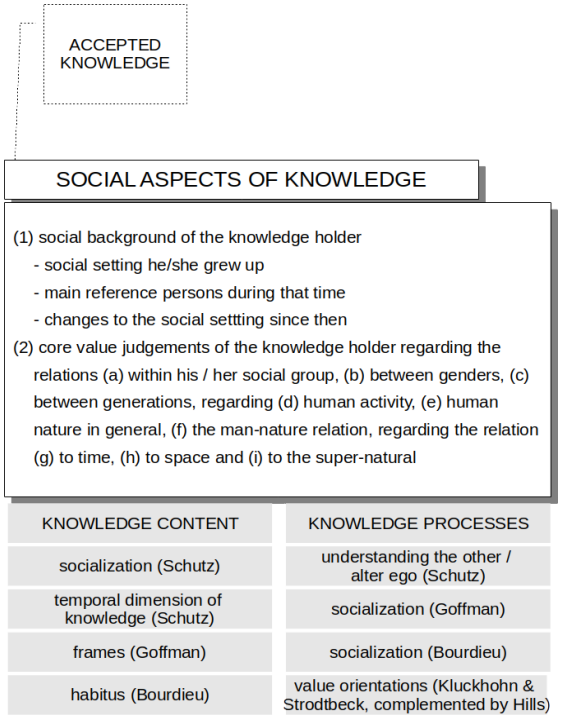

Illustration 47: Concept of the social aspects of knowledge

Elements: The two elements of this concept outline these social issues in more detail. The first element – formation of the knowledge base through socialization – explores the effects of the socialization phase on developing the ability to communicate and interact intersubjectively and, importantly, on establishing a core knowledge base. The second element – shared core value base – describes the set of values and assessments shared with the social group one belongs to. As such, these two elements, along with the facets detailing them, represent highly aggregated categories. To outline their inherent characteristics and functions, I specify them in the following paragraphs.

[251] Procedural comment: In parallel to the concept of the structural aspects of knowledge (cf. chapter 7.2.3), this concept consists of characteristic elements representing independent categories that do not lend themselves to being integrated into concepts directly derived from the dimensions discussed in chapter 5 (for a detailed account of the relationship between concepts and dimensions refer to chapter 7.1.2).

First element: Formation of the knowledge base via socialization

This element underlines the historicity of knowledge. Building on Schutz's argument that the world existed before one's birth and will continue to do so after one's death (chapter 5.3.1.2), it underlines that knowledge did not emerge out of nowhere, but has a 'history' of thousands of years. In truth, knowledge has evolved over the course of human history and has continually been expanded, diversified, refined and transmitted to subsequent generations. With respect to the individual, this stresses the relevance of socialization for the process of knowledge formation. In line with the positions of Schutz (chapter 5.3.1.1), Goffman (chapter 5.3.2.1) and Bourdieu (chapter 5.3.3.1) on socialization, this element stresses that a significant part of the knowledge base is internalized during (primary) socialization. This also includes a basic understanding of how social situations have to be interpreted, as exemplified in Goffman's concept of ‘frames’ (chapter 5.3.2.1). However, this element also acknowledges the limitations of what can be transmitted through socialization, taking into account Bourdieu's concept of ‘habitus’ (chapter 5.3.3.1): As much as the social setting provides one with a general knowledge, it also demarcates one's knowledge base by means of promoting the perspective on the world that is characteristic for the social group one was born into. While these perspectives transmitted by one's social group are not unalterable per se, they still define the first categories of perception that guide all subsequent experiences in terms of interpreting them. Following Schutz, this shared perspective – regardless of all its limitations described above – is also at the base of what he calls the ‘general thesis of the alter ego’ (chapter 5.3.1.1), which allows building on intersubjectivity for transmitting meaning and creating sense in communicative processes. In line with Schutz' perspective on 'understanding the other', intersubjectivity is not seen as a merging of perspectives, but is conceptualized as an indirect understanding: One has to rely on the interpretation of signs and indications without being ever fully certain whether the intersubjective process of creating sense and meaning culminates in a successful communication, given the approximate character of these processes.

Against this backdrop, the two facets detailing the first element focus on the social setting of the knowledge holders. A first facet explores their social background and inquires as to who were the main reference persons during childhood. Related to this, it studies whether there were any additional mentors during childhood or adolescence who had a lasting impact on the knowledge holder's knowledge base and, more generally, on his/her life. A second facet addresses the issue of change and explores whether the social setting the knowledge holder grew up has undergone significant

changes. If it did, this facet explores in what respects, with what kind of consequences and how the knowledge holder assesses this change.

Second element: Shared core value base

Theoretically, the second element draws upon the contribution by Kluckhohn and Strodtbeck on value orientations (chapter 5.4.2.1) and on the further development of their theory by Hills (chapter 5.4.2.2). This element encompasses the value judgments of the knowledge holders on a number of domains. Such judgments – in this project called ‘core values’ – are transmitted during socialization, are central for a meaningful interaction and, consequently, are shared with the surrounding social group, at least to a certain extent.

Based on the literature, nine facets are suggested to characterize this core value base: A first facet extends to the way how people in the knowledge holder's group relate to each other. It asks whether the organizing principle is rather hierarchical, consensus-/ group-oriented or individualistic. The second facet details the first one in specifically concerning gender relations and exploring whether women are considered to be generally subordinate or superior to men or whether an egalitarian approach is prevalent. In the case of the latter, it would be interesting to examine out whether the two genders are responsible for specific domains or whether all domains of life are shared and managed together. A third facet relates to the relationship between the generations and examines whether elderly persons are allocated a special position in the social hierarchy, acknowledging and appreciating their life experience and wisdom or whether elderly persons do not experience any special age-related veneration. A forth facet involves the dominant conceptualization of human activity and explores the beliefs with respect to appropriate human goals and motivations. It examines whether the emphasis is generally set on living in the present moment and according to one's own motivational structure or whether the individuals seek to achieve specific goals and accomplishments that are externally determined and approved. In case of a mixture of both, it is interesting to learn which attitude is displayed in what contexts of life. A fifth facet deals with the conception of human nature in general, studying the prevalent beliefs as to whether human nature in its core is considered to be good, evil or a mixture of both. In addition, this facet explores whether human nature is regarded as mutable in principle, meaning that one can learn and adapt or whether one is considered to be born with a specific stable disposition, leaving no room to adjust and mature. A sixth facet extends to the man-nature relation and explores its conceptualization in the social group, asking whether man should dominate nature, live in harmony with it or subjugate to it. A sev-

enth facet relates to the predominant relation to time and explores whether the decisions of the individuals or the social group are primarily influenced by the past, present or future.[252] An eight facet deals with the prevalent conceptions of space and explores whether it is considered to be mainly public, i.e. accessible for all and everybody, mainly private with exclusive rights of use or any sort of mixture in between. In other words, this facet examines how space is treated in the respective social group as to who owns it and who has the right to occupy and use it. A ninth facet involves the conception of and relation to the super-natural. In case the social group to which the knowledge holders belongs forms a concept of the super-natural, this facet examines the characteristics of the super-natural in place and studies the group's relationship to it and the consequences of this relation that are observable in daily life.

Relations: The relations of the concept of the social aspects of knowledge to other concepts in the overall framework is complex, given that it is one of the two concepts constituting the basic characteristics of knowledge. On the overall, the concept of knowledge content (chapter 7.2.1) and the concept of knowledge processes (chapter 7.2.2) inform the concept of the social aspects of knowledge as much as they inform the concept of the structural aspects of knowledge (cf. chapter 7.2.3). This is due to the temporality of knowledge described above: Existing knowledge content and processes transmitted via socialization influence by definition the following generations in the formation of their conception of knowledge, and thereby, of the world. Apart from this general statement, the elements described above are based on specific concepts adopted from the literature, resulting in the following incoming relations ('adopted concepts'): In the case of the first element – formation of the knowledge base via socialization – it is Schutz's idea on the temporal dimension of knowledge (chapter 5.3.1.2), along with his conception of the crucial role of socialization in the knowledge formation process and his thesis of the ‘alter ego’ and of what he calls 'understanding the other' (chapter 5.3.1.1). In a same vein, the internalization of knowledge during the socialization process is also advocated by Goffman (chapter 5.3.2.1) and by Bourdieu (chapter 5.3.3.1). Finally, the element is influenced by Bourdieu's concept of ‘habitus’ (chapter 5.3.3.1) and by Goffman's notion of ‘frames’ (chapter 5.3.2.1). The second element – shared core value base – is informed by the concept of value orientations suggested by Kluckhohn and Strodtbeck (chapter 5.4.2.1) and later detailed by Hills (chapter 5.4.2.2).

[252] Studies conducted so far point to the following tendencies: In the case of an orientation towards the past, individuals tend to seek to maintain and preserve traditions, longstanding beliefs and teachings while respecting and venerating elderly persons and ancestors. An orientation towards the present entails focusing not only on immediate needs but also on integrating changes in beliefs and traditions to the extent sensible. Lastly, an orientation towards the future involves a focus on future prospects and needs that are planned ahead as much as the readiness to replace old structures by new ones in case they seem more suitable for attaining relevant goals.

As far as the outgoing relations (‘informed concepts’) are concerned, the concept of social aspects of knowledge informs the concept of accepted knowledge (chapter 7.2.7).

7.2.5 Knowledge legitimation

The concept of legitimation describes the justificatory basis of a given knowledge form, as reported by the knowledge holders themselves. It outlines the general emic substantiations as to what justifies the specific knowledge and what renders it true, delineating it from mere belief.

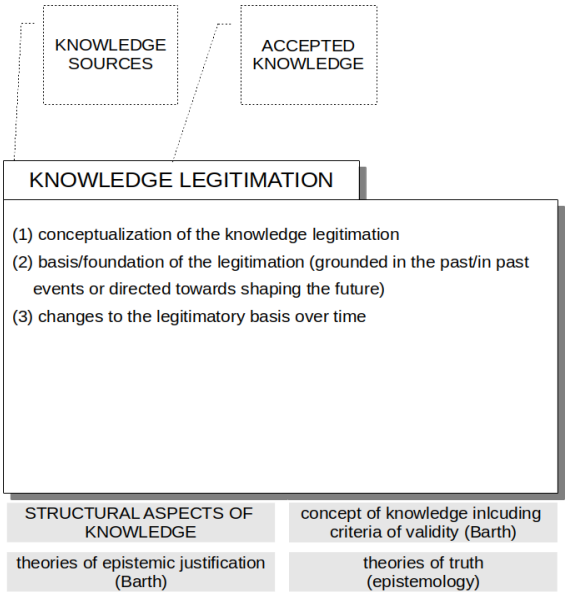

Illustration 48: Concept of knowledge legitimation

Problem/Issue addressed: The concept of knowledge legitimation covers the rationale provided for the very foundation of the knowledge in question. If knowledge was studied without taking into account its specific legitimational basis, it would not be possible to generically and structurally understand the range and limits of what is perceived as valid knowledge by the knowledge holders.

Elements: The three elements contained in the concept of knowledge legitimation outline the foundation on which a given knowledge form is based, drawing on Barth's notion that all knowledge forms inherently possess criteria of validity (chapter 5.4.1.2). More specifically, the first element is based on the epistemological discussion on the criteria for the validity of knowledge (chapter 5.2.2) and on the theories of epistemic justification (i.e. the positions advocated by evidentialists/reliabilists and internalists/externalists, cf. chapter 5.2.1.1). It inquires the very legitimation of knowledge and of what is true, asking how this legitimation is organized and conceptualized. In this context, several approaches are imaginable, some of which are suggested in the following, bearing in mind that, depending on the knowledge form, other conceptions are likely possible. One such approach to legitimizing knowledge inspired by correspondence approaches to truth (chapter 5.2.2.1) requires concrete evidence for the knowledge in question, evidence that links it to the outer world and thereby to a reality that can be perceived and understood by other human beings. By contrast, legitimation by means of coherence approaches to truth (chapter 5.2.2.2) grounds knowledge in the inner

worlds of the knowledge holder, namely in his/her mind. In addition, it requires that the processes leading to the knowledge in question are coherent, reliable and reproduceable. Lastly, legitimation reached through consensus approaches to truth (chapter 5.2.2.3) does not invest in determining whether the knowledge corresponds to the outer reality or coherently fits into an already existing web of meaning, but only focuses on its usability and applicability in the context of daily life. For this approach, knowledge is considered legitimized if it supports the knowledge holder in handling his/her live and solving daily challenges. The second element takes up Schutz's idea of motivational relevance and his distinction into 'in-order-to'-motives and 'because'-motives (chapter 5.3.1.1) and relates it to the issue of knowledge legitimation. It explores on a somewhat more concrete level whether the legitimation is organized around past events – either to repeat well proven traditional patterns or to react to past events – or around future outcomes, with the desire to shape the future according to one's own choices. A third element adds a temporal dimension and questions whether from the perspective of the knowledge holder the legitimational basis underwent changes and modifications over time or whether it remained relatively stable.

Relations: The relations of the concept of knowledge legitimation to other concepts in the overall framework are as follows: Concerning the incoming relations ('adopted concepts'), the concept is grounded on the concept of the structural aspects of knowledge described in chapter 7.2.3 (which includes Schutz's notion of ‘relevances’) and, on a general level, on Barth's conception of knowledge that includes criteria of validity (chapter 5.4.1.2). In addition, it builds on the theories of truth (chapter 5.2.2) and draws from the theories of epistemic justification, more precisely from internalism, externalism, evidentialism, reliabilism (chapter 5.2.1.1). With respect to the outgoing relations (‘informed concepts’), it informs the concept of knowledge sources (chapter 7.2.6) and the concept of accepted knowledge (chapter 7.2.7).

7.2.6 Knowledge sources

The concept of knowledge sources describes the various origins of a given knowledge form, as perceived and described by the knowledge holders themselves. The emergence or 'coming-into-existence' of knowledge can occur in a number of ways and is heavily linked to the way how the respective knowledge is legitimized.

Problem/Issue addressed: The concept of knowledge sources covers the emergence modes of knowledge and clarifies which of the potential ways listed below are considered a valid source for a given knowledge form. Given that the origin of knowledge is a

fundamental issue, having a solid understanding of the knowledge sources considered legitimate within a specific context ensures that one draws the correct conclusions with respect to other dimensions of knowledge. An example of such a dimension contingent on the knowledge source is the aspect of knowledge transmission: Depending on the very source(s) the knowledge of a social group is deemed to stem from, knowledge transmission can be symbolically prestructured and turn out to be everything from relatively straightforward to highly contingent if not impossible on principle[253].

Elements: Three elements determine this concept: The first element builds on the various sources of knowledge discussed in epistemology (chapter 5.2.3). It details the variety of knowledge sources and inquires where the knowledge holders consider the knowledge in question to have originated from. This variety includes the following types of sources:

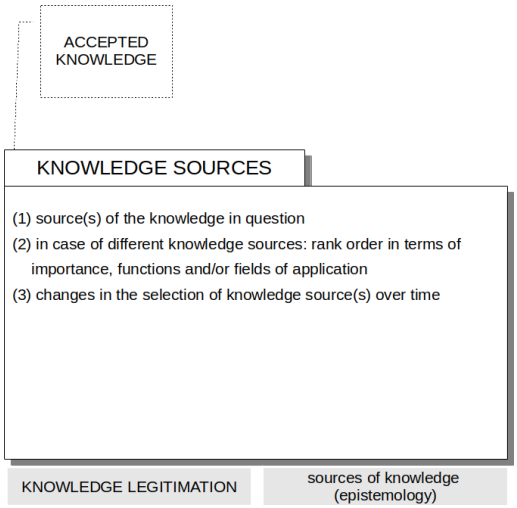

Illustration 49: Concept of knowledge sources

Perception/senses (cf. chapter 5.2.3.1): This knowledge source entails that knowledge is foremost generated through the use of one's senses, i.e. through repeated observation and experimentation that may also include iterated trial-and-error processes. In any case, the knowledge source is intrinsically linked to the outer reality and knowledge is attained by dealing with specific objects of the world.

Reason/reasoning (cf. chapter 5.2.3.2): This knowledge source makes in the first place use of reasoning processes inside one's mind through which knowledge is either deduced or, alternatively, induced from already existing knowledge. Such knowledge generation processes may culminate in an experimental phase in which the product of reasoning is tested, however without recurring to actual experimentation as is the case for the above described 'perception/senses'.

Intuition (cf. chapter 5.2.3.4): This knowledge source is also grounded in one's inner world and amounts to an immediate cognition that does not involve – in contrast to rea-

[253] To illustrate this with an example: Knowledge transmission is relatively unproblematic in case the knowledge concerned is derived either from the senses (trial-and-error) and/or is handed down through testimony. It turns out to be more challenging if the source is intuition in view of it requiring the apprentice to train and develop his/her own intuition. Knowledge transmission can prove to be even impossible in case the knowledge source is intuition (understood as communication with supra-natural beings, spirits or other entities) and the knowledge holder does not receive the permission to transmit his/her knowledge as the potential successors are not accepted by the spirits or deities (Shanley 2008, personal communication).

son/reasoning – the use of conscious rational thinking processes. Intuition (as conceptualized for this context) mostly comes in the form of spontaneous insights and instinctive perceptions. In the case of a religious or spiritual conception of the world, intuition is perceived as an intimate communication and interaction with divine or supra-natural entities. Often, intuition is not the exquisite source of knowledge as its development to a large part builds on preceding real-world experiences and therefore on an active involvement with the world.

Testimony (chapter 5.2.3.6): This knowledge source builds on transmission as knowledge is being passed from one individual to another through testimony. This type best shows the collective nature of knowledge acquisition, as it includes in its base knowledge that has been generated before one's lifespan and outside one's immediate physical neighborhood. It is, however, not 'new knowledge' in the sense that is has been newly generated, but it serves as a source for preserving knowledge over time spans. The transmission of knowledge in the form of testimony can be oral and/or written.

A second element describing the concept of knowledge legitimation relates the knowledge sources to each other and focuses on whether different sources coexist and if so, whether there is a rank order detailing the relative importance of the different sources or assigning them to differing fields of application or functions. A third element addresses the issue of temporality and explores whether the favorite knowledge source(s) remained the same over time or whether there were changes in the sources of knowledge commonly considered valid, recently or at an earlier point in time.

Relations: The relations of the concept of knowledge sources to other concepts in the overall framework are as follows: In terms of the incoming relations ('adopted concepts'), it is informed by the concept of knowledge legitimation described in the preceding chapter 7.2.5. In addition, it draws on the various sources of knowledge discussed in the frame of the epistemological foundations (chapter 5.2.3). In terms of the outgoing relations (‘informed concepts’), it informs the concept of accepted knowledge described in the following chapter 7.2.7.

7.2.7 Accepted knowledge

The concept of accepted knowledge outlines the knowledge body considered viable and compatible with the prevalent conception of the world by a specific social group living in a specific locality. It has to be differentiated from what could be called ‘unorthodox knowledge’, i.e. knowledge surpassing what can be reconciled with locally existing and generally approved knowledge.

Problem/Issue addressed: The concept of accepted knowledge addresses the validity of knowledge in terms of its social acceptance. If a discussion of knowledge was devoid of the deliberation regarding what counts as accepted knowledge, it would lack the information as to what kind of knowledge is socially legitimized. Conversely, it would also miss covering the kind of knowledge that transcends this scope and might therefore not be as readily shared and communicated.

Elements: The three elements characterizing the concept of accepted knowledge describe the specific knowledge that is socially legitimized in the social group in question. The first element builds on the structural aspects of knowledge elaborated earlier in chapter 7.2.3. It refers to those aspects of knowledge that encompass not only knowledge content and knowledge processes, but also a range of aspects related to e.g. knowledge depth and its distribution (for a detailed account cf. chapter 7.2.3). The second element is founded on the concept of knowledge legitimation developed in chapter 7.2.5. It addresses the issues of legitimation itself and outlines its social conditionality and the related epistemological criteria for validating the knowledge adopted by the social group in question (for a detailed account cf. chapter 7.2.5). The third element adds a temporal dimension and explores the mutability of what qualifies as accepted knowledge, asking whether from the perspective of the knowledge holders changes have occurred over time with respect to what is generally considered representing accepted knowledge.

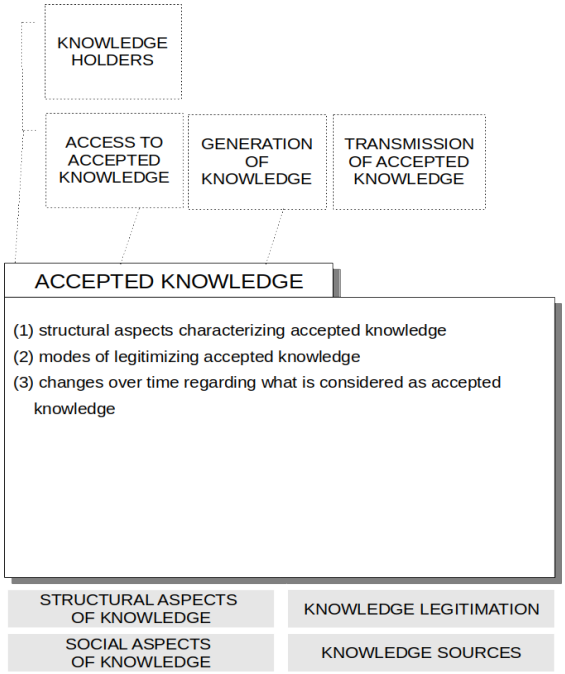

Illustration 50: Concept of accepted knowledge

Relations: The relations of the concept of accepted knowledge to other concepts in the overall framework are the following: In terms of the incoming relations ('adopted concepts'), it builds on the concepts of the structural and social aspects of knowledge developed in chapters 7.2.3 and 7.2.4 and on the concepts of knowledge legitimation (chapter 7.2.5) and knowledge sources (chapter 7.2.6). As for the outgoing relations ('informed concepts'), it informs the concept of knowledge holders (chapter 7.2.8), the concept of access to accepted knowledge (chapter 7.2.10), the concept of generation

of knowledge (chapter 7.2.11) and, lastly, the concept of transmission of accepted knowledge (chapter 7.2.12).

7.2.8 Knowledge holders

The concept of knowledge holders describes the actual persons possessing the knowledge in question. It underlines that local knowledge – given it is explored in a broad, inclusive manner that not only concentrates on content and, maximally, processes – is embodied and shaped by a human being who in turn is part of a specific social setting and network tat influences him/her.

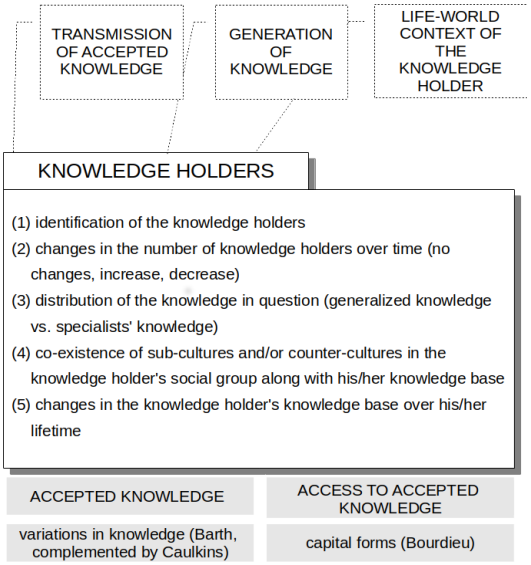

Illustration 51: Concept of knowledge holders

Problem/Issue addressed: The concept of knowledge holders covers the social conditionality of knowledge: It guides the researcher in taking into account the knowledge bearer, counteracting through this inclusive approach certain tendencies to solely focus on what is being known while leaving out the person who processes, structures and interprets the knowledge.

Elements: The five elements[254] determining this concept circle around the persons embodying the knowledge in question. The first element tackles the central issue of who in a given social group are in fact the holders of the knowledge studied. Depending on the research scope and the targeted granularity of knowledge, this may include everything from a wide range of people to a few experts. A second element positions the first element into a temporal perspective and inquires whether the number of knowledge holders has significantly in- or decreased in the course of a time span that is considered relevant for the knowledge in question. The third element draws upon Schutz's concept of the 'social stock of knowledge' (chapter 5.3.1.2). It focuses on the knowledge distribution in the social group surrounding the knowledge holder and asks whether the knowledge in question is about evenly distributed or rather stratified in graduations from generalized to specialist knowledge. A forth element is inspired by a specification of Barth's notion of knowledge variation suggested by Caulkins (chapter 5.4.1.2). It examines whether differing knowledge sub-cultures exist in the knowledge holder's social group,

[254] Procedural comment: The first two elements of this concept are not founded in the literature discussed in chapter 5 as they are too fundamental and at the same time too obvious to have been tackled theoretically in more detail.

including potentially mutually excluding 'counter-cultures'. A fifth element draws upon Barth's notion of knowledge variation (chapter 5.4.1.2) and looks at a knowledge holder's individual knowledge base and asks whether – from an emic perspective – it changed over his/her lifetime or whether it remained relatively stable.

Relations: The relations of the concept of knowledge holders to other concepts in the overall framework are the following: In terms of the incoming relations ('adopted concepts'), it is based on the concept of accepted knowledge discussed in chapter 7.2.7 and on the concept of access to accepted knowledge that I discuss later in chapter 7.2.10. In addition, it is grounded on the idea of variations in knowledge as proposed by Barth and complemented by Caulkins (chapter 5.4.1.2) as well as on the concept of 'capital forms'[255] brought forwarded by Bourdieu (chapter 5.3.3.2). In terms of the outgoing relations ('informed concepts'), it informs the concept of the generation of knowledge (chapter 7.2.11) and the concept of the transmission of accepted knowledge (chapter 7.2.12), in addition to representing the base for a third concept, i.e. the concept of the life-world context of the knowledge holder (discussed in the following chapter 7.2.9).

7.2.9 Life-world context of the knowledge holders

The concept of the life-world context of the knowledge holders describes the circumstances and settings in which the key actors live. This covers a broad range of factors: On the one hand, it includes economic, social, environmental, institutional and political aspects; on the other hand, it encompasses a set of culturally shaped core values and assumptions about the world in general that characterize the respective perspective on how to handle reality and address everyday challenges.

Problem/Issue addressed: The concept of the life-world of knowledge holders concentrates on the actual life-world context of the knowledge holder. Taking into account the numerous life-world dimensions influencing and shaping the knowledge holder in his/her perspective on reality is highly relevant for understanding how he/she interprets and makes sense of the world such that it allows him/her to act in it.

Such a broad approach counteracts the tendency to focus on specific knowledgeable individuals while not recognizing the extent to which they are members of a specific social group – or of more than one for that matter – that influences them in their basic ideas, opinions and beliefs. In addition, the concept stresses the influence externalities

[255] Procedural comment: In contrast to chapter 7.2.3 on the structural aspects of knowledge where 'cultural capital' is described to inform the concept, all four capital forms – 'economic', 'social', 'cultural' and 'symbolic' – are formative in grounding and informing the concept of the knowledge holders.

can exercise on a given knowledge form; examples include the political and economic situation, the institutional setting or the very state of the natural environment the knowledge holder and his/her community live in.

Elements: The eleven elements describing this concept illustrate the diverse dimensions of the life-world context of the knowledge holders. Theoretically, they are broadly informed by 'Berlin's stock of knowledge III' (chapter 5.4.3.2) and held together by Schutz's basic notion of the 'life-world' (chapter 5.3.1.2). In addition, the elements 7-11 are specifically inspired by theoretical concepts discussed earlier in chapter 5 and referred to in more detail below. In contrast to this, the elements 1-6 lack a theoretical foundation in the theories discussed earlier as they do not elaborate on the characteristics of life-worlds in the necessary depth.

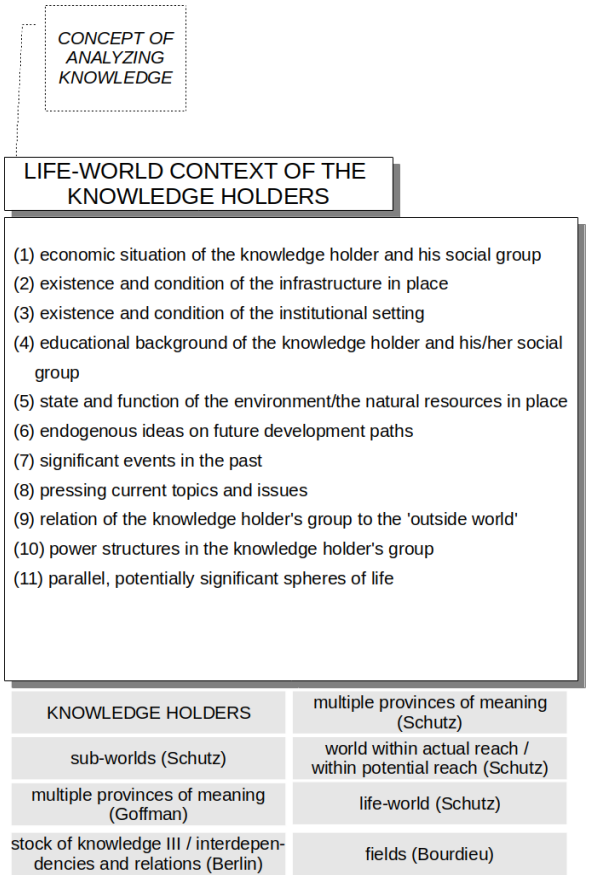

Illustration 52: Concept of the life-world of knowledge holders

The first element addresses the economic situation of the knowledge holders and of his/her primary social group in general, studying the overall distribution of wealth and assets in the knowledge holder's social environment. The second element examines the infrastructure in place, including e.g. public buildings, telecommunication systems, sanitary infrastructure, roads and transport systems. The third element studies the institutional setting such as facilities for schooling or healthcare. The forth element explores the educational background(s) of the knowledge holder(s) and compares it/them to the backgrounds of members of his social group. The fifth element relates to the overall state of the natural environment and asks a number of questions, including whether the natural environment supports the knowledge holder and his/her social group in ensuring their livelihood, whether the (potential) environmental wealth contributes to overall income generation[256], whether there are any restrictions or management rules imposed on the use of natural resources, how the land rights are organized in general and, fi-

[256] This includes among others the selling of timber or non-timber forest products (NTFPs) as main income sources.

nally, whether the knowledge holder's social group is responsible for managing natural resources, be it on a customary basis or commissioned by official authorities. The sixth element explores the social group's endogenous ideas and suggestions about future development paths, studying the people's respective hopes and fears and their perspective on potentials and constraints they expect to potentially face in the future.

The seventh element is inspired by Bourdieu's concept of 'fields' (chapter 5.3.3.1) whereby 'fields' are broadly understood as themes and topics pivotal in terms of structuring social groups. Specifically, this element refers to the history of the knowledge holder's social group and explores whether there were any significant events in that past that had a lasting impact on the group. Potentially related to this and equally drawing on Bourdieu's concept of 'fields' (chapter 5.3.3.1), the eighth element focuses on the topics and issues preoccupying and, possibly, burdening the knowledge holder's social group. The ninth element is grounded in Schutz's notion of the 'world within actual reach' as opposed to the 'world within potential reach' (chapter 5.3.1.2). It looks into the relation of the knowledge holder and his/her social group to the world outside their community, studying the existing contacts to the 'outside world'[257], the interests of third parties in the communities' knowledge, territory or other assets and the general power relations outside the social group that directly influence the social group's surviving and thriving. The tenth element is inspired by one of Kluckhohn & Strodtbeck's value orientation, i.e. the 'relational orientation' (chapter 5.4.2.1). It concentrates on the general power structures in the knowledge holder's social group. In a first step, it examines how the group is structured on a continuum from highly hierarchical to individualistic and studies how decision-making processes are structured and organized on the level of the group. In a second step, it explores a number of specific dimensions in which the aspects of power and domination come into play, including gender, generational cohort, religion, family/clan structures, professions, education and wealth. The eleventh element integrates Schutz's notion of 'sub-worlds' (chapter 5.3.1.2), along with his conception of the 'multiple provinces of meaning' (chapter 5.3.1.2) – a conception that has been taken up and commented by Goffman (chapter 5.3.2.1). It explores whether other spheres and realms of life such as e.g. dreams or imaginations play a role in the social group's approach to dealing with reality and if so, how much importance the group members attribute to this/these realm(s).[258]

---

[257] This is particularly relevant in the case of social groups living in remote places or in relatively closed communities.

[258] Procedural comment: In addition to these eleven elements, the life-world context of a social group is significantly structured by its conception of (a) the human nature, (b) human activity, (c) space, (d) time, (e) the relation to the super-natural and (f) the man-nature relation. As these aspects have already been discussed in the context of the concept of the social aspects of knowledge (chapter 7.2.4, cf. element 'shared core value base'), they are therefore already part of the framework, in line with the framework's premise that the concepts have to build on one another.

Relations: The relations of the concept of life-world of the knowledge holders to other concepts in the overall framework are the following: In terms of the incoming relations ('adopted concepts'), it is on the one hand based on the concept of knowledge holders (cf. chapter 7.2.8). On the other hand and with respect to the theoretical contributions from chapter 5, it is informed by the Schutz's idea of the life-world (chapter 5.3.1.2), the 'sub-worlds' and his differentiation between the 'world within actual reach' as opposed to the 'world within potential reach', in addition to his conception of the 'multiple provinces of meaning' (cf. chapter 5.3.1.2). It also grounds on Goffman's interpretation of the 'multiple provinces of meaning' introduced by Schutz (chapter 5.3.2.3), on Bourdieu's concept of 'fields' (chapter 5.3.3.1) and on Berlin's 'stock of knowledge III' (chapter 5.4.3.2). In terms of the outgoing relations ('informed concepts'), the concept of the life-world of the knowledge holders contributes to informing the overarching concept of analyzing knowledge (chapter 7.2).

7.2.10 Access to accepted knowledge

The concept of the access to accepted knowledge details the question of how exactly access to a given knowledge is socially organized. The organization of this access can vary significantly: Knowledge can come in the form of 'common knowledge' open to whoever comes into contact with and is interested in it; at the other end of the spectrum, it can also refer to highly specialized knowledge that is only accessible to few preselected persons.

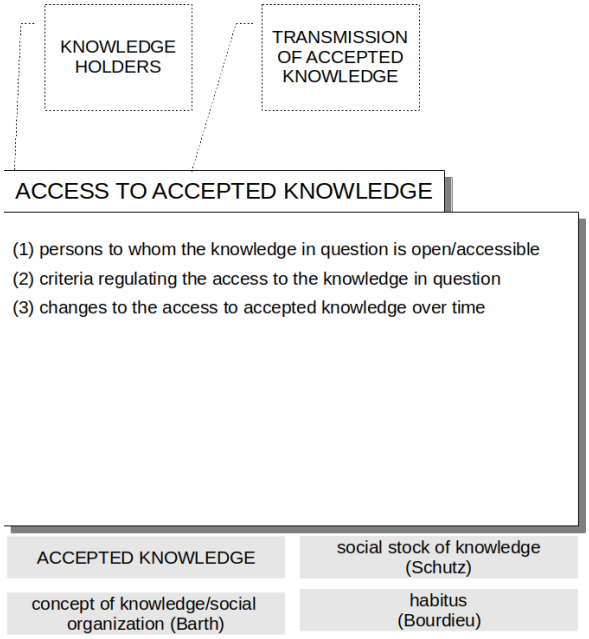

Illustration 53: Concept of access to accepted knowledge

Problem/Issue addressed: The concept of the access to accepted knowledge covers a central aspect of the social organization of knowledge in discussing the circumstances under which knowledge can be accessed. Reasoning on knowledge without addressing the related issues of access would result in an incomplete picture – incomplete in the sense that it ignores that access to knowledge cannot be simply assumed, but is always subject to a specific social organization that can include as much as exclude specific groups or individual persons.

Elements: The three elements describing the concept of access to accepted knowledge circle around the issue of the social organization of access to knowledge. The first element is inspired by Schutz's notion of the 'social stock of knowledge' (chapter 5.3.1.2) and Bourdieu's concept of 'habitus' (chapter 5.3.3.1)[259]. It studies to whom the knowledge in question is accessible. On the basis of the first element, the second one examines the criteria regulating the access to knowledge. It explores whether potential restrictions are due to access socially being restricted (as e.g. in the case of knowledge separation between genders) or due to one's individual dispositions not allowing the handling of such knowledge (as e.g. in the case of physical restrictions or age). The third element addresses the temporality and investigates whether there have been changes over time in the regulation of access to accepted knowledge or whether it remained relatively stable.

Relations: The relations of the concept of access to accepted knowledge to other concepts in the overall framework are the following: Regarding the incoming relations ('adopted concepts'), it is informed by Schutz's notion of the 'social stock of knowledge' (chapter 5.3.1.2) and Bourdieu's concept of 'habitus' (chapter 5.3.3.1), Moreover, it grounds in the concept of accepted knowledge (chapter 7.2.7), next to being inspired by Barth's concept of knowledge, more specifically by the aspect of the social organization of knowledge (chapter 5.4.1.2). In terms of the outgoing relations ('informed concepts'), it informs the concept of knowledge holders (chapter 7.2.8) and the concept of the transmission of accepted knowledge (chapter 7.2.12).

7.2.11 Generation of knowledge

The concept of the generation of knowledge outlines the very process and the related circumstances accompanying the creation of new knowledge. It refers to a prospective dimension of knowledge by focusing on the knowledge that is added to the existing knowledge body.

Problem/Issue addressed: The concept of the generation of knowledge describes the ways in which new knowledge is created and 'coming into existence'. If a reflection on knowledge waived considering the aspect of its own generation, it would limit itself to only taking into account already existing knowledge. As a result, such a static approach to a given knowledge form would fixate it in its current form and therefore be incom-

[259] Procedural comment: Following the logic of the framework with the concepts building on each other, the two theoretical concepts inspiring the first element are not listed in the following paragraph as they already entered the framework in the theoretical foundation (cf. illustration 32 and 71). In the case of Schutz's contribution, it is already reflected in the foundation of the concept of the structural aspects of knowledge (chapter 7.2.3), which is linked to the concept discussed here via the concept of accepted knowledge. As for Bourdieu's concept of habitus, it contributed to informing the concept of the social aspects of knowledge (chapter 7.2.4, which in turn is linked to the concept discussed here via the concept of legitimation and the concept of accepted knowledge.

plete with respect to the knowledge form's potential to develop and adapt to changing external circumstances and necessities resulting thereof.

Elements: The three elements[260] describing this concept discuss a number of issues related to the process and the circumstances of generating new knowledge. The first element is based on Barth's concept of knowledge, namely its social organization (chapter 5.4.1.2) and explores the very process itself. It studies the social processes, approaches and methods in place when it comes to creating new knowledge and inquires whether new knowledge arises impromptu or is actively sought for, potentially even to counter-prove existing knowledge. The second element is inspired by Bourdieu's concept of 'fields' (chapter 5.3.3.1), whereby 'fields' are understood as topics relevant to the respective social group and therefore formative in shaping new areas of knowledge. In addition, it builds on the concept of knowledge content (chapter 7.2.1) and the concept of knowledge processes (chapter 7.2.2) and examines the actual content and the related processes of the newly created knowledge.[261] The third element explores the very creators of the new knowledge, i.e. the 'knowledge generators', and studies who they are and whether they somehow distinguish themselves from other knowledge holders. The forth element introduces a temporal dimension and questions whether the knowledge holders consider the actual generation of new knowledge to have undergone changes and modifications over time or whether it remained relatively unaltered.

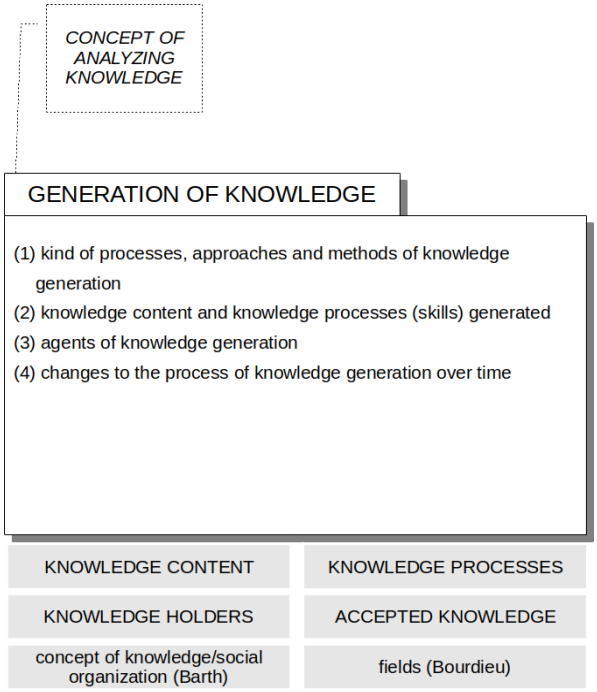

Illustration 54: Concept of generation of knowledge

Relations: The relations of the concept of knowledge generation to other concepts in the overall framework are the following: In terms of the incoming relations ('adopted concepts), it grounds on the concept of knowledge content (chapter 7.2.1), the concept

[260] Procedural comment: Knowledge generation processes (first element) and the actual actors generating knowledge (third element) are not covered in the theoretical discussions outlined in chapter 5 and consequently, these two elements cannot be informed by the literature cited earlier.

[261] Procedural comment: In parallel to the case discussed in footnote 259, the concepts of knowledge content and knowledge processes are not listed as incoming relations/'adopted concepts' as they are already part of the framework and inform the concept discussed here (cf. illustration 32).

of knowledge processes (chapter 7.2.2) and the concept of knowledge holders (chapter 7.2.8). In addition, it is informed by the concept of 'fields' proposed by Bourdieu (chapter 5.3.3.1) and Barth's concept of knowledge, namely by the notion of the social organization of knowledge (chapter 5.4.1.2). With respect to the outgoing relations ('informed concepts'), the concept of the generation of knowledge informs the overarching concept of analyzing knowledge (chapter 7.2).

7.2.12 Transmission of accepted knowledge

The concept of the transmission of accepted knowledge describes the processes of passing knowledge on from one person to another or to an entire group.

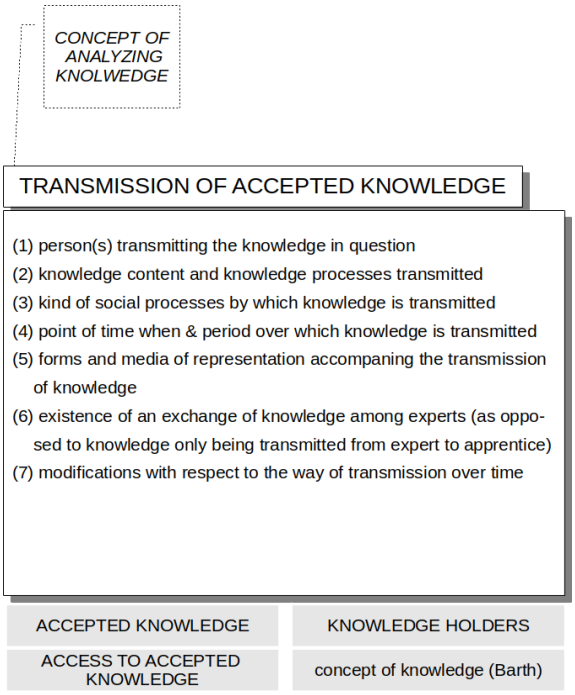

Illustration 55: Concept of transmission of accepted knowledge

Problem/Issue addressed: The concept of transmission of accepted knowledge describes the actual process of transferring knowledge and specifies the actors involved as much as the accompanying circumstances. Were a debate on knowledge devoid of discussing its transmission, it would lack this interpersonal dimension and underestimate the significance of the social processes related to organizing the transfer of knowledge. On a very fundamental level, transmission of knowledge is pivotal for human development as knowledge would be bound to vanish with its holders if there were no transmission. As such, knowledge transmission is one of the key dimensions of knowledge preservation in general.

Elements: The seven elements constituting this concept all depict different aspects of the social process of transmitting knowledge.[262] The first element refers to the 'teacher' and describes the person who transmits the knowledge in question. The second element addresses the object of transmission, i.e. the actual knowledge content and related skills. The third element studies how the process of knowledge transmission is

[262] Procedural comment: The topic of knowledge transmission is only very marginally covered in the theoretical contributions outlined in chapter 5. As a result, all elements but one (the fifth element) are informed by practical guidelines and related publications cited in footnote 241. Interestingly, the topic of knowledge transmission with respect to local/traditional/indigenous contexts is in general relatively seldom studied as focal research interest, looking at the sheer number of publications available.

socially organized and outlines the approaches and methods applied in its course. The forth element relates to the temporal dimension of the transmission and details when transmission takes place, i.e. at what kind of occasions knowledge is generally being transmitted and over what period(s) of time. The fifth element – the only one directly grounded in the literature discussed in chapter 5 – is inspired on the one hand by Barth's conception of knowledge postulating that all knowledge forms entail a range of media and representations to communicate and transport meaning (chapter 5.4.1.2). On the other hand, it builds on Bourdieu's concept of 'capital forms', more precisely what he calls 'objectified cultural capital' (chapter 5.3.3.2). On this background, the element focuses on the cultural representations prevalent in and characteristic for transmitting the knowledge in question. This includes studying what kind of media and other forms are used to represent the specific knowledge in the transmission process. It also involves studying a) whether there is any kind of rank order among the representation forms and/or functional allocation of a specific representation to specific situations, b) whether these representations play a symbolic role in a ritual context and, finally, c) whether there were changes or modifications with respect to the representation forms over time. The sixth element addresses the issue of contact and exchange among knowledge holders. It investigates whether knowledge holders are in contact with their equals (be they from the same community or from other places) and whether these contacts are used to discuss and exchange their knowledge, resulting in knowledge transmission not only taking place between teacher and apprentice, but also among equals on an expert level. The seventh element introduces temporality and questions whether from an emic perspective the modes of knowledge transmission underwent changes and modifications over time or whether they remained relatively unaltered.

Relations: The relations of the concept of the transmission of accepted knowledge to other concepts in the overall framework are as follows: In terms of the incoming relations ('adopted concepts'), it is informed by the concept of accepted knowledge (chapter 7.2.7), the concept of knowledge holders (chapter 7.2.8) and the concept of access to accepted knowledge (chapter 7.2.10). In addition, it is grounded on the concept of knowledge proposed by Barth, namely on his perspective on representation as a pivotal element of knowledge and on his emphasis on the social organization of knowledge (chapter 5.4.1.2)[263]. In terms of the outgoing relations ('informed concepts'), the

[263] Procedural comment: In regard to the representations relevant in the transmission process, the concept is also inspired by Bourdieu 'capital forms', more precisely by what he referred to as 'objectified cultural capital' (chapter 5.3.3.2). Due to the framework logic with the concepts building one on another, there is no reference to Bourdieu's capital forms in the description of the relations given that 'cultural capital' is listed as 'informing concept' for the concept of structural aspects (chapter 7.2.3) (cf. illustration 32). The structural aspects in turn inform the concept of accepted knowledge (chapter 7.2.7), which again informs the concept of the transmission of accepted knowledge.

concept of the transmission of accepted knowledge informs the overarching concept of analyzing knowledge.

7.3 Concept of analyzing locality

In parallel to chapter 7.2 on ‘knowledge’, the construction and elaboration of the set of concepts of locality is grounded on the extensive literature analysis in chapter 6. I initially started from a set of three tentative dimensions of locality (cf. chapter 6.2.2), which were then substantially refined and complemented in the course of the literature analysis to a final set of five locality dimensions in total (cf. chapter 4.4.2).

The development of this concluding set was heavily influenced by the literature consulted or, more precisely, by a common theme throughout the literature analyzed, namely the emphasis on the need to fundamentally revise and adapt the conceptions of locality, space and spatiality. Instead of picturing space, places or localities in the customary, traditional manner as static containers providing stable and static canvas-like settings for events to unfold in them, it was recognized that spatial units have to be thought of as dynamic, fluid-like and ever-changing, ‘quasi-living’ entities, equipped with porous boundaries and often shaped by exchange processes with their environment. In this context, ‘quasi-living’ is used strictly metaphorically and does not refer to a locality having an independent life on its own, but to displaying what could be perceived of as a kind of agency, which, in turn, results from the combined agencies of all the various living actors and non-living, human-made artifacts[264] present in the location in question or moving through it.

Against the backdrop of such an agency-oriented approach to locality that takes account of the influences of living and non-living actors, I conceptualize ‘locality’ by focusing on the aspects of movement, exchange and change, asking a set of fundamental questions that are likely to occur when one is confronted with an unfamiliar territory. Anticipating the literature analysis resulted in the identification of five basic, interrelated dimensions of locality (as anticipatorily listed in chapter 4.4.2) that characterize ‘locality’ generically and in broad terms.

[264] In order to prevent any erroneous attributions in terms of this research’s theoretical inspiration and foundation, I would like to reiterate what I already outlined in chapter 4.4.2: Although the actor dimension bears resemblance to Bruno Latour’s notion of ‘actants’ that equally denotes human and non-human actors (1994, 1996), it was not inspired by his contribution nor do I in any form commit to it or its implications. On the contrary, integrating the entity of the non-living actors and relating them to the living ones in one single dimension represents one of the fundamental initial decisions of mine. It is motivated by the often observed tendency of researchers and practitioners to exclusively attribute a steering influence to humans or, at the utmost, to animals or plants, overlooking the paramount influence inanimate objects/stories/practices/ideas can exert such as e.g. mobile devices or the omnipresent debate on terrorism.

For the sake of clarity, I briefly recapitulate these five dimensions of locality in table 6 together with the related key questions.

Dimensions of locality	Key questions
1. physical-material dimension	1. What are the physical, material and resource-related characteristics of the locality in question?
2. actor dimension	2. What kind of living actors (humans/animals/plants etc.) and what kind of non-living actors (artifacts in general/structures/objects/ stories/practices/ideas etc.) are characteristic for the respective locality and constitute its basic configuration? Are these actors physically present in the locality in question, do they move through it and/or do the encounters take place on an imaginary/virtual plane?
3. network dimension	3. How is the locality in question interconnected with other localities and what are the characteristics of this network?
4. influx/response dimension	4. What kind of influencing factors from the outside – living actors (humans/animals/plants etc.) as much as non-living ones (artifacts/ objects/stories/ideas/practices etc.) – enter the locality in question (=influx) and what is the locality's reaction to the influencing factors (=response)? Are the reactions rather receptive or defensive and does the language usage show signs of resistance through the occurrence of counter-marking double-accentedness?
5. relevance dimension (functional-symbolical)	5. What is the relevance structure of a given locality, i.e. what kind of different functions does a given locality embody for the different actors in it and what different symbolic meanings are attributed to it by the various actors?

Table 6: Relationship between the locality dimensions and the related key questions

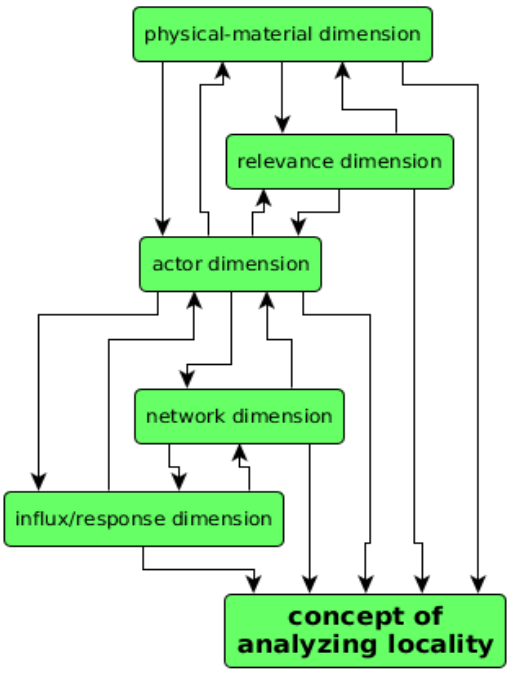

Illustration 56: The five concepts of locality and their interactions

On the basis of the five locality dimensions listed above, I describe in the following chapters 7.3.1–7.3.5 the five concepts of locality that in turn constitute the overarching concept of analyzing locality. These five interrelated concepts characterize locality in as broad a sense as possible. The sequence in which I describe them is as follows: I start with the concept of the physical-material dimension of locality (chapter 7.3.1) and continue with the concept of the actor dimension of locality (cf. chapter 7.3.2). I then discuss the concepts of the network dimension of locality (chapter 7.3.3) and of the influx/response dimension of locality (cf. chapter 7.3.4) and close with the concept of the relevance dimension of

locality, detailing both the functional and symbolic layers (chapter 7.3.5). These five concepts of locality and their interrelationships are shown in illustration 56.

As for the specific method to elaborate the concepts of locality, I recur to the approach chosen for the development of the concepts of knowledge and described in detail in chapter 7.1. As outlined there, I follow the methodology and structure suggested by Deleuze et al. (1994) for elaborating such concepts in a structured and transparent way. They underline the need to characterize each concept along three aspects or key questions that I recall at this point for reasons of clarity, as they structure the following discussion:

1. ***Problem/Issue addressed:*** What is the problem addressed by the concept? What substantial aspect(s) would be missing in the overall framework if the concept was left out altogether?
2. ***Elements:*** What are the elements constituting and characterizing the concept?
3. ***Relations:*** What are the relations of the concept with other concepts – in two respects: a) What is the concept informed by (so-called 'incoming relations') and b) What other concepts does the concept in question inform subsequently (so-called 'outgoing relations')?[265]

7.3.1 Physical-material dimension of locality

The concept of the physical-material dimension of locality relates to the corporeal and tangible basis of locality and concerns the realm of the actual bio-geographical physicality. It refers to the measurable bio-physical properties and features of the place, area or region under study. Moreover, it characterizes the locality in terms of its abiotic and biotic environment and, consequently, covers a broad range of aspects studied in numerous disciplines of the natural sciences – including e.g. ground topography, the general landscape formation, soil types/quality, annual rainfall and sunshine hours, type and quantity of natural resources available and seasonal events such as floods or monsoons.[266]

---

[265] In terms of structuring the incoming and outgoing relations of a concept, I choose the following notation described in chapter 7.1.3: Theoretical inputs adopted from 'outside', i.e. from the respective academic literature outlined in the literature reviews in chapters 5 and 6, are written in lower case (e.g. 'multi-sited ethnography') while concepts developed in the frame of this research are written in capital letters (e.g. 'CONCEPT OF THE NETWORK DIMENSION OF LOCALITY'). While it can be argued that the latter are initially also grounded in the literature reviews on 'knowledge' and 'locality', I opt for this distinction as it facilitates the understanding and transparency of how the framework was construed.

[266] Given the unchallenged primacy and expertise of the natural sciences in this field, this research cannot provide a comprehensive description of the physical-material dimension of locality nor is this considered a desideratum as extensive studies on this topic exist in the respective academic disciplines.

Problems/Issues addressed: The physical-material dimension of locality addresses the actual physical foundation upon which all subsequent spatial considerations are based. Its existence is pivotal: If a locality were devoid of its physical-material dimension, it would lack the fundamental rooting in the fabric of reality, whereby its very existence would be called into question.[267] In view of this, the physical-material dimension of locality forms the foundation of the overall concept of analyzing locality as spatial modifier of knowledge, together with the second basic concept of the actor dimension of locality (cf. chapter 7.3.2).

Given the basic position of the issues addressed, all remaining dimensions of locality necessarily depend on and build upon these two basic concepts, more precisely on a) there being a physical-material place in time and space equipped with a distinct set of artifacts to begin with and on b) there being a range of diverse actors (living and non-living) populating and shaping said place in time and space (cf. next chapter). To this end, the concept of the physical-material dimension provides the categories for assessing the opportunities and potential restraints a given locality might naturally encompass, which covers the fundamental physical-material factors characterizing it.

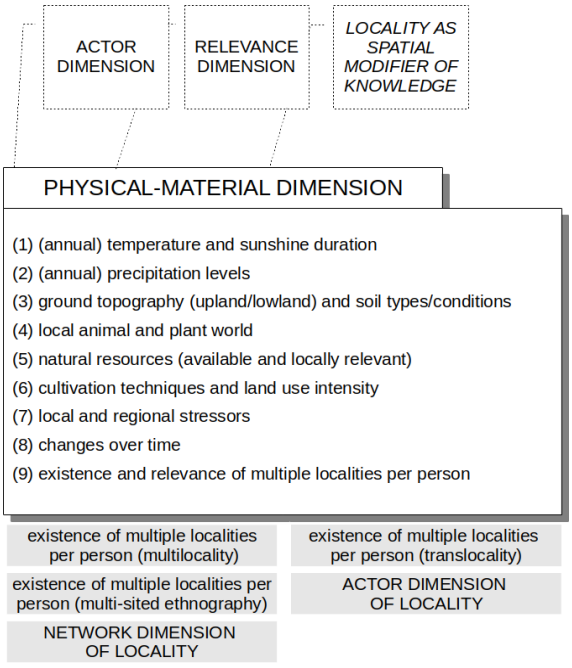

Illustration 57: Concept of the physical-material dimension of locality

In modern times, however, the advent of the internet led to a significant change: The longstanding truth about the necessary material foundation of localities began to erode in view of the multitude of virtual localities formed and entertained on numerous social platforms and discussion groups on the internet. While it still technically true that Information and Communications Technology (ICT) in general bases on some kind of physical hardware being located at a specific geographic location, the relevance of this truth rapidly decreased over the last two decades, mainly for reasons inherent in the development of ICT.[268]

[267] An exception to this are virtual localities, cf. below.

[268] By and large, the decreasing relevance of the actual physical location of hardware goes back to two issues: On the one hand, performance or user experience of a platform are usually not influenced by the location of the physical hardware the platform is running on. (The hardware's location can, however, have legal implications, as different

Elements: Without any claim to comprehensiveness[269], most of the nine *elements* contained in the concept of the physical-material dimension of locality detail the material basis of locality. It might not come as a surprise that only the last one is directly informed by the literature analyzed in chapter 6, given that in respective spatial theories, the materiality of localities is explicitly conceptualized as mere starting point for exploring additional realms beyond. In view of this, the first eight elements below are mainly are inspired by the practice-oriented methods and related tool boxes I am familiar with from field research stays in rural areas.[270]

The first element – (annual) temperature and sunshine duration – provides an indication to the type of environment in question. The second element – (annual) precipitation levels – clarifies the picture in regard to what kind of vegetation and, consequently, what type(s) of agricultural practice can be expected. The third element – ground topography (upland/lowland) and soil types/conditions – informs about the material constitution of the place in terms of the landscape formation (ground topography) and of the physical-mineral qualities of the soil itself (soil types/conditions). The forth element – the local animal and plant world – provides information about the surrounding biotic world. The fifth element – available and relevant natural resources – indicates what types of natural resources are locally available and meant to be used. These resources can stem from the plant or animal world or have an abiotic provenience (e.g. mineral resources). Special attention is paid to the main crops for local subsistence. The sixth element – cultivation techniques and land use intensity – gives an indication as to how the local population proceeds in terms of securing their livelihoods against the backdrop of the locally effective physical-material conditions, expressed in the above elements 1-5. Strictly speaking, 'cultivation techniques' is no feature of the physical-material world, but an expression of human social organization with respect to cultivating the land. I nonetheless subsume it under the concept of the physical-material dimension

countries have different regulations when it comes to ownership, privacy and legality of different types of data and services.)
On the other hand, the last connection between a physical location and the service provided is severed when an internet service is not provided by a particular piece of hardware but rather by a network of devices shifting tasks and work load across the globe, depending on global utilization rates. This phenomenon goes back to the fact that large internet players own and operate huge, intercontinental, dynamic networks of devices where their services are provided from, while many smaller players use those location-less services to provide their own services to their customers. Due to the dynamic character of the network, the provision of a service for one individual can shift across the world without the service provider explicitly causing or the customer even noticing it. When several such (or even conventional) services are combined into one service, the question of where the service is provided from has definitely moved past geographical locations into virtual ones. (Frecè 2017, personal communication).

269 These following eight elements describe the basic physical-material setting of any given locality, without claiming to be an exhaustive list. Comprehensiveness cannot be reached here nor is it aimed at, given that decade-long disciplinary and interdisciplinary research has been conducted in the natural sciences on the physical materiality of localities that cannot be adequately covered here. I do, however, not consider this to be problematic given that this research focuses on the aspects describing locality that explicitly compliment the much researched material aspects of places.

270 Cf. footnote 241 for more detailed account of the instruments consulted.

given that farming activities have ever since strongly contributed to shaping the landscape, rendering it difficult to distinguish between human and 'natural' influences in forming the landscape. The seventh element – local/regional stressors – specifies the preceding element in that it inquires whether there exist(s) or have existed any kind of negative impact(s) affecting the locality in question (environmental damage, pollution, degradation etc.). This also includes natural phenomena in process such as floodings or volcanic eruptions. The eighth element – changes over time – addresses temporality and inquires whether there were any changes to the material, physical and resource-related basis of the locality in question, tanking into consideration both short-term changes and changes over longer periods of time.

The ninth element stands out in that it transcends the purely physical description and is informed by three theories consulted for this project, namely multilocality (chapter 6.3.1), translocality (chapter 6.3.2) and multi-sited ethnography (chapter 6.3.5). These three contributions emphasize the importance of 'modern networks of interconnectedness', underlining the parallel existence and relevance of multiple real-world spatial locations in one person's life that need to be taken into account in one's analysis.

Relations: The position of the concept of the physical-material dimension of locality in the framework is fundamental and so are its relations to other concepts: Concerning the incoming relations ('adopted concepts') the concept is on a very general level informed by the multitude of contributions from the natural sciences, foremost from geography, geology, mineralogy, hydrology and meteorology that for decades described the reality of the physical world in increasingly greater detail and precision.[271] With respect to the literature selected for this project and discussed in chapter 6, three theoretical approaches contribute to informing one of its elements, namely multilocality (chapter 6.3.1), translocality (chapter 6.3.2) and multi-sited ethnography (chapter 6.3.5). In addition to these external theoretical inputs, the concept is also informed by two concepts of locality elaborated here, i.e. the concept of the actor dimension of locality (chapter 7.3.2) and the concept of the relevance dimension of locality (chapter 7.3.5). In terms of the outgoing relations ('informed concepts'), the concept of the physical-material dimension of locality informs the overall concept of analyzing locality (chapter 7.3), next to also grounding the concept of the actor dimension of locality (chapter 7.3.2) and the concept of the relevance dimension of locality (chapter 7.3.5).

[271] Consequently, the physical materiality of a location was for a long time the aspect best researched – if not even the exclusive one.

7.3.2 Actor dimension of locality

Complementing the concept of the physical-material dimension of locality (chapter 7.3.1), the concept of the actor dimension of locality draws the attention to another decisive category that defines and shapes any given locality, namely the entities in a given locality that either act in it or are just present and by doing so influence, structure and shape the locality, covering it with a web of meaning. Importantly, this includes in this project both living beings of all scales including humans, animals and plants as well as non-living things or so-called artifacts. The latter refer in this context to any material object that did not emerge naturally from the web of life, but has been created and introduced through human activity or presence. It covers such diverse elements as infrastructure (roads, bridges, public buildings etc.), communication networks (mail, telephone, internet etc.), consumer goods including technical and electronic devices of all sorts, but also more ephemeral factors such as locally relevant ideas, myths, practices or stories.

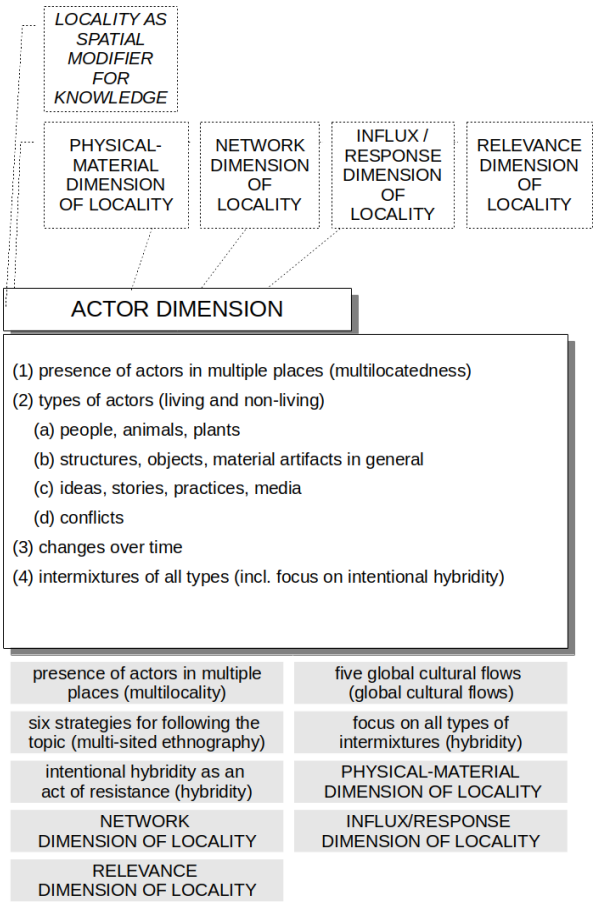

Illustration 58: Concept of the actor dimension of locality

Problem/Issue addressed: The actor dimension of locality represents the second basic characteristic of any given locality, next to the physical-material dimension. As a matter of fact, the material dimension is complemented by the actor dimension. Any description of a locality that neglects the agency-laden actor dimension and only focuses on the bio-physical aspects while striving for an informed understanding of the locality as a whole has to be considered incomplete. In fact, there is a need to include the pervasive and often lasting impact of these living and non-living actors into one's consideration – possibly except for a few remaining regions that have purportedly remained largely untouched by both living and non-living actors from the outside world.[272]

[272] Whether it is justifiable to conduct research or development interventions in such remote locations at all is a whole subject of its own.

Elements: The four elements contained in the concept of the actor dimension specify the categories and types of influences affecting a given locality. Thereby, the category of actors is conceptualized as broadly and encompassingly as possible to account for the plurality of influencing elements in the contemporary world, including living and non-living ones. It is important to keep in mind that this influence can be exerted through specific actions from human or animal actors as much as through the sheer (potentially context-changing) presence of non-living, human-made artifacts such as e.g. physical structures, material artifacts, ideas, practices or stories.

The first element is informed by 'multilocality' (chapter 6.3.1) and emphasizes the presence and activity of actors in multiple locations, often also referred to as 'multilocatedness'. The second element is inspired by Appadurai's 'global cultural flows' (chapter 6.3.4), next to being informed by 'multi-sited ethnography' (chapter 6.3.5). Building mainly on the latter, the element refers to the six strategies of 'following one's research object'. The element highlights the diversity of potential living and non-living actors and specifies them categorically, grouping them into four sub-types: a) 'people', b) 'material things and objects', c) 'ideas, stories and practices' and, lastly, the special type of d) 'conflicts'. 'People' represents the most obvious and familiar category, whereby special attention is paid to exploring whether there are any specific biographies that are or were formative for the locality in question. 'Material things/objects' is an utterly broad category and encompasses any material object that might be present in a location or moving through it. This includes all objects that traditionally exist in such localities as e.g. specific natural resources or cultural artifacts. Reflecting the complexity of the modern world, 'things' additionally also extends to all artifacts related to the realm of technology (e.g. instruments, electronic devices), finance (e.g. modern means of payment, new financing models) and media (e.g. social media, social networks). 'Ideas/stories/practices' represents the third sub-category and denotes all non-material influences that are present or move through a locality including all ideologically motivated influences such as ideas, stories, metaphors, practices, methods and procedures. Lastly, 'conflict' stands for all kinds of contentions that influence and shape a given locality, whatever their reason or origin may be. With respect to all these four categories of actors, it is important to keep in mind that there cannot be any concluding and objectively valid compilation of actors that shape a given locality. The reason therefore lies in the plurality of local (emic) perspectives involved, in addition to the etic perspective of the researcher or practitioners who to the best of his/her abilities aims to make sense of the set of actors locally present, living and non-living ones. Gaining an understanding of the overall relevancies in a given locality would therefore require questioning a

significant part of the local population in order to be able to draw any valuable conclusions. The third element[273] addresses the temporality and investigates whether there have been any changes in the composition of the living and non-living actors in a given locality, be these changes of recent date or already more long-standing. The forth element is grounded on the theoretical basis of 'hybridity' (cf. chapter 6.3.6) and underlines the aspect of mixture with respect to the various types of actors mentioned above and focuses on all kinds of hybrid forms resulting from such inter-crossing, including and going beyond the familiar racial, ethnic, religious and political hybridizations. Special attention is paid to issues related to domination and power and to acts of resistance by means of double-accentedness in the aftermath of such hybridizations.

Relations: In terms of the incoming relations ('adopted concepts'), the concept is informed by four of the theoretical approaches to spatiality discussed in chapter 6, namely by multilocality (chapter 6.3.1), global cultural flows (chapter 6.3.4), multi-sited ethnography (chapter 6.3.5) and hybridity (chapter 6.3.6). In addition to these theoretical inputs, it also builds on concepts of locality developed in this chapter, namely on the concept of the physical-material dimension of locality (chapter 7.3.1), next to being also informed by the remaining three concepts of locality, i.e. the network dimension of locality (chapter 7.3.3), the influx/response dimension of locality (chapter 7.3.4) and, lastly, the relevance dimension of locality (chapter 7.3.5). With respect to the outgoing relations ('informed concepts'), the situation is rather straightforward as the concept informs all others given its crucial role: Next to grounding the overall concept of analyzing locality (chapter 7.3), it contributes to informing the concept of the physical-material dimension of locality (chapter 7.3.1), the concept of the network dimension of locality (chapter 7.3.3), the concept of the influx/response dimension of locality (chapter 7.3.4) and the concept of the relevance dimension of locality (chapter 7.3.5).

7.3.3 Network dimension of locality

The concept of the network dimension of locality is a central one in that it reflects pivotal insights from the theoretical advancements of the last decades. Where 'locality' was previously understood as a passive, immutable, singular and functionally fairly unambiguous container for the subsequent unfolding of social processes and relations, more recent studies have proved that such an understanding is inadequate in a number of ways. With respect to the network dimension of locality, it concerns foremost two aspects, i.e. the image of the container itself and the aspect of singularity: *First*, instead

[273] The second element represents an addition from my part instilled by the practical instruments and tool boxes in use in applied development research, cf. footnote 241.

of ‘enclosed containers’, localities came to be seen as having open, porous borders that allow and predestine for permanent exchange with the surrounding world. *Second*, it was understood that given these porous borders localities are far from being singular, shielded or detached entities.

Problem/Issue addressed: The concept of the network dimension of locality is indispensable in situating locality in a broader context by emphasizing that in contrary to earlier understandings, any given locality does not stand alone, but is an intrinsic part of a network of places, regardless of where it is geographically located. An understanding of ‘locality’ void of this aspect would re-conceptualize ‘locality’ along the traditional idea of the detached and immovable container that proved to be an inadequate perspective on contemporary spatial phenomena.

Elements: The four elements constituting the concept of the network dimension invest into detailing crucial aspects of this interconnectedness. The first element builds on a range of theories discussed in chapter 6, namely on multilocality advocating for analyzing space as a ‘system of interconnected places’ (chapter 6.3.1), on translocality with its notion of ‘simultaneous situatedness across different locales’ (chapter 6.3.2) and on globalization/glocalization with its idea of the ‘global village’ (chapter 6.3.3). Lastly, it is also informed by the concepts of global cultural flows and multi-sited ethnography (chapters 6.3.4 and 6.3.5), more precisely by their broad range of living and non-living actors that shape a given locality, next to emphasis in both theories on the crucial network dimension of locality.

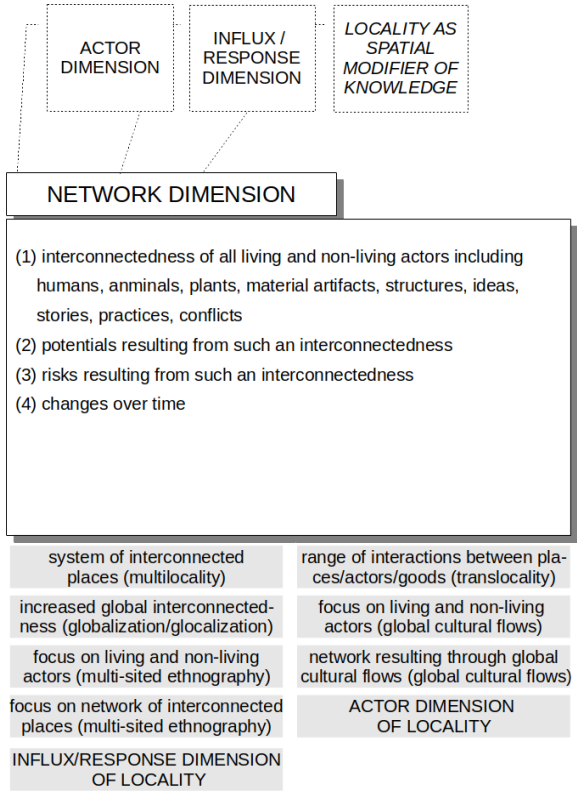

Illustration 59: Concept of the network dimension of locality

On this broad theoretical foundation, the first element emphasizes the ever-present interconnectedness between locales, most succinctly characterized in the expression of the ‘global village’. By postulating this persistent interrelationship of literally everything

there is, the network dimension of knowledge argues against the wide-spread, but outdated ideas of a) 'untouched locales' and b) a distinct separation between the local and the global. Instead, the first element points to the necessity of observing a broad range of categories of actors – living beings and non-living things – in their movement between locales and, subsequently, analyze them in their interconnectedness (including the so-called flows of people, material things, ideas/stories/practices and conflicts, cf. chapter 7.3.2). Importantly, paying attention to the actual movement of living and non-living actors between localities or, more abstractly, between the local and the global is crucial as culture and knowledge turn out to be inspired and produced in such states of simultaneous situatedness across different locales.

In contrast, the remaining three elements do not relate specifically to one of the theories presented, but were inspired by practice-oriented methods and tool boxes commonly in use in applied development research[274]. In this vein, the second element explores the potentials that can result from these interconnections. Complementing it, the third element studies the potential risks stemming from this interrelatedness whereby both intended and unintended consequences of the multifarious interconnections have to be taken into account. The forth element draws the attention to the temporal perspective and inquires whether there were any changes in the network structure, be they recent or already more long-standing.

Relations: In terms of the incoming relations ('adopted concepts'), the concept of the network dimension of locality is informed by a number of the theoretical contributions to spatiality from chapter 6.3, namely multilocality (chapter 6.3.1), translocality (chapter 6.3.2), globalization/glocalization (chapter 6.3.3), global cultural flows (chapter 6.3.4) and, lastly, multi-sited ethnography (chapter 6.3.5). Moreover, it is grounded on concepts developed in this chapter, namely on the concepts of the actor dimension of locality (chapter 7.3.2) and the concept of the influx/response dimension of locality (chapter 7.3.4). Concerning the outgoing relations ('informed concepts'), the concept of the network dimension of locality informs on the one hand the overall concept of analyzing locality (chapter 7.3), next to the concept of the actor dimension of locality (chapter 7.3.2) and the concept of the influx/response dimension of locality (chapter 7.3.4).

[274] For more information cf. footnote 241.

7.3.4 Influx/Response dimension of locality

The concept of the influx/response dimension of locality is distilled from contemporary theoretical contributions that go beyond traditional conceptualizations of locality. Taking up the argument from chapter 7.3.3 on the network dimension, the traditional understanding of locality as a passive, immutable, singular and functionally fairly unambiguous container came to be seen as unable to accommodate its dynamic characteristics. The novel perspective accentuated two aspects: *First*, instead of being considered passive containers and, thus, 'things', localities came to be seen as active players. It was understood that they not only respond to external influxes by varying degrees of adaptation and rejection, but also 'actively' prestructure and -shape the range of potential social processes and relations possible by means of their specific material and actor-related constellation. *Second*, localities proved to be in a permanent process of change and transformation and therefore far from any static or immutable state.

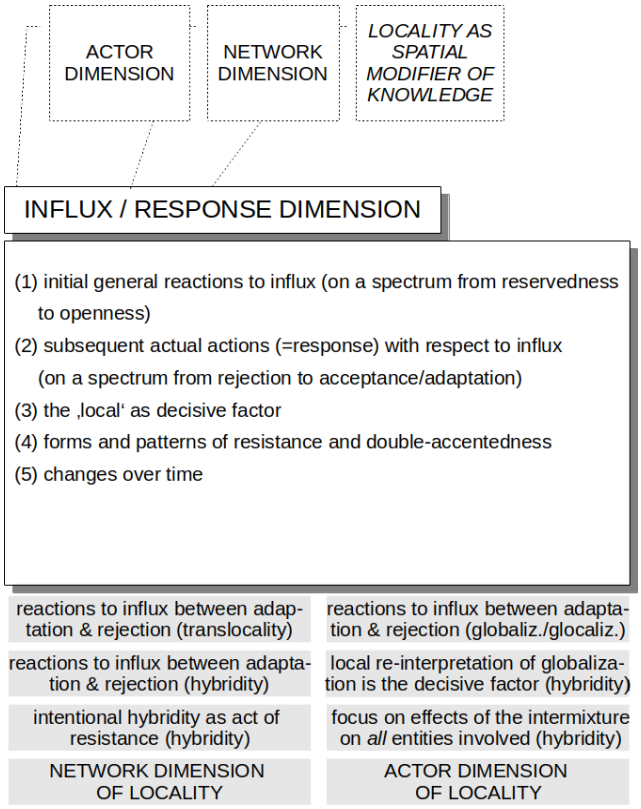

Illustration 60: Concept of the influx/response dimension of locality

Problem/Issue addressed: The influx/response dimension is pivotal in conceptualizing locality as an 'entity' that is able to 'identify' external influences, to process and to react to them in its specific way, either with some degree of integration and adaption or, alternatively, of rejection and exclusion. Conceptualizing 'locality' without taking account of this dynamic system of influx/response would amount to reducing it to something that is either completely cut and shielded off from external influences (which is to be considered unrealistic) or, at the other extreme of the scale, something that tends to be fully inundated by whatever enters the locality in question, given that no form of discerning and structuring agency is attributed to locality.

Elements: The five elements encompassed in the concept of the influx/response dimension of locality focus on the various modes of reaction a given locality can display when confronted with outside influences.

The first element refers to the dichotomy of adaptation vs. rejection in the local reaction to new influences from the outside, thus reflecting key insights discussed in the context of translocality (chapter 6.3.2), globalization/glocalization (chapter 6.3.3) and hybridity (chapter 6.3.6). The element can express itself on a spectrum between reservedness, fueled by a felt threat to the locality's characteristics, and openness, often nourished by a renewed self-confidence that stems from value recently attributed to local cultures through their global spread. The second element is closely related to the first one and grounded in the same theoretical considerations listed above. It explores the actual actions and attitudes that follow from this initial, general reaction and can lead to either universalizing or particularizing tendencies. In the case of universalizing tendencies, external influx is accepted and/or adapted, leading to higher interconnectedness, mixture, hybridity and, consequently, increased overlaps. Particularizing tendencies, in contrast, result in a general resistance and a specific rejection of the influx, prompting a heightened overall fragmentation. The third element is based on the theory of globalization/glocalization (chapter 6.3.3) and underlines that despite the apparent greater impact of the global influx, the local is, eventually, the leading force in 'deciding' over adaptation or rejection of global imports. The global trends and dynamics are received and re-interpreted locally or, in other words, it is the local reality against which the external influx is selected, processed, assessed and, consequently, adapted and consumed or, alternatively, rejected. Such way, the local culture assigns meaning to global influences, giving the global a specific 'local flavor'. Building on the theory of hybridity, especially the 3rd stage of the debate (chapter 6.3.6), the forth element specifically draws the attention to patterns of resistance to what is interpreted as acts of external domination and underlines to control for effects of the intermixture on all entities involved. A special form of resistance to be taken into account is a double-accented language that allows counter-marking official versions and perspectives. The fifth element is inspired by practice-oriented methods and tool boxes[275] and addresses the relentlessness of the incoming external influx by adding a temporal perspective. It queries how the locality in question reacted to earlier influxes and whether there are any notable recent or earlier changes in the local response patterns.

Relations: With respect to the incoming relations ('adopted concepts'), the concept builds on four of the theoretical approaches described in chapter 6.3, namely on the

[275] For more information cf. footnote 241.

concept of translocality (chapter 6.3.2), the concept of globalization/glocalization (chapter 6.3.3), the concept of multi-sited ethnography (chapter 6.3.5) and the concept of hybridity (chapter 6.3.6). In addition, it is grounded on already established concepts, i.e. the concepts of the actor dimension of locality (chapter 7.3.2) and the network dimension of locality (chapter 7.3.3). In terms of the outgoing relations ('informed concepts'), the concept of the influx/response dimension of locality is crucial in informing the actor dimension of locality (chapter 7.3.2), the network dimension of locality (chapter 7.3.3) and, lastly, the overarching concept of analyzing locality (chapter 7.3).

7.3.5 Relevance dimension of locality (functional-symbolical)

The concept of the relevance dimension that focuses on the functional and symbolic aspects of locality reflects central theoretical advancements in the spatial debate of the last decades. As for the network dimension described in chapter 7.3.3 and the influx/response dimension outlined in chapter 7.3.4, the accustomed understanding of locality as a passive, immutable, singular and functionally (fairly) unambiguous container turned out to be too limited. It was unable to integrate the aspect of functional or symbolic relevance that people tend to attribute to localities they live in for a longer period of time. In fact, functional and symbolic aspects are not or very only marginally taken into account. In the above formulation, it is not only the aspect of 'relative functional unambiguity' that collides with more contemporary perspectives on spatiality, but also the complete omission of the symbolic dimension carrying the meanings and connotations residents and visitors attribute to their localities.

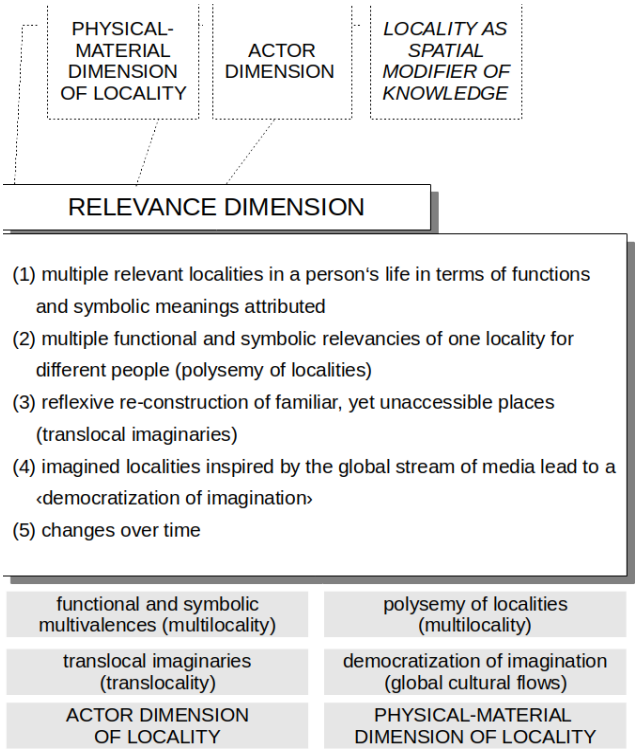

Illustration 61: Concept of the relevance dimension of locality

Instead of thinking of localities as having a (relatively) stable and determined set of functions for their inhabitants, more recent studies emphasized that – quite to the contrary – a locality's set of functions can not only easily change and adapt to the needs of the actors shaping it, but is also accompanied by a layer of corresponding symbolic

meanings attributed to the place in question. The actual changes in relevance can take place in the form of functions and symbolic layers being added, replaced or dropped altogether, whereby social agreement is only needed for functions and symbolic attributions that concern the entire group. Symbolic layers of locality that either concern personal imaginations or mental re-constructions of familiar places from the past in a new landscape are highly personal and therefore not in need of any broader consensus. Against this backdrop, it is no longer easily possible to establish a (relatively) comprehensive list of a locality's functions and symbolic layers as the personal ones resulting from mental reconstructions have a high probability of escaping conventional survey approaches.

Problem/Issue addressed: The relevance dimension of locality is significant in pointing out that localities have, on the one hand, multifarious functions and symbolic layers at all, an aspect hardly mentioned in the traditional understanding. On the other hand, it also underlines that these relevancies are not conclusively determined, but in continuous change as they result from ongoing social re-configurations. Conceptualizing locality without such a relevance-related element runs the risk of missing another dynamic characteristic that plays into the motivational structure as to why people remain in certain places or frequent them at certain times.

Elements: The five elements involved in the concept of the relevance dimension of locality specify the ways and modes of functional and symbolic interconnectedness.

The first element is founded in the theory of multilocality (chapter 6.3.1) and establishes that people often have multiple relevant localities in their lives that fulfill specific functions and carry specific symbolic meanings, contradicting the old-standing assumption that on the overall people have one pertinent locality that represents their center of life. The second element – equally building on 'multilocality' (chapter 6.3.1) – covers the aspect of polysemy of localities by underlining that not only can people have multiple relevant, functionally and symbolically specified places in their lives (cf. first element) – likewise, places themselves can combine multiple relevancies, i.e. different people can attribute various functions and symbolic meanings to one and the same specific physical-material locality. The third element draws on the theory of translocality (chapter 6.3.2) and refers to an additional specific group of places, namely intermittently inaccessible localities (mostly) from the past that are reflexively re-constructed in a new locality by means of translocal imaginaries. This form of symbolic attribution is mostly found with people that were forced to leave their localities of origin and is fueled by a desire to create meaning through affiliation in an unfamiliar environment. The forth ele-

ment builds on Appadurai's 'global cultural flows' discussed in chapter 6.3.4 and is related to the third element. It underlines that next to arising in situations of displacement, symbolic attributions such as imagined localities can also directly result from the sheer access to the ceaseless stream of media importing countless images and narratives from all over the world. Once such access is established and maintained, the ongoing flow of media facilitates a number of interlinked processes. On the one hand, it allows for viewing other people over big distances and for forming first opinions. Moreover, given the medial role models, the constant flow of media also encourages recurring to imagination as a personal activity to create new identities and dream dreams that were previously unattainable. As such, the so-called 'mediascape' described by Appadurai allows for the symbolic constitution of multiple localities, if not worlds, by imagination. The fifth element goes back to practice-oriented methods and tool box from development cooperation[276] and refers to the temporal dimension, examining whether there were any recent changes in the set of functionalities and symbolic layers of a given locality.

Relations: In terms of the incoming relations ('adopted concepts'), the concept of the relevance dimension of locality builds on a number of theoretical approaches on spatiality described in chapter 6.3, namely on the concept of multilocality (chapter 6.3.1), the concept of translocality (chapter 6.3.2) and the concept of global cultural flows (chapter 6.3.4). Furthermore, it is grounded on concepts of locality already elaborated, namely the concepts of the physical-material dimension of locality (chapter 7.3.1) and the actor dimension of locality (chapter 7.3.2). In terms of the outgoing relations ('informed concepts'), the concept of the relevance dimension of locality directly informs the overarching concept of analyzing locality itself (chapter 7.3), next to also grounding the physical-material dimension of locality (chapter 7.3.1) and the actor dimension of locality (chapter 7.3.2).

[276] For more information cf. footnote 241.

7.4 Concept of reflexive understanding

> "Seldom, very seldom, does complete truth
> belong to any human disclosure; seldom
> can it happen that something is not a
> little disguised, or a little mistaken."
>
> Austen (1983:971)

In contrast to the preceding concepts of 'analyzing knowledge' (chap. 7.2) and of 'analyzing locality' (chap. 7.3) that are central to this research, the concept of reflexive understanding is elaborated only along general lines. This is in accordance with the initial decision to invest in this project in the first place in clarifying the factual dimension. This implied establishing a solid basis for the analysis of the two terms constituting the composite term *local knowledge*, i.e. 'knowledge' and 'locality'. Having said that, I consider it at the same time paramount to adopt a reflexive mindset as general attitude when engaging in local knowledge matters (cf. chapter 1.3.2). This led me to integrating a generalized notion of 'understanding' into the framework approach as a reflexive layer to take account of a range of factors external and internal to the person interacting with local knowledge that color, influence and potentially distort his/her process of 'understanding'.

In terms of the procedure applied in developing the notion of 'understanding', the literature analysis on 'knowledge' served a second purpose, namely to also identify general characteristics, so-called 'dimensions', for 'understanding' – a procedure I consider adequate in view of 'understanding's' auxiliary function in this project and the semantic closeness of the two terms (for a more detailed account cf. chapter 1.3.2). Anticipating the result, the literature analyses led to the identification of three interrelated basic dimensions of understanding (as anticipatorily listed in chapter 4.4.3) that characterize 'understanding' in very broad terms and that should be applicable to all situations. For the sake of clarity, I briefly recapitulate these three dimensions of understanding in table 7 together with the related key questions.

Dimensions of understanding	Key questions
1. dimension of the uncertainty of gaining an adequate understanding	1. Does the research or development initiative in question show any awareness of the inherent uncertainty related to attempting to understand unfamiliar knowledge environments? Is there an awareness of the epistemological complexity of the undertaking and the possibility of failing to reach an adequate understanding?
2. dimension of structural and organizational constraints influencing understanding	2. Are there any biases resulting from external factors such as structural and organizational constraints and if so, what are they and how can their influence be assessed in the overall picture?
3. dimension of personal biases influencing understanding	3. Are there any biases resulting from factors internal to the subject involved in the research or development project and if so, what are they and how can their influence be assessed in the overall picture?

Table 7: Relationship between the dimensions of understanding and the related key questions

Against the backdrop of the above listed dimensions of understanding, I elaborate in chapters 7.4.1–7.4.3 the three concepts of understanding constituting the overarching concept of reflexive understanding. These three interrelated concepts serve to characterize 'understanding' in a generalized matter and underline the most fundamental characteristics. The concepts are described in the following sequence: In chapter 7.4.1, I start by outlining the concept of the uncertainty of gaining an adequate understanding and continue in chapter 7.4.2 with the concept of structural and organizational constraints influencing understanding before closing with the concept of personal biases influencing understanding (chapter 7.4.3). These three concepts of reflexive understanding and interrelationships are shown in illustration 62:

In methodological terms, I again apply the approach introduced by Deleuze et al. (1994) for elaborating these three concepts in a structured and transparent way (cf. a detailed description of the methodology in chapter 7.1). According to them, each concepts needs to be characterized along three lines or key questions that I reiterate here for reasons of clarity:

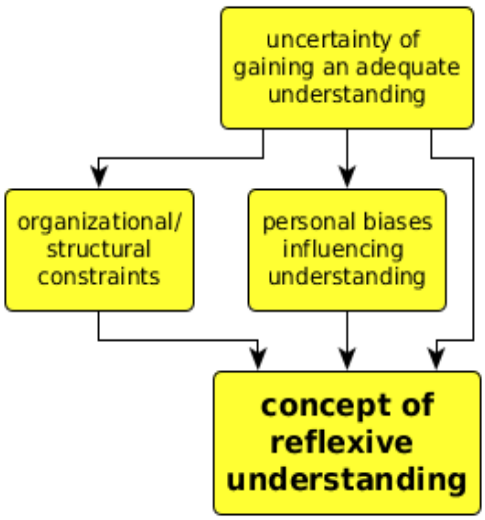

Illustration 62: The three concepts of understanding and their interrelations

1. ***Problem/Issue addressed:*** What is the problem addressed by the concept? What substantial aspect(s) would be missing in the overall framework if the concept was left out altogether?
2. ***Elements:*** What are the elements constituting and characterizing the concept?
3. ***Relations:*** What are the relations of the concept with other concepts – in two respects: a) What is the concept informed by (so-called 'incoming relations') and b) What other concepts does the concept in question inform subsequently (so-called 'outgoing relations')?[277]

7.4.1 Concept of the uncertainty of gaining an adequate understanding

The concept of the uncertainty of gaining an adequate understanding when dealing with local knowledge describes the frame conditions that underlie all human communication, but which are especially pronounced in cross-epistemological contexts. It informs researchers and practitioners that gaining an adequate understanding of a given local context is neither a straightforward, nor a guaranteed undertaking, given the numerous potential cross-epistemological barriers that may impede the formation of such an understanding. The concept underlines that any understanding reached in local knowledge contexts should be viewed as preliminary and should be taken for what it is – an attempt at comprehending an unfamiliar situation from an etic point of view.

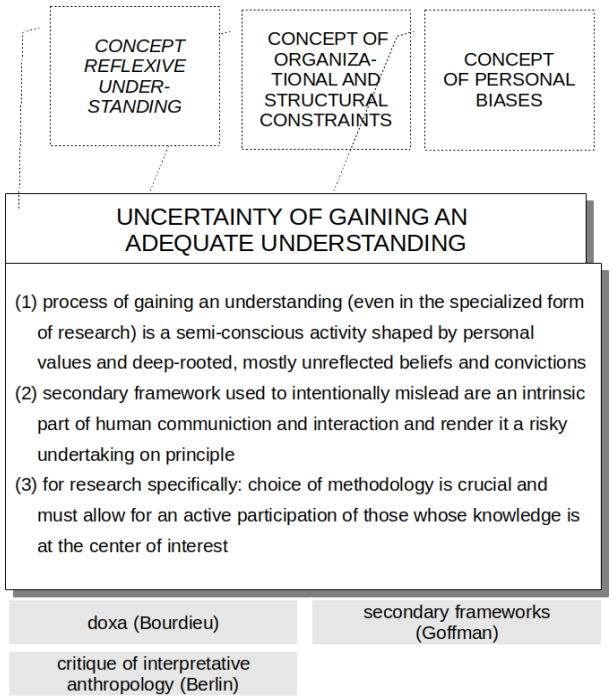

Illustration 63: Concept of the uncertainty of gaining an adequate understanding

Problem/Issue addressed: The concept of the uncertainty of gaining an adequate understanding has the function of pointing to the potential limits of one's processes of per-

[277] In terms of structuring the incoming and outgoing relations of a concept, I choose the following notation described in chapter 7.1.3: Theoretical inputs adopted from 'outside', i.e. from the respective academic literature outlined in the literature reviews in chapters 5 and 6, are written in lower case (e.g. 'multi-sited ethnography') while concepts developed in the frame of this research are written in capital letters (e.g. 'CONCEPT OF THE NETWORK DIMENSION OF LOCALITY'). While it can be argued that the latter are initially also grounded in the literature reviews on 'knowledge' and 'locality', I opt for this distinction as it facilitates the understanding and transparency of how the framework was construed.

ceiving, processing and interpreting situations. The latter are even more challenged in cross-epistemological contexts, given the absence of reliably shared mental models to make sense of reality. If a discussion on the workings of 'understanding' lacked this dimension, it would run the risk of overlooking that understanding does not happen readily and naturally. Thus, this element underlines that local realities can very well be misinterpreted and conclusions and findings be premature, which is problematic as in leads to a distorted representation and notion of the local reality, the consequences of which can be detrimental.

Elements: The three elements characterizing the concept of the uncertainty of gaining an adequate understanding describe various facets of the challenges potentially related to making sense of unfamiliar contexts. The first element is inspired by Bourdieu's concept of 'reflexivity' (understood as a means to arrive at unadulterated insights into the actual object of study) (cf. chapter 5.3.3.3). Building on his tenet that human actions are largely rooted in 'doxa' (understood as elementary, deep-founded beliefs, values and principles of classification, taken as unquestionable universals), the element underlines that in view of their omnipresence, any attempt at gaining an understanding of unfamiliar contexts is to a significant degree a semi-conscious activity that must not be taken for granted, but rather scrutinized for potential internal and external biases.[278]

The second element builds on Goffman's notion of 'social frameworks', which represent an intrinsic part of human interaction. More specifically, the element refers to the subtype of so-called 'secondary frameworks' that are intentionally used to mislead such as, in Goffman's terminology, 'modulations' and 'keyings' (cf. chapter 5.3.2.2) that represent a threat to the normality assumption. The element stresses that applying interpretative frameworks is a risky undertaking in itself and can lead to fundamentally misinterpreting situations, thus underlining that any understanding achieved remains on principle uncertain, all the more so in cross-epistemological contexts.

Against the backdrop of first two elements describing the fundamental uncertainty related to the process of gaining an understanding, the third element details a specific constellation in and for research. It takes up Berlin's critique of the methodology applied in interpretative anthropology (cf. chapter 5.4.3.1) and underlines the impossibility of gaining an understanding of the innate cognitive structures and the emic organization of local knowledge if one is equipped with an unsuitable conceptual-analytical lens. Thus, it underlines that understanding is contingent on choosing the appropriate

[278] In Bourdieu's understanding, this also applies to the professionalized domain of scientific research.

methodological approach, which, among others, entails for local contexts allocating a central role to the local perspective throughout the whole process.

Relations: With respect to the incoming relations ('adopted concepts'), the concept is informed by Bourdieu's theory of 'reflexivity' and, specifically, by his notion of 'doxa' (cf. chapter 5.3.3.3), by Goffman's concept of 'secondary frameworks' (cf. chapter 5.3.2.2) and, lastly, by Berlin's critique of the methodology underlying interpretative anthropology (cf. chapter 5.4.3.1). In terms of the outgoing relations ('informed concepts'), the concept informs all three concepts of understanding, given that it covers the fundamental category of uncertainty inherent to all attempts at understanding. This includes the overarching concept of reflexive understanding (chapter 7.4), the concept of structural and organizational constraints influencing 'understanding (cf. chapter 7.4.2) and the concept of personal biases influencing understanding (cf. chapter 7.4.3).

7.4.2 Concept of structural and organizational constraints influencing understanding

The concept of structural and organizational constraints influencing understanding is the first of two concepts that specifically address the role and influence of the persons involved, here with respect to the effects of internalized structural and organizational constraints that guide one's perspective on reality and, consequently, one's actions. There exists two main types of constraints – organizational ones that result from the organizational agenda and setting and structural ones that stem from one's professional background and cover the mental models and methods internalized during one's training or studies.

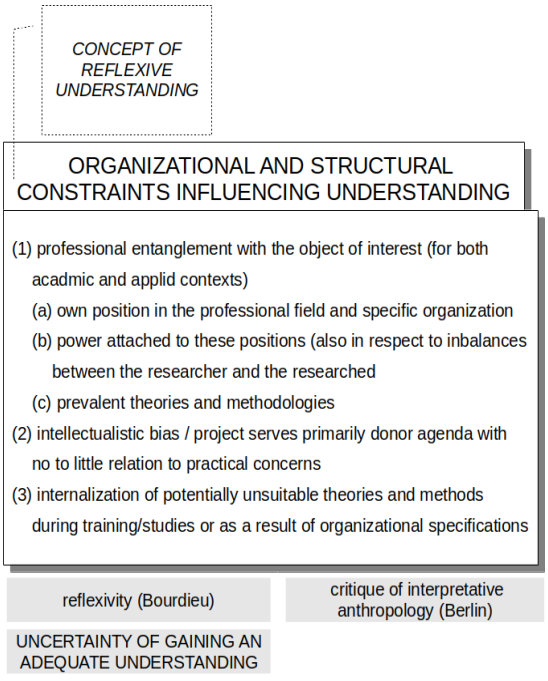

Illustration 64: Concept of structural and organizational constraints influencing understanding

Problem/Issue addressed: The concept of structural and organizational constraints covers a rather rarely addressed factor that bears a significant influence on how research and development projects are carried out and insights and findings are generated. If discussing 'understanding' abstained from integrating this significant aspect, it would lack a reflexive layer that provides minimal guidance in critically assessing the

ways in which the actual approach might already have contributed to determining the process and, thus, the outcome of the project in question.

Elements: The concept of structural and organizational constraints consists of two elements. The first element is founded on Bourdieu's call for critically scrutinizing one's own research activities[279] as formulated in the frame of his theory on 'reflexivity' (cf. chapter 5.3.3.3). It discusses the need for a close examination of potential biases and constraints that might result from the so-called 'professional entanglement' with the research object in question. It stems from one's professional training and related mental model and from constraints related to one's organizational background and specific setting. These factors consequently prestructure the perception of reality and the ensuing research practice. Against this backdrop, this element addresses the need to critically examine one's professional relationship with the research object. Recurring to Bourdieu, this includes two dimensions specifically that are both covered in this element. On the one hand, it entails the need to analyze one's own position in the professional field, the power attached to it[280] and, in addition, one's position in the organization one is affiliated. Additional attention needs to be paid to underlying and pre-structuring patterns and structures in the institution in question such as preferences for specific theories, discourses and methodologies that are considered especially suitable or worthy of further attention.

On the other hand, it stresses the need to look out for what Bourdieu calls an 'intellectualistic bias' or, in other words, an (often unconscious) primary focus on constructs and discourses that have little practical application, but are used to advance the academic discourse itself. They, however, also shape and determine the conceptual-analytical lens through which the world is studied, not necessarily providing a suitable perspective. In addition and complimenting the above, the element also emphasizes the importance of opting for theories and constructs that are grounded in a practical understanding and therefore can potentially provide approaches to tackling practical issues.

The second element elaborates on the aspect of the influence of underlying inner structures. It is inspired by Berlin's critique of the interpretative approaches in anthropology (cf. chapter 5.4.3.1), which in his view too heavily rely on intuition and lead to non-verifiable research findings of questionable reliability. In this light, the element emphasizes the considerable influence – and potential detrimental effects – of methodological schemes or approaches internalized during the academic or professional training.

[279] While Bourdieu only discusses the field of academia, I deem his considerations to equally apply to the broader field of applied development studies as well as to concrete development interventions.

[280] This also covers the topic of potential power imbalances between the researcher and the subjects researched.

These schemes tend to provide a basic guidance in making sense of the world, thereby de facto pre-structuring and informing one's research or work practice. Against this backdrop, the element addresses not only the importance of opting for methods that allow for clarity and transparency, but also the need to pay close attention to constraints potentially unnecessarily limiting one's perspective – regardless of whether these constraints were acquired through one's professional training or result from a specific institutional setting.

Relations: With respect to the incoming relations ('adopted concepts'), the concept of structural and organizational constraints influencing understanding builds on Bourdieu's concepts of 'reflexivity' and 'doxa' specifically (chapter 5.3.3.3) and on Berlin's critique of interpretative anthropology (chapter 5.4.3.1), in addition to being informed by the concept of the uncertainty of gaining an adequate understanding (chapter 7.4.1). In terms of the outgoing relations ('informed concepts'), it informs the overarching concept of reflexive understanding (chapter 7.4).

7.4.3 Concept of personal biases influencing understanding

The concept of personal biases influencing understanding complements the preceding concept 7.4.2 in drawing the attention to factors influencing one's perspective on the world, this time with respect to personal biases of the individuals involved in research or development projects tackling local knowledge issues.

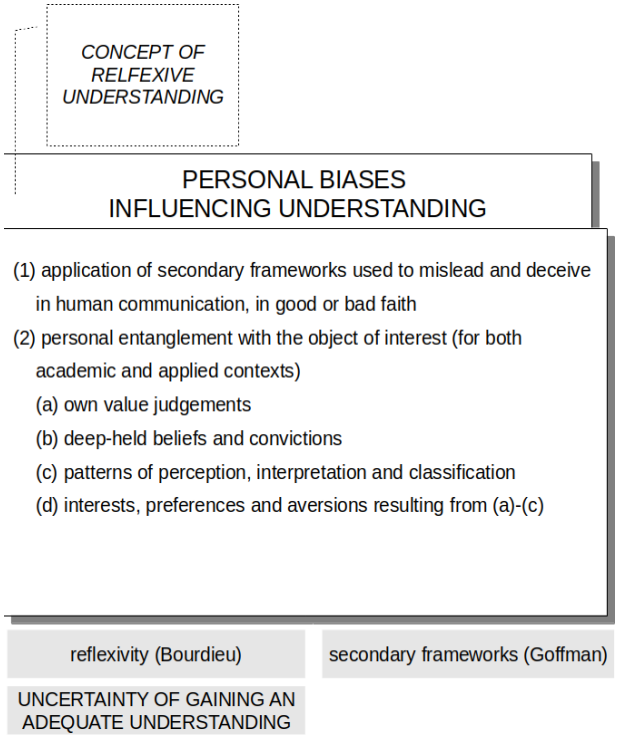

Illustration 65: Concept of personal biases influencing understanding

Problem/Issue addressed: The concept highlights the second type of potential limitations directly linked to the people involved in dealing with local knowledge matters. It entails the domain of personal inclinations, preferences and aversions that steer one's individual way of framing and interpreting reality and, in consequence, of acting in the world, be it in the role of a researcher or a development practitioner.

If a discussion on ‘understanding’ missed integrating the aspect of personal biases, it would exclude the central human factor involved in the formation of said understanding, namely the actor with his/her individual background. Unlike the institutional and professional constraints discussed above, personal biases constitute much earlier during one’s life and therefore remain largely unconscious if no particular attention is paid to them. Thus, integrating the actors’ personal perspective is all the more advisable, given that the framework engages in building bridges across epistemologies, which is in itself an undertaking with an uncertain outcome that requires an awareness of all sorts of factors that potentially bear an influence on how unfamiliar contexts are perceived and interpreted.

Elements: The concept of personal biases consists of two elements. The first element is inspired by Goffman’s notion of ‘social frameworks’ that according to him are learned and embodied during socialization. Social frameworks also include so-called ‘secondary frameworks’, which are central for this element (cf. chapter 5.3.2.2). They are applied in social interactions to intentionally mislead or deceive, in good or bad faith. Goffman underlines that given their early formation, they remain, at least to a certain extent, unconscious and what he refers to as a mainly ‘bodily experience’. This, in turn, renders them potentially more influential und underlines the need to control for these influences, to the greatest extent possible.

The second element builds on the proposition formulated by Bourdieu in his research on ‘reflexivity’ (cf. chapter 5.3.3.3) to engage in critically examining one’s ‘personal entanglement’ with the research object in question as part what he calls a ‘full objectivation’. Such an entanglement stems from one’s social background and upbringing and is deep-rooted. Next to value judgments and deep-held beliefs and convictions, it includes the specific way of thinking and the respective patterns of perception, interpretation and classification. These in turn determine one’s individual perspective and specific interests, preferences and aversions, in addition to the inner structures and biases that result from professional or institutional contexts (cf. chapter 7.4.2). Against this backdrop, this element stresses the need to closely observe oneself in one’s way of doing research or, alternatively, designing and implementing development projects with a distinct emphasis on the unintended transfer of all kinds of personal constraints and biases.

3. ***Relations:*** With respect to the incoming relations (‘adopted concepts’), the concept of personal biases builds on Goffman’s notion of ‘secondary frameworks’ applied in human interactions to deceive and mislead, in good or in bad faith (chapter 5.3.2.2) and

on the concept of ‘reflexivity’ proposed by Bourdieu (chapter 5.3.3.3), more precisely on his call for scrutinizing one’s ‘personal entanglement’ with the research topic. Furthermore, it is informed by the concept of the uncertainty of gaining an adequate understanding (chapter 7.4.1), given the comprehensive and fundamental character of the latter. In terms of the outgoing relations (‘informed concepts’), it informs the overarching concept of reflexive understanding (cf. Chapter 7.4).

7.5 Framework for understanding local knowledge

After having discussed the concepts of 'analyzing knowledge', 'analyzing locality' and 'reflexive understanding', this chapter focuses on the framework itself and on the advantages resulting from the approach chosen, namely from the combination of the three notions of knowledge, locality and understanding into one single framework for understanding local knowledge. I first present the framework approach in its aggregated form (chapter 7.5.1) before analyzing the ways in which the modifying and auxiliary terms of 'locality' and 'understanding' specify the concept of 'knowledge' (chapters 7.5.2 and 7.5.3), thereby contributing to providing a comprehensive and balanced perspective on the topic of 'understanding local knowledge'.

7.5.1 The aggregated framework approach

Recapitulating the steps of the framework development, I started with identifying three sets of dimensions in the interdisciplinary body of academic and applied literature selected for this project that saliently characterize the central notions of this research, namely 'knowledge', 'locality' and 'understanding'. This resulted in three sets of dimensions, as anticipatorily listed in chapters 4.4.1–4.4.3 and recapitulated in illustration 66.

On the basis of these sets of dimensions and recurring to the methodology introduced by Jabareen (2009), Dowding (2001) and Stanley (2012) for the development of conceptual-analytical frameworks (cf. chapter 7.1.2), I proceeded to elaborate the concepts constituting the framework, namely the twelve concepts of knowledge (chapter 7.2), the five concepts of locality (chapter 7.3) and three concepts of understanding (chapter 7.4), as aggregated in illustration 67.

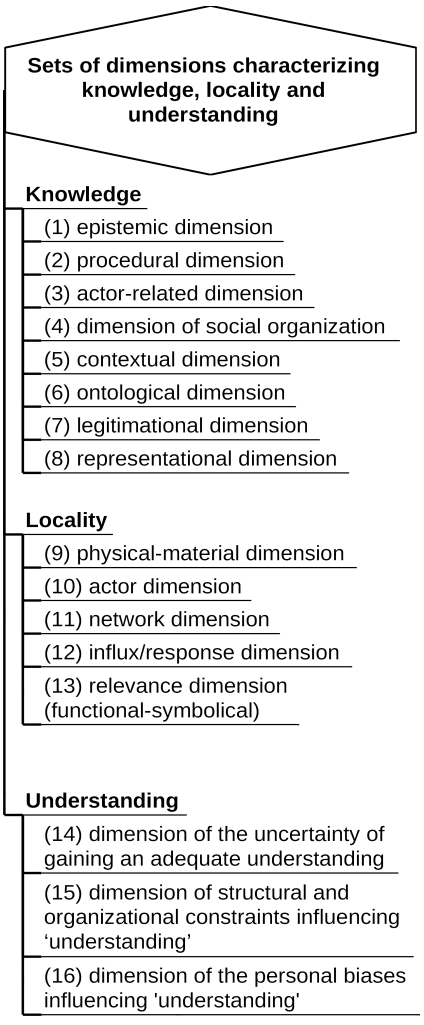

Illustration 66: Sets of dimensions characterizing knowledge, locality and understanding

This process entailed two steps: On the one hand, it included establishing the relations among the concepts of the same type, i.e. among the concepts of knowledge, locality and understanding. This step was crucial in defining how the concepts build and depend on each other, thus determining the inner structure of the framework sections (cf. chapter 7.1.2 for the methodology applied). It led to three sets of internally structured, overarching concepts for ‘knowledge’, ‘locality’ and ‘understanding’, as displayed in illustrations 68–70. In the case of the notion of ‘understanding’, the structure is still relatively straightforward (cf. Illustration 68), while the internal structure of the overarching concept of locality is more intertwined (cf. illustration 69):

Concepts of knowledge, locality and understanding

Knowledge
- (1) knowledge content
- (2) knowledge processes
- (3) structural aspects of knowledge
- (4) social aspects of knowledge
- (5) knowledge legitimation
- (6) knowledge sources
- (7) accepted knowledge
- (8) knowledge holders
- (9) life-world of the knowledge holders
- (10) access to accepted knowledge
- (11) generation of knowledge
- (12) accepted knowledge

Locality
- (9) physical-material dimension
- (10) actor dimension
- (11) network dimension
- (12) influx/response dimension
- (13) relevance dimension (functional-symbolical)

Understanding
- (14) uncertainty of gaining an adequate understanding
- (15) structural and organizational constraints influencing ‘understanding’
- (16) personal biases influencing 'understanding'

Illustration 67: Concepts constituting the framework approach

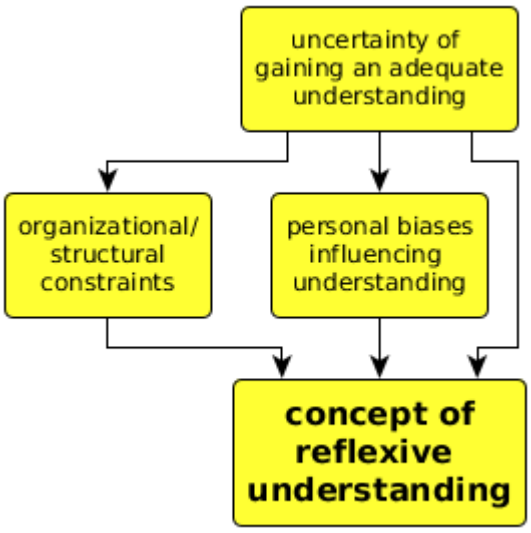

Illustration 68: Interrelations between the concepts of understanding

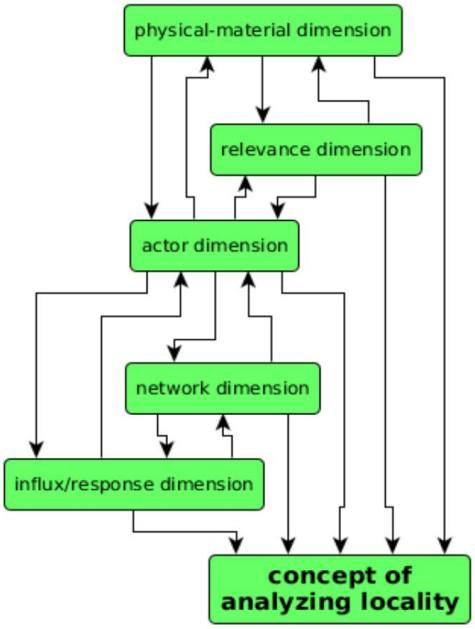

Illustration 69: Interrelations between the concepts of locality

The structure displaying the interrelations for the term ‘knowledge’ demonstrates even more complexity, which is not too surprising, given that the long-standing debate in applied and academic contexts provided ample material for informing the main term of this project (cf. illustration 70):

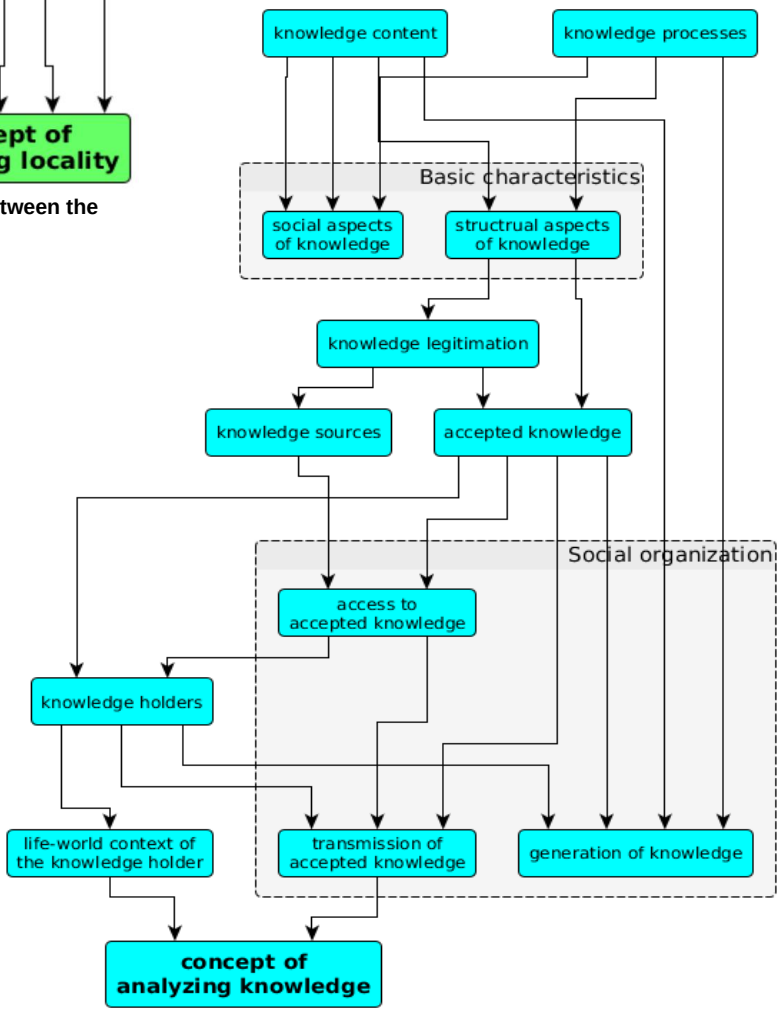

Illustration 70: Interrelations between the concepts of knowledge

On the other hand, the development of the framework also included construing the concepts such that they are solidly informed by and grounded in the literature consulted. The manifold relations between theoretical constructs from the literature and the concepts they inform also entered the framework, resulting in a complex overall structure as shown in the following overview illustration 71:

This page is intentionally left blank.

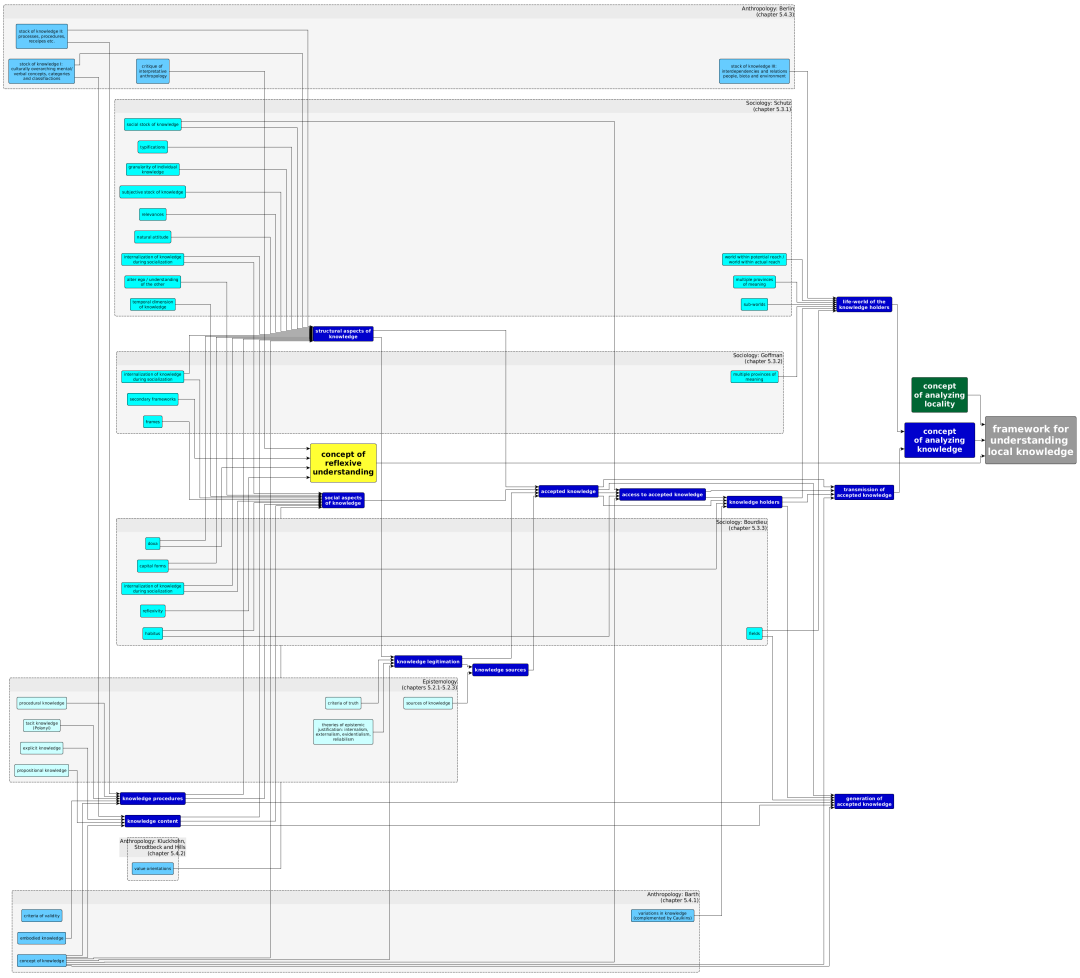

Illustration 71: Framework for understanding local knowledge

Illustration 71 is additionally uploaded to the open data repository Zenodo and can be found under https://doi.org/10.5281/zenodo.7526296

This page is intentionally left blank.

7.5.2 Specification of the framework by the modifying term ‘locality’

First, I condense the main insights from the debate on ‘locality’ with respect to how they modify the main term of ‘knowledge’ in general. *Second* and zooming in, I analyze the specific ways how this modification takes place by relating the overarching concept of ‘locality’, more specifically the five dimensions constituting it, to the twelve concepts of ‘knowledge’ to discuss their interplay.

General comments on modifying ‘knowledge’ with ‘locality’

Analyzing ‘locality’ in its function as modifier of ‘knowledge’ serves the purpose of emphasizing the significance of the spatial dimension, and of locality in particular, for initiatives that engage with knowledge types generally referred to as ‘local’, ‘traditional’ or ‘indigenous’, to only name the most frequently used terms. All these knowledge types share the common characteristic of representing localized forms of knowledge, i.e. types that are highly adapted to the local environment and evolved along with it, often over generations, which significantly contributed to the multitude of diverse forms still existing today. They all represent specific responses to the local environment and specific adaptations to and expressions of the place in question. On the basis of the argument that everything is somewhere localized, knowledge forms could be seen as intrinsically linked to their environment and at the same time reflecting it. As such, the spatial dimension can be considered the lowest common denominator overarching the multitude of localized knowledge forms covering the world and ranging from Amazonia to the Arctic.

Given the pervasive role of the spatial dimension in ‘non-scientific knowledge types’ (for the sake of a better word), I consider opting for specifying knowledge in regard to ‘locality’ to be a pertinent and promising approach. As a first consequence, the term’s broadness would allow integrating basically all ‘non-scientific’ knowledge forms and, thus, allow upholding the claim to elaborate a framework for potentially all forms of what I refer to as ‘local knowledge’ in this project.

Importantly, however, I understand and conceptualize ‘local’ in this project as ecological *and* cultural situatedness, building on the complex concept of place and space discussed in the contemporary spatial debate (cf. chapter 6). Thus, in my understanding, ‘local’ does not only refer to a defined, relatively limited location – as the notion is often used –, but opens up a much more complex and encompassing perspective on the spatial dimension. Among others, it also takes account of the social relations shaping

the space and integrates factors such as migration, multilocatedness and the influence of media on the spatial configuration.

In fact, choosing to specify knowledge with respect to the spatial dimension allowed me to take advantage of the extensive interdisciplinary debate of the last decades, the main insights of which I condense with respect to their contributions to modifying ‘knowledge’. A literature analysis that the notion of ‘locality’ has evolved into a polyvalent concept. In contrast to earlier notions that understood ‘locality’ as a static container enclosing knowledge forms, cultures and entire groups of people in a specific, delimited and unchanging physical territory, contemporary notions account for the variability and complexity inherent to the spatial dimension.

In fact, spatial notions are nowadays seen as amounting to relational and/or contextual categories, in addition to being spatially defined through their characteristic physical properties. They came to be understood as a metaphor for a social space or as a form of social enterprise under given physical-material conditions (geographical location, soil type/quality, precipitation rates etc.). The emphasis was set on the social conditionalities of localities; consequently, they were characterized as a form of meeting place where something occurs as a result of the interweaving of relationships, connections and translocal movements.

In this process, the actual material, physical space is not denied existence nor relevance. Rather, it is complemented by the subjects’ socially and culturally shaped mental perceptions and constructions of space. It is an interrelationship: On the one hand, social relations are significantly spatially organized with the spatial structuring bearing a major influence on issues of power and domination. On the other hand, localities are seen as socially constituted and permanently up to re-negotiation; this renders them fragile social achievements in need of preservation against other localities through deliberate social practices of performance and representation such as e.g. rituals or traditions.

In addition, technological innovations of the postmodern era, foremost social media and the internet, have further diluted the concrete, physical place-boundedness of social interactions in that people no longer need to be physically familiar with specific places on the globe for being able to interact. Rather, the contributing actors can be spatially dispersed or even no longer be human, but technological as in the case of virtual worlds created by online games. Thus, under the conditions of such a technologically enabling post-modernity, the assumption of unified local and social boundaries turned out to be problematic. Correspondingly, it was understood that (a) social relationships are able to

surpass the borders of nation states, (b) identities do not need a reference to a concrete place for their construction and (c) communities can form based on social networks as starting point en lieu of a shared physical locality.

Summing up the above, locality is nowadays no longer seen as a static geographical locale, but as a form of ongoing complex social configuration characterized by the permanent negotiation and (re-)construction of space. In regard to this project, the notion's broadness and complexity render it particularly suitable for modifying the notion of knowledge towards localized forms of knowledge. In the following, I briefly describe how this is expressed at the level of the heuristic itself.

Relating 'locality' to the concepts of knowledge

In terms of analyzing the specific 'localization' of the notion 'knowledge' by means of its modifier 'locality', I propose to relate the overarching notion of 'locality' to the individual dimensions of knowledge and to discuss the resulting effects, namely which of the five concepts of locality constituting the overarching notion of 'locality' have in fact an influence on the concepts of knowledge. I consider such an approach to be pertinent on the basis of the argument that a modification takes place as soon as one of the five concepts of 'locality' influences one of the concepts of knowledge. In other words, I do not deem it necessary for *all* five concepts of locality to have an effect on a given individual concept of knowledge for it to be spatially modified in the sense of this project. Having said that I analyze in the following the influence of 'locality' on each of the twelve concepts of knowledge and sketch the main interrelations.[281]

An analysis of the influence on the first concept of knowledge, the concept of the knowledge content, shows that at least four concepts of locality contribute to its specification: The *physical-material dimension* determines what kind of knowledge items are present in the first place and thus available for interaction; it includes tangible and crucial elements such as the local animal and plant life, the topography of the landscape or local precipitation levels determining the availability of water. In a similar vein, the *actor dimension* of locality underlines the relevance of the range of the living and non-living actors for the elaboration of the knowledge content; in other words, the content-related knowledge body considered locally relevant is heavily influenced by the humans present, but also by the existence of artifacts such as education and health facilities or modern communication devices. The concept of knowledge content is also

[281] Given the diversity of existing local knowledge forms and the myriad of local constellations influencing the respective knowledge bodies, I assume there must be cases in which additional interrelations exist, i.e. in which the locality in question influences 'knowledge' in ways not described in the following. In fact, to keep the argument clear, I limit myself to describing the most formative ones.

highly likely dependent upon the *network dimension* of locality; it describes whether a given locality finds itself in a network, which allows for more access to diverse knowledge contents or whether networks are rather poorly developed, which in turn leads to a situation where the specific knowledge content can be expected to be rather homogeneous and specific to the place in question. Related to this, the knowledge content prevalent in a given place also depends on the *influx/response dimension*, i.e. on whether the locality in question generally tends towards integrating and adapting new influences from the outside, which leads to an increase in knowledge content, or whether such an influx is rather rejected, which in turn leads to a rather stable knowledge basis. Lastly, the *relevance dimension* of locality has an impact on the concept of the content of knowledge in determining functional and symbolic levels of meaning prevalent in the locality in question; these layers of meaning in turn determine what kind of knowledge content is considered deserving closer attention.

The various influences of 'locality' on the concept of the knowledge processes are very similar to the ones described for the concept of knowledge content with all five dimensions of locality modifying the concept. More precisely, the *physical-material dimension* determines what kind of actions and interactions are by all means possible. Similarly, the *actor dimension* of locality specifies the potential range of knowledge-related processes and procedures against the backdrop of the central entities (living and non-living) that shape the course of events and thereby also the possibilities for action. The influence of the *network dimension* and the *influx/response dimension* on the concept of knowledge processes entails in both cases the question of how much a given locality is part of an overarching knowledge network and to what extent new influx is welcomed and adapted or, respectively, rejected. In both cases, the locality's reaction determines whether procedural aspects of knowledge tend to be revised and complemented or whether the locality's procedural knowledge basis is preferably kept stable. Lastly, the concept of knowledge processes is also modified by the *relevance dimension* of locality in that the latter can shape the way how things are being done in the concrete local context.

The concept of the structural aspects of knowledge is specified by two of the concepts of locality. The *actor dimension* is influential in providing an understanding not only of the specific community, the actual knowledge holders and the characteristics of their individual knowledge body, but also of potential artifacts involved in processes of knowledge retention and transmission and significant for understanding the 'knowledge landscape'. The *relevance dimension* determines what kind of knowledge is considered providing additional functional and/or symbolic value.

The concept of the social aspects of knowledge is modified by all the five concepts of locality. The *physical-material dimension* determines the specific environment one grows up and upon which one's primary knowledge base is built; in addition, this dimension matters to the process of forming and upholding a shared value base (e.g. through rituals at specific locations). The *actor dimension* of locality is topically close to the concept of knowledge and emphasizes the need for paying close attention to the representation of the spatial dimension in the overall social structure. The *network dimension* specifies the social aspects of knowledge by determining whether a given locality considers interconnectedness with other communities (and their knowledge) to be compatible with and part of their shared valued base. The *influx/response dimension* provides an idea on whether the locality can be expected to generally react rather openly or rather adversely to novel influences and change in general. Lastly, the *relevance dimension* specifies functional and symbolic connotations that matter locally on a fundamental level and can be expected to be transmitted during socialization, next to also being expressed in the shared value base.

As for the modifying effects of locality on the concept of knowledge legitimation, I consider four dimensions to be involved. The *actor dimension* is decisive in determining the range of living and non-living entities that have an influence on determining what is generally considered legitimate knowledge; this includes not only human actors with the social standing to provide certainty in legitimational issues, but also artifacts such as the sheer existence of e.g. a community health center in the locality in question. The *network dimension* of locality is essential for defining the locality's overall interconnectedness and thus, the range of potential ways of providing legitimation that are locally accepted; the *influx/response dimension* is thereby crucial in determining whether new perspectives in regard to knowledge legitimation are welcomed or rather rejected. Moreover and lastly, the *relevance dimension* of locality can potentially also contribute to limiting the range of potential ways of legitimating knowledge, in the first place through its functional and symbolic layers.

The concept of the knowledge sources is influenced by four concepts of locality. First, the *actor dimension* is decisive for determining what types of living and non-living actors are considered valid sources of knowledge. This includes on the one hand human actors that are attributed a position within the community that allows them to introduce new knowledge items (such as in the case of e.g. local curanderos proposing novel healing methods). It also includes artifacts such as medical centers, churches or educational institutions that not seldom come along with a specific way of knowledge legitimation. The *network* and *influx/response dimensions* of locality are influential in defin-

ing the potential range of knowledge source considered (assuming that more interconnectedness might correlate with a broader total range of sources) and the local willingness of potentially considering novel sources for knowledge generation. Lastly, the *relevance dimension* prestructures what types of knowledge sources might be considered at all, depending on the functional and/or symbolic meaning attached to the sources in question.

The concept of accepted knowledge is specified by 'locality' in four different ways. The *actor dimension* determines the group(s) that have the influence to legitimize parts of the local knowledge while excluding other parts from the official canon. In addition, it includes the influence of artifacts, foremost communication devices, on the social negotiation of what counts as accepted knowledge, potentially even allowing for interventions from outside the specific locality. The *network dimension* of locality provides an idea of whether interconnectedness with other knowledge perspectives represents a factor in the local process of knowledge legitimation. In a similar vein, the *influx/response dimension* gives an idea of whether novel items tend to be easily integrated into existing knowledge bodies or rather risk being classified as 'unorthodox'. Lastly, the *relevance dimension* points to functional preferences and important symbolic aggregates of meaning that need to be addressed by knowledge for it to turn into 'accepted knowledge'.

In terms of modifying the concept of the knowledge holders, the dimensions of locality bear an influence in three different ways. The *actor dimension* specifies the concept's overall notion by underlining that in distinct local contexts, not only human actors act as knowledge holders (although they represent the large majority), but potentially also artifacts such as e.g. local libraries and collections. The *network dimension* of locality determines the extent to which knowledge holders of a given place are connected to like-minded people outside their locality that share their specific interests and skill set. Complementing, the *influx/response dimension* provides an idea of the readiness and willingness of the knowledge holders to engage in partaking in such a network.

The concept of the life-world of the knowledge holders is informed by multiple concepts of locality. More precisely, the *physical-material dimension* of a locality determines the very basic features of a knowledge holders' life-world, i.e. the landscape structure, the natural resources present, precipitation levels, access to water etc. The *actor dimension* describes the actors relevant for a given locality, including living beings (people, plants and animals) and non-living beings that structure and shape the life-world (such as e.g. material artifacts, infrastructure, practices, ideas, stories etc.). The *network di-*

mension gives an indication of how connected the respective life-world is to other life-worlds surrounding it. In this respect, the *influx/response dimension* of locality specifies the extent to which a given life-world shows the tendency to actively embrace other life-worlds or whether such endeavors tend to be rejected. Lastly, the *relevance dimension* determines the functionalities and symbolic meanings attributed to a specific life-world.

In terms of influencing the concept of access to accepted knowledge, 'locality' does so in three ways. The *actor* dimension provides an idea about the individuals involved in the processes of granting or denying access to what is generally considered accepted knowledge. This not only describes the conditions that need to be met for somebody to be granted knowledge, but also addresses the issue of e.g. modern artifacts pre-structuring and, thus, shaping the access to certain parts of the knowledge body. The *network dimension* specifies whether the given degree of interconnectedness also bears an influence on whether outsiders are more easily granted access to knowledge. The *influx/response dimension* determines whether the negotiation on the question of access to accepted knowledge is likely to be influenced by factors that originated outside the community.

The influences of 'locality' on the concept of the generation of knowledge are manifold. The *physical-material dimension* is decisive in determining the potential knowledge that can be generated locally (assuming that the large majority of local knowledge involves the natural environment in some way or another). The *actor dimension* of locality points to the range of potential actors that engage in knowledge generation, in this case human beings. The *network dimension* of locality addresses the spatial interconnectedness of knowledge forms and the consequences resulting thereof while the *influx/response dimension* specifies the readiness of a given locality or place to adopt new influences. Lastly, the *relevance dimension* determines in what ways novel knowledge needs to provide functional benefits for tackling real world problems (functional relevance) and/or has to provide a form of symbolic meaning valued by the knowledge holders and their community (symbolic relevance).

The concept of the transmission of knowledge is influenced by all five dimensions of locality. The *physical-material dimension* of locality is relevant in providing the tangible basis for most of the knowledge content; thereby, especially its physical absence or complete disappearance can considerably restrict and limit knowledge transmission by impeding a solid grounding of knowledge content in the outer world[282]. The *actor di-*

[282] 'Physical absence' as seen from the perspective of people who do not live in their original local communities and, thereby, in their familiar natural environments. 'Complete disappearance' refers to those cases where the total destruction of an area (e.g. forest clearings, floodings, ecological disasters etc.) deprives the inhabitants of their formerly familiar natural environment, which also includes the local flora and fauna on which significant part of local

mension of locality determines the range of people to whom knowledge can be transmitted according to the local rules governing this process; in addition, the set of locally available artifacts such as e.g. mobile phones or computers provide an idea how especially the procedural side of knowledge transmission could be facilitated by integrating modern means of communication. The *network dimension* of locality gives an indication to the locality's degree of interconnectedness with other knowledge forms when it comes to the knowledge content transmitted and the ways this process occurs. Complementing this aspect, the *influx/response dimension* gives an idea of a locality's probability of integrating new knowledge content or modes of transmission. Lastly, the *relevance dimension* of a locality determines what kind of knowledge is locally considered to be of a functional and/or symbolic value to the degree that it is considered worth transmitting.

7.5.3 Specification of the framework by the auxiliary term 'understanding'

In parallel to the preceding chapter, I start by outlining the key insights from the debate on 'understanding' and discuss them in terms of their contributions to specifying 'knowledge', the main term of this research. In a second step, I describe the specific ways in which the auxiliary concept of 'understanding' modifies the twelve concepts of knowledge.

General comments on modifying 'knowledge' with 'understanding'

Discussing 'reflexive understanding' with respect to 'knowledge', even solely in the generalized manner of this project, serves the purpose of emphasizing its significance for projects that involve local knowledge matters. It additionally underlines the importance of paying attention not only to knowledge itself, but also to the ways it is comprehended. In contrast to the component of 'locality', the notion of 'understanding' was not attributed an individual literature analysis and, subsequently, the insights do not reflect the current state of the art of the academic debate, but entail broader, more general considerations regarding the interplay of 'understanding' and 'knowledge'.[283]

Against this backdrop, I made the following observations: While it can be expected that numerous academic and applied studies might benefit in general from critically reflecting on how specifically new knowledge is generated, it is especially pronounced in the case of projects that involve attempts at reaching a cross-epistemological understanding. There, it becomes apparent that understanding in the sense of successfully 'estab-

knowledge is founded.

[283] This is in line with the concept's overall role in the project (cf. chapter 1.3.2).

lishing bridges across epistemologies' is more likely to take place if two main conditions are met: First, the parties involved need to be aware of the fact that gaining an understanding is not guaranteed in itself, but is rather fundamentally uncertain for all humans, regardless of whether someone tries to make sense of an epistemologically familiar or unfamiliar context. It can therefore easily fail – all the more if the parties involved do not refrain from making their perspective into an absolute – and put the undertaking as a whole at risk (cf. the concept of the uncertainty of gaining an adequate understanding in chapter 7.4.1). Second, the likelihood for a successful co-construction of reality across epistemologies is significantly higher if the researchers or practitioners see themselves as part of the social world they are researching and thoroughly examine their relationship with the research object. This involves analyzing one's disposition with respect to external and internal influences and trying to manage them to the greatest extent possible. External influences result from structural and organizational constraints that are grounded in one's institutional background and setting (cf. the concept of structural and organizational constraints influencing understanding in chapter 7.4.2). Internal influences, in contrast, stem from beliefs, values and convictions internalized during early socialization (cf. the concept of personal biases influencing understanding in chapter 7.4.3).

In a nutshell, the integration of 'understanding' into the framework structure and thus the relation of 'understanding' to the main term 'knowledge' has a double benefit: On the one hand, it facilitates promoting the idea of the fundamental uncertainty inherent to attempts at cross-epistemological understanding. On the other hand, it advocates adopting a critical attitude towards one's own research practice and draws the attention to various internal and external influences that might unnecessarily shape and, potentially, distort the process and outcome of one's project.

In sum, I do not consider refraining from integrating 'understanding' into the overall approach a viable course of action. Not only would it leave the framework incomplete – it could even entail unintended consequences as the more graspable potential of the far more conceptualized notions of 'knowledge' and 'locality' could tempt one into overestimating the accuracy of the observations and perceptions made – and thereby the accuracy of one's perspective on a given local knowledge form. As matter of fact, I consider the comprehensively elaborated concepts of knowledge and locality to be in actual need of some form of accompanying reflexive layer to make sure that as valid as possible an approximation to local realities can be reached.

Relating ‘understanding’ to the concepts of knowledge

In contrast to ‘locality’, I refrain from separately relating the generalized concept of ‘understanding’ and its three components to the twelve concepts of ‘knowledge’ – for the simple reason that the three individual concepts of ‘understanding’ are intentionally construed such that they are expected to bear an overall generic relevance for all concepts of ‘knowledge’.

This compatibility is on the one hand linked to the semantic closeness of the two notions of ‘knowledge’ and ‘understanding’ discussed earlier, which facilitates a meaningful and straightforward relation of the two types of concepts. On the other hand and more importantly, if is founded on the initial decision to complement the central notion of ‘knowledge’ by the perspective on how this knowledge in fact constitutes, i.e. the processes of making sense and of actually comprehending the knowledge acquired. While such a cautious, reflexive approach to knowledge can potentially be advantageous for many forms of scientific research, I consider it to be vital in the context of projects that tackle cross-epistemological topics and aim at gaining a broad understanding of unfamiliar context where little own prior knowledge exists.

As such, the concepts of ‘understanding’ represent less of an in-depth analysis of the related academic debate or the intricacies of the workings of ‘understanding’ themselves. In fact, the three concepts are best characterized as a generalized guidance on how to contextualize any knowledge acquired in cross-epistemological contexts. As such, ‘knowledge’ is mediated in this project through the reflexive layer of ‘understanding’. This also explains why the three concepts have a similar influence on the complete set of concepts of knowledge, regardless of whether they tackle such varied matters as e.g. knowledge legitimation, generation or transmission.

In all cases, the twelve concepts of knowledge are modified along the same three-step process: In a first step, the *concept of the uncertainty of gaining an adequate understanding* recalls the fundamental fact that knowledge acquired is a social construction mediated through a layer of ‘understanding’ – a fact that is almost generally true[284], but especially pronounced in cross-epistemological contexts. Knowledge of this type represents an attempt at making sense of potentially fundamentally diverging perspectives on the world. The concept underlines that such attempts can fail at any time and even if they seem to be successful, the knowledge generated in the process does not amount to a direct representation of the world, but remains a model and, thus, interpretation of reality.

[284] Cf. footnote 100.

Against the backdrop of this underlying attitude of reflexive contextualization, the two remaining concepts of understanding modify the concepts of knowledge by drawing the attention to two types of factors that can further impede attempts at analyzing knowledge, in addition to the fundamental uncertainty discussed above. On the one hand, the *concept of structural and organizational constraints influencing understanding* stresses the potentially detrimental influence of external constraints on processes of knowledge acquisition. In doing so, it points to potential sources of these constraints that consist either in a set of organizational preferences and/or necessities or, alternatively, stem from one's professional background and concern potentially limiting mental models and methods internalized during one's professional training and/or studies.

The third concept – the *concept of personal biases influencing understanding* – complements the picture by emphasizing a number of factors internal to the person involved in a cross-epistemological undertaking that also bear an influence on the actual way how reality is perceived and, as a consequence, local knowledge is approached and analyzed. These so-called 'personal biases' cover the domain of personal preferences, inclinations and aversions that inform one's individual way of framing and interpreting reality, often rather unconsciously, unless addressed.

8 Discussion and outlook

Before entering the discussion, I would like to briefly recall this research's main aim, namely to develop a structured and interdisciplinary-based heuristic for understanding local ways of knowing in the context of industrialized as well as industrializing countries. In addition, this heuristic needs to be normatively specified towards sustainable development and to allow for a critical reflection on the uncertainty inherent in cross-epistemological attempts at gaining an understanding. I argued earlier that such an approach to local knowledge bears the potential of providing a more comprehensive and balanced basis for the undertaking of cross-cultural understanding, be it in rural or urban settings. Furthermore, it could represent a means for counteracting the current absence of systematic, theory-based and interdisciplinary approaches to local knowledge in both academia and development cooperation.

In view of this initial aim and against the backdrop of the heuristic developed in chapter 7, I discuss in this chapter research process and results along general lines, in addition to examining to what extent the framework elaborated is able to meet the claims and expectations formulated at the onset of the project. As my project is conceptual in character (as opposed to empirical) and aims at developing a heuristic for interdisciplinary application, I do not discuss in the following what factually has been found to be the case, but rather the potentials inherent to the framework approach elaborated.

With this in mind, I structure the following discussion into three sections: In chapter 8.1 I start with a chapter-by-chapter review of the insights from the various in-depth literature analyses carried out; this also entails listing the related shortcomings, called here 'knowledge gaps'.[285] Against the backdrop of the chapter-by-chapter review, chapter 8.2 engages in reviewing and analyzing to what extent the framework approach developed here matches and responds to the initial research intention and contributes to countering the lack of theoretical, interdisciplinary and localized approaches to the phenomenon of 'local knowledge'. In subsequent chapter 8.3 I discuss the topic of epistemological challenges related to any undertaking striving for building bridges across cultural and language barriers – challenges that thus also apply to this research project. Lastly, in concluding chapter 8.4 I relate the heuristic developed here to its wider context and discuss further research opportunities. The latter is based on the understanding that notwithstanding the heuristic representing a significant qualitative change in

[285] As argued earlier, these knowledge gaps are not only of theoretical value, but are directly translated into and reflected in the actual framework in the form of five so-called 'specifications' that determine fundamental characteristics the heuristic is expected to fulfill (cf. chapter 2.4.3).

how the topic of local knowledge is tackled, it is only the first step in the process of consolidating alternative ways for advancing the topic.

8.1 Discussion of the chapter-by-chapter contributions

For recapitulating the understanding gained in the different key chapters of this research, I start in chapter 8.1.1 with providing an overview on the insights from the introductory analysis of the terms 'local knowledge', 'sustainable development' and their interrelationship (cf. chapter 2). In chapter 8.1.2, I provide a recap of the extended literature analysis on 'knowledge' before summarizing in chapter 8.1.3 the insights gained on 'understanding' (for both terms cf. chapter 5). In chapter 8.1.4, I conclude with a summary on 'locality', the last element of the triplet (cf. chapter 6).

8.1.1 Literature reviews of core concepts (chapter 2)

Local knowledge

The literature analysis showed that one of the most prominent features of 'local knowledge' is its manifoldness and locally situated character; as a result, local knowledge is not systematized nor universal. In contrast to what is often assumed, it is far from homogeneously distributed in local communities and, lastly, can hardly be elicited in its entirety, not least because of local people not being familiar with expressing all of their knowledge in words. This overall situation is reflected in academic and applied research where a plethora of diverse notions and application instances of 'local knowledge' exist, resulting in the observed multifacetedness and complexity of the debates.

The complexity concerns many aspects and starts with the actual wording where numerous expressions exist to denote specific accentuations[286] for what I call in this project 'local knowledge'. The existence of these variations is in fact noteworthy as they represent underlying inclinations and interests that, in turn, coin the respective research projects, all the more as it is commonly accepted that there is no neutral way of approaching the topic.

Another expression of the high variability in perspectives on 'local knowledge' entails the question of where to position it among the many ways of knowing. In effect, it addresses most often the relation with or position vis-à-vis 'scientific knowledge', the contemporary gold standard of knowledge. In this respect, scholars studying the topic disagree on whether it is useful at all to relate, compare and assess local knowledge to and against scientific knowledge in the sense of a binary opposition. Despite critical

[286] Such as e.g. indigeneity in the case of 'indigenous knowledge'.

voices, the review showed that the majority of earlier studies and certain strands of contemporary research opt for working with the opposition pair. As critics mourn, this tends to come along with (often implicit) assessments of the value and relevance of local knowledge with it not seldom being understood as inferior to scientific knowledge. Another contested aspect is directed at whether knowledge is deemed to be socially construed, which is indicative of how much the aspect of 'power' is taken into account.

In terms of value judgments, analyzing the literature on local knowledge also revealed that certain strands display an ideologically-colored orientation amounting to advocacy. While this is all but understandable in view of the ever-continuing marginalization, instrumentalization and erosion of local knowledge, it might hamper an analytical and balanced approach to the topic for both academia and development cooperation.

In addition, the literature analysis highlighted local knowledge's relevance for both academia and applied development studies with multiple academic disciplines being involved in the discussion. However, it also revealed that despite many potential application opportunities identified in development contexts and a collection of successful implementation cases, the role and change potential of local knowledge for development purposes remains ambiguous and contested.

Furthermore, the literature showed that with a few exceptions, most studies do not approach 'local knowledge' in analytical or conceptual way. Rather, in the characteristic attempt to investigate specific, often ecologically-based questions within distinct local knowledge settings, the majority of studies are descriptive and enumerative in character. As a result, there is in the meantime a vast and ever-increasing amount of case studies from all over the world with very little emphasis on identifying overarching theoretical perspectives. Methodologically speaking, this descriptive approach is indicative of the emphasis on the epistemic dimension of knowledge central to most studies, i.e. the focus on specific knowledge items, their distribution, variation and in- or decrease, often supported by the use of quantitative methods to gain comprehensive data sets.

In addition to the quite narrowly captured epistemic dimensions, one can observe a distinct focus on ecological questions. In fact, academic and applied projects reveal a strong tendency to center on ecological issues specifically, mostly in the form of pragmatic case studies with a conservationist orientation. While the focus on the natural world indeed reflects the communities' undisputed dependency from natural resources, it is problematic in so far as it misses to adequately take into account additional dimensions characterizing local knowledge. Examples include the question of how the knowledge in question is generated and transmitted, where it originates from or how newly

generated knowledge is legitimized locally. Moreover, a focus on knowledge related to the natural world also fails to include into the overall picture the human development perspective; such a perspective aims at poverty alleviation and includes considerations on social or economic activities to foster local development.

In sum, the analysis shows that the complexity of 'local knowledge' is only selectively understood and appreciated in academic and applied research. Notwithstanding its alleged exotic nature, scientists and practitioners do not seem to invest on a larger scale into investigating its character to understand it thoroughly and independently of specific cases. In fact, research approaches abound that aim at understanding specific forms of local knowledge in detail; often, they come with the expectation that the insights can be extrapolated and generalized at a later stage. However, in doing so, they miss that the locally situated character of local knowledge defies generalizations. Accordingly, projects of this type tend to produce partial or unbalanced results and primarily reflect outsiders' preferences instead of actually representing local realities in their complexity.

Sustainable development

There is a widespread consensus in the literature that sustainable development's prominent role in international, national and regional development strategies stems from it introducing a novel perspective to the debate. The novelty consists in its pluralistic approach to solving interrelated and multi-dimensional problems whereby a key operation consists in systematically integrating a whole spectrum of potentially competing issues from the environmental to the human and economic spheres. However, regardless of sustainability's potential to function as societal role model, related research and implementation projects tend to remain in a certain conceptual void. In the following, I briefly discuss reasons for this phenomenon.

The literature showed that the concept's broad applicability comes with an inherent open- and vagueness regarding its actual definition and operationalization, leaving room for many interpretations and ways of implementation. This is in itself not problematic as long as the scholars or development practitioners working with sustainability invest in clarifying both aspects at the onset of their projects to safeguard transparency and accountability standards.

However, the analysis also highlighted that such specifications are rare. More often than not, projects lack a clear definition of what sustainability encompasses in the specific instance, how it could best be operationalized given the specific project's characteristics and how the weighting of the often contradicting dimensions is planned to take

place. Instead, the majority of projects in both academia and development cooperation operate with a vague notion that cannot do justice to the concept's analytical potential.

As a result, sustainability notions of this type tend to lack the necessary complexity, leading to an insufficiently sophisticated conception that limits itself to a temporal or, alternatively, an ecologically-oriented notion of sustainability whereby socio-economic issues are hardly taken into account. Quite often, these studies are content with tackling 'sustainability' by a brief and often rather isolated reference to either the Brundtland definition or, in recent years, the SDGs (cf. chapter 2.2.1). Additional shortcuts include a reduction of the overarching concept to a specific area, often reflected in the use of the qualifying adjective 'sustainable' (e.g. 'sustainable management' or, for a stronger topical focus, e.g. 'sustainable fishery'') or its equation with development as such in general. In any case, these approaches lack what could be called an 'integrated understanding' able to incorporate the various dimensions constituting the concept (i.e. ecology, society, economy and potentially additional dimensions, cf. chapter 2.2.3).

In addition to the lack of clarity, the literature analysis also revealed that the concept is hardly ever critically reflected in terms of limitations and problematic connotations such as the potential perpetuation of power and development inequalities between industrializing and industrialized countries or the potentially problematic impact of sustainability policies on local culture and knowledge.

The interplay between 'local knowledge' and 'sustainable development'

Analyzing the interrelationship between the academic and applied debates on 'local knowledge' and 'sustainable development' amplifies a number of characteristics that could already be observed in the individual debates.

First, it reveals an imbalance in how the two concepts are related to each other with local knowledge being attributed a subordinate or auxiliary function in the large majority of cases. In this vein, most research focuses on how local knowledge contributes to advancing sustainable development and, thus, on the numerous applications and roles of local knowledge for sustainable development of which I identified seven main ones (cf. chapter 2.3.1). These applications turned out to be rather pragmatic and mostly management-related (extending from single resource management to the management of whole habitats or regions) and at times oversimplifying in their generalizations such as the idea that all holders of local knowledge necessarily act as true stewards of nature, regardless of the management practices actually in place (cf. debate on 'noble savages').

However, as mentioned initially, corresponding research on the potential of sustainable development for fostering and strengthening local knowledge proved to be rare. In fact, it seems as though the concept's usefulness or appropriateness for strengthening local knowledge is not critically assessed or challenged. This in turn implies that it remains unclear for whom sustainability is to be attained and whether local interests are taken into account in this process. The reasons therefore are most likely, I assume, political in character rather than related to the intricacies of the scientific discourse.

Second, and despite all differences, the debates on both concepts resemble one another in that they display a clear emphasis on, it not a bias towards the environmental dimension and related issues: Most research focuses on studying either specific local knowledge instances in regard to their potential for furthering environmental protection or specific management practices that are thought to strengthen ecological adaptation and resilience. This distinct emphasis on the ecological dimension is grounded in local communities' livelihoods and stands for their undeniable dependency from natural resources. It, however, comes at the risk of overlooking other aspects that need managing such as the human development perspective for which the integration of economic or social activities to advance local and regional development is crucial.[287]

Third, the literature analysis also underlines that not only is there a hierarchy in the interplay of the two concepts, this hierarchy does not seem to be critically reflected in itself. As a consequence, the power configurations resulting thereof are not discussed either. A prominent example of this phenomenon are the contradictions between the goal of environmental protection and the goal of preserving the physical and social integrity of the local people living of the same land.

In sum, the literature analysis shows that the two debates are only marginally integrated and seem to largely remain within their disciplinary borders and traditions. In fact, the interplay between the two concepts is characterized by an imbalance with 'sustainability' having the upper hand and 'local knowledge' playing a subordinate role, at times bordering on being instrumentalized. However, despite all differences, the two concepts share one trait when it comes to their real-world application: In their focus on producing mostly descriptive-enumerative case studies with an emphasis on ecological concerns, they both seem to rather shy away from engaging in overarching conceptually-driven and theoretical studies.

[287] This can e.g. take place by means of instruments such as micro financing, fair trade schemes or cooperative organization forms (von Hauff and Claus 2012).

8.1.2 Literature analysis of the main term ‘knowledge’ (chapter 5)

The literature analyses across philosophy, sociology and anthropology aimed at compiling as broad as possible a set of structural-analytical insights into how to generically conceptualize ‘knowledge’, the main term of this research, and, to a lesser extent, ‘understanding’. These insights served to inform the tentatively postulated dimensions of knowledge (cf. chapter 4.3), in addition to revising and complementing them – a process that resulted in the concluding set of dimensions of knowledge formative for this research (cf. chapter 4.4.1).

In the following, I briefly recapitulate how the specific structural-analytical insights into ‘knowledge’ provided by the academic literature inform the dimensions of knowledge. To this end, I start with philosophy, proceed to sociology and conclude with anthropology.

The **literature from philosophy** contributed to informing four of the eight dimensions of knowledge, more precisely the (1) epistemic dimension, the (2) procedural dimension, the (6) ontological dimension and the (7) legitimational dimension.

As for the individual disciplinary insights, the (1) epistemic and the (2) procedural dimensions of knowledge are informed by the distinction between knowledge content and knowledge processes or between *propositional* and *procedural knowledge.* With respect to the (2) procedural dimension, the literature emphasized the relevance of its implicit part.

The philosophical literature also contributed to informing the (6) ontological dimension of knowledge by providing an overview on the potential *sources of knowledge* that can be considered acceptable, depending on the specific social and cultural context. They include perception/senses, reason/reasoning, introspection, intuition, memory and testimony.

Lastly, the (7) legitimational dimension of knowledge is informed by the broader debate on the so-called Gettier case that underlined the *importance of the justificatory element* for understanding knowledge per se, with four specific ways outlined as to how to question the justifications of knowledge content (cf. chapter 5.2.1.1). The dimension is further informed by the debate on the different approaches to truth by means of *criteria for the validity of knowledge* (also called ‘criteria of truth’); these approaches entail correspondence approaches, coherence approaches and consensus approaches and are understood to result in different modes of justifying knowledge.

The **literature from sociology** contributed to informing the concept of ‘knowledge’ by covering the following six dimensions: the (1) epistemic dimension, the (3) actor-related dimension, the (4) social organization, the (5) contextual dimension, the (7) legitimational dimension and the (8) representational dimension of knowledge.

As for the individual disciplinary insights, the (1) epistemic dimension of knowledge is informed by *Goffman’s* notion of ‘frames’ that denotes culture-specific expectations as to how a given situation will most likely play out, including the actions of the people involved and their degree of participation. These frames include so-called primary frameworks’ (natural and social ones) and ‘secondary frameworks’, together with their typical modulations or ‘keyings’ both of which provide conceptual orientation for interpreting social situations.

The (3) actor-related dimension of knowledge is informed by two sources in the sociological literature selected for this research. First, it is *Schutz’s* distinction between an actor’s ‘social and subjective stock of knowledge’ and his focus on the granularity or depth of an actor’s knowledge that stress the significance of an actor’s specific knowledge configuration. Second, it concerns *Bourdieu’s* notion of ‘cultural capital’, namely his three forms of cultural capital – incorporated, objectified and institutionalized cultural capital – all of which represent resources an actor can draw on.

The (4) social organization of knowledge is informed by all three sociologists. First, *Schutz* underlines the crucial role of socialization for knowledge transmission. Second, taking up the aspect of knowledge transmission, *Goffman* specifies that in social contexts knowledge is transmitted by means of so-called ‘frames’ that are internalized during socialization. Lastly, *Bourdieu* details the dimension of the social organization of knowledge in four different ways, namely a) by stressing the importance of socialization for knowledge transmission, b) by underlining the relevance of the capital forms at hand, foremost of ‘institutionalized cultural capital', for attesting knowledge to somebody, c) by accentuating that a person’s habitus is decisive for access to knowledge and d) highlighting the need for identifying counter-strategies against so-called ‘doxic knowledge’ that facilitate the generation of new knowledge.

In a similar vein, the (5) contextual dimension of knowledge is informed by all three sociological theories. *Schutz* determines fundamental categories typical for the construction and stratification of all life-worlds. They encompass a) the division of the world into four sub-worlds (cf. chapter 5.3.1.2) and b) a set of multiple provinces of meaning with reality being the central reference point and other provinces forming secondary reference points (e.g. world of dreams or of religious experience). *Goffman* shares Schutz’s

notion of multiple provinces of meaning, yet rejects the idea of everyday reality as ‘paramount reality’ as he considers all provinces of meaning to be equally pertinent. *Bourdieu* underlines the significance of examining power structures that he considers to significantly shape social life. In this vein, he introduces two concepts: a) the concept of ‘capital forms’ whereby he considers capital and power to be closely linked and differentiates between four capital forms (economic, social, symbolic, cultural capital) and b) the concept of ‘fields’, understood as structured social spaces of struggle where confrontations are decided according to the actors’ positions and the means employed.

The (7) legitimation dimension of knowledge seems to be less of a topic for sociological considerations. Only *Schutz* contributes by discriminating in his concept of *motivational relevance* between two types that inform on the underlying legitimational orientation; they include 'in-order-to motives' focusing on the future and 'because-of motives' centering on the past.

Lastly, the (8) representational dimension of knowledge is informed by *Bourdieu’s* notion of capitals, more precisely by the specific notion of ‘objectified cultural capital’ for which books, performances and collections represent salient examples.

The **literature from anthropology** contributes to informing the concept of ‘knowledge’ by grounding and informing all but one of the knowledge dimensions, namely (1) the epistemic dimension, the (2) procedural dimension, the (3) actor-related dimension, the (4) dimension of social organization, the (5) contextual dimension, the (7) legitimational dimension and, lastly, the (8) representational dimension.

The (1) epistemic dimension of knowledge is informed by two of the anthropological approaches presented in chapter 5.4. On the one hand, *Barth* contributes to informing it by means of his notion of the ‘corpus of assertions and ideas’ that denotes the facts of the world or the actual knowledge content and forms part of his tripartite approach to knowledge. In a similar vein, *Berlin* stresses the importance of identifying the specific way a culture is organized on a factual-conceptual level, namely its mental and verbal dispositions, concepts, categories and classifications or the culturally overarching patterns of thinking in general.

The (2) procedural dimension of knowledge is underpinned by the same two theories, namely by *Barth’s* notion of ‘embodied skills’ as much as by *Berlin’s* emphasis on understanding overarching patterns, this time related to knowledge processes, i.e. the local procedures and methods defining how things are generally done.

With respect to the (3) dimension of social organization of knowledge, it is only *Barth's* tripartite approach, more specifically the notion of the 'social forms of organization' that contributes to grounding the idea that knowledge is socially organized in the literature.

In terms of informing the (4) actor-related dimension of knowledge, *Barth* highlights the generally uneven distribution of knowledge – be it between and within communities, populations or individual lifespans.

The (5) contextual dimension of knowledge, understood as the cultural context where a given knowledge form is 'at home', is informed by two of the approaches introduced. On the one hand, it is *Berlin's* inclination towards and interest in the overall mental organization of life-worlds, namely the surrounding context that contributes to informing this dimension. His focus on the unconscious set of assumptions and beliefs linked to any given context is thereby decisive. On the other hand, it concerns *Kluckhohn* and *Strodtbeck's* value orientations approach and its later extension by *Hills*. In their view, cultures differ on six value orientations that are linked to six basic and value-laden issues all social groups need to take a stand on (cf. chapter 5.4.2.1 and 5.4.2.2). The variations in the value orientations are considered to be at the basis of the overall cultural diversity and correspond to different solutions for resolving the above-mentioned value-related issues; understanding these variations is said to be crucial in facilitating cross-cultural understanding.

The (7) legitimational dimension of knowledge is only informed by *Barth's* criteria for validating knowledge; these criteria stem from the tripartite approach or, more precisely, from the interplay between 'corpus of assertions and ideas', 'social forms of organization' and 'modes of communications'.

Lastly, the (8) representational dimension of knowledge is also exclusively informed by *Barth's* tripartite approach in that he stresses that the modes of communication applied are crucial for characterizing any given knowledge form on a material level.

8.1.3 Literature analysis of the auxiliary term 'understanding' (chapter 5)

Given the role of understanding in this research (cf. chapter 1.3.2) and the semantic overlap between 'knowledge' and 'understanding', the literature analysis on 'knowledge' also served to inform the notion of 'understanding' and its dimensions in a generalized way (cf. chapter 4.4.3). However, only part of the sociological and anthropologi-

cal contributions provide insights for ‘understanding’; philosophy has nothing to offer in this respect, at least int terms of the literature selected for this project.

The **literature from sociology** contributes to informing all three generalized dimensions of understanding, namely the (14) dimension of the uncertainty of gaining an adequate understanding, the (15) dimension of structural and organizational constraints influencing understanding and the (16) dimension of personal biases influencing understanding.

As for the individual disciplinary insights, two sociologists elaborate on the (14) dimension of the uncertainty of gaining an adequate understanding.[288] *Goffman* does so by introducing the notion of ‘social frameworks’ and, particularly, ‘modulations’ and ‘keyings’ by which he discusses so-called ‘secondary frameworks’ that are intentionally used to mislead. According to him, applying interpretative frameworks comes for individuals in general with the inherent risk of misinterpretation, be it in the form of threats to the normality assumption or of attempts at deliberately deceiving. In a similar vein, *Bourdieu* doubts to what extent unadulterated insights into objects are feasible in science and daily life, given that human actions largely amount to unconscious activity. As a counter-measure, he argues for adopting a critical attitude towards one’s own perception, research practice and potential power imbalances involved and elaborated the concept of ‘reflexivity’ that he considers facilitating a more adequate understanding of objects of the outer world. In view of the inevitable effects of this unconscious activity, Bourdieu stresses the importance of consciously analyzing one’s own dispositions on a number of levels whilst being in the process of sense-making.

Such a focus on counteracting the challenges inherent to understanding is at the root of the two remaining concepts of understanding, which discuss external and internal constraints and biases that further hamper a robust and realistic understanding of a given local context. In terms of external constraints, *Bourdieu* contributes to informing the (15) dimension of structural and organizational constraints influencing understanding by proposing to scrutinize one’s relationship with the object of study in two ways. First, he suggests that one critically assesses one’s specific position in one’s academic sub-field, the power attributed to it and how this position is contingent on a favorable selection of theoretical constructs. This assessment extends to the whole fabric of traditions, mental structures and patterns, problems and shared convictions determining the perception of what merits to be researched, at the expense of other subject-matters. Second, Bourdieu calls for paying attention to what he denotes as intellectualistic

[288] Schutz does not provide any insights to ‘understanding’ in the publications selected.

bias – a notion describing a mental bias that blocks one from perceiving and focusing on the practical problems in the world that need solving. Instead, the attention is focused on theoretical constructs, concepts and agglomerates of meaning or what Bourdieu calls the 'collective scientific unconscious'. As a result, science runs the risk of not only imposing its theoretical tools on real world issues that would necessitate more customized approaches, but of also failing to see the social world as it is.

The complementing aspect, i.e. the (16) dimension of personal biases influencing understanding is informed by two of the sociological approaches discussed. First, it is heavily relies on *Bourdieu's* concept of reflexivity in which he calls on (social) scientists to try to objectify themselves to the greatest extent possible. Next to an awareness of structural and organizational constraints, this also extends to one's personal biases and one's own entanglement in the social world. The latter is expressed through a particular set of interests and a specific mode of reasoning and perceiving the world (one's so-called habitus), all of which is directly linked to one's social background and positions one in terms of class, culture, gender, age, nationality. In a similar vein, *Goffman* stresses the importance of paying close attention to personal biases in view of their influence on the process of understanding. In his view, the so-called 'social frameworks' are construed during socialization, i.e. in the early years of one's life, and therefore evade a conscious analysis. In fact, he considers them to be more of a bodily experience than a process of conscious deliberation.

The **anthropological literature** selected for this research is somewhat less fruitful in terms of informing the generalized concepts of understanding as only Berlin's perspective contributes to informing them theoretically. His contribution grounds on a deep mistrust vis-à-vis basic principles and methods applied in interpretative anthropology, a renowned disciplinary standard at his time. In his search for alternative methodologies for discovering the mental organization of the respondents' world and letting them speak for themselves, he turns to cognitive techniques. He implements them to support the local population in systematically describing content, structure and characteristics of a given knowledge domain on their own, without any expert outsider imposing his/her perspective. In line with this, Berlin's mistrust also extends to the actual results produced by studies under the paradigm of interpretative anthropology. In fact, he does not consider such etically produced knowledge to be trustworthy given the conditionalities and circumstances of its production – a statement that contributes to informing the (14) dimension of the uncertainty of gaining an adequate understanding. His reservation vis-à-vis interpretative approaches also contributes to grounding the (15) dimension of structural and organizational constraints, which discusses concrete factors that

impeding understanding, in addition to the underlying general uncertainty. In this respect, Berlin underlines that the influence of one's professional or academic training on one's perspective of the world should not be underestimated and extends from basic concepts to inherent key assumptions and methodological preferences.

8.1.4 Literature analysis of the modifying term 'locality' (chapter 6)

The multi-disciplinary literature analyses strove to compile as broad as possible a set of structural-analytical insights into how to generically conceptualize 'locality'. In this respect, I concentrated on identifying how a specific locality influences the knowledge of the people living there or moving through it, or, in other words, how a specific locality is reflected and expressed in a given local knowledge form. The insights from the multi-disciplinary literature then served to inform, revise and complement the tentatively postulated dimensions of locality (cf. chapter 4.3). This process lead to the concluding set of five dimensions of locality formative for this research (cf. chapter 4.4.2).

In the following, I briefly recapitulate how the specific structural-analytical insights into 'locality' provided by the academic literature inform the dimensions of 'locality'. In fact, the literature selected turned out to ground all five dimensions of locality, namely the (9) physical-material dimension of locality, the (10) actor dimension of locality, the (11) network dimension of locality, the (12) influx/response dimension of locality and, lastly, the (13) relevance dimension of locality (functional-symbolical). In the following I briefly outline which theories contributed to informing what dimensions of locality.

The (9) physical-material dimension of locality is informed by three of the theories selected: *Multilocality* contributes the idea that in a person's life there can exist a number of relevant localities where he/she is present and active, at times also simultaneously. This thought is taken up by *translocality* whereby a special emphasis is set on the movement between the various localities and on analyzing not only the multiple locatedness and movement of people, but also of goods/objects and ideas. *Multi-sited ethnography* takes up the theme and relates it to the research context, underlining that in most cases, a given research interest is related not only to a single, static research location, but rather to a whole network of interconnected locations that influence each other, from the local to the global level and vice-versa.

The (10) actor dimension of locality is equally informed by three of the theories introduced earlier. The approach of *global cultural flows* conceptualizes actors as both living entities (humans/animals/plants etc.) and non-living ones (objects/ideas/practices etc.) and postulates the existence of five global cultural flows or '-scapes' (ethno-, techno-,

finance-, media- and ideoscapes structuring the movement of people, technology, money, media and ideas/values). These cultural flows are crucial for allowing the actors to move around the world and produce locality in this process. *Multi-sited ethnography* also conceptualizes actors as living and non-living entities and considers basically everything that is on the move and can be followed to be actors, including things (e.g. goods/gifts/money), metaphors, plot/stories/allegories, life/biographies and, eventually, conflicts. *Hybridity* in its modern approach focuses on the actors of a given locality with the aim to examine issues of intermixture, i.e. the mixture of local and non-local influences, and to challenge related essentializations. In colonial times, hybridity was largely concerned with examining racial intermixture, a problematic focus that opened up with the study of other types of intermixture such as ethnic, religious or biological intermixture and the introduction of critical perspectives such as the aspect of double-accentedness in the creation of hybrid forms.

The (11) network dimension of locality is informed by five theories outlined earlier. *Multilocality* starts from the idea that specific human activities (e.g. markets) arise from individual residing and acting in multiple places, i.e. from a network of actions and places, and stresses that in order to understand these activities, it is crucial to consider what takes place in different localities simultaneously, checking for both intended and unintended consequences. *Translocality* stresses the interpenetration of the local and the global that takes place in the countless interactions between places, actors and objects/ideas across the many types of borders, including but not limited to national borders. *Globalization/Glocalization* draws the attention to the massively increased interconnectedness of today's world ('world as a global village') and underlines that regardless of certain tendencies towards particularization, a change is taking place from a more territorialized and nation-state-oriented world to a more translocal, interconnected and globally-oriented one. This, in turn, leads to a disconnection of cultural practices and knowledge from their traditional embeddedness and is said to render them more prone to intermixture. *Global cultural flows* underlines that human interactions are organized along five interrelated so-called '-scapes' and points to the network that results from the interconnections established through the diverse global cultural flows, which is fueled by a constant movement and migration of living actors and non-living ones across the globe. *Multi-sited ethnography* concentrates on understanding the ways in which the different geographical locations relevant for a specific research question are interrelated and interact. Thus, it facilitates locating the local within the global while viewing the global as an interrelated system of localities. Considerations of this type

also extend to power structures in the various locations and their (potential long-distance) impact on people's lives.

The (12) influx/response dimension of locality is informed by four of the theories presented earlier. *Translocality* describes that a given locality can react in two ways to a given influx; it can either accept and adapt it, which results in greater interconnectedness and entanglement with places outside the locality. The influx can, however, also be rejected, leading to disparity, more fragmentation and distancing from other localities. *Globalization/Glocalization* underlines that globalization dynamics are always reinterpreted and decided locally, resulting in the many context-related outcomes. Where globalization is welcomed, spatially segregated places with distinct customs are weakened, links of human to specific localities such as towns and villages decrease and social relationships end up being less and less bound by spatial location. Where, however, globalization is opposed, local cultural traditions and the local in general are intensified, leading to a 'new localism' and a related cultural self-confidence. *Multi-sited ethnography* in its distinct emphasis on following a research interest in its movement across the globe underlines the potential influence of ephemeral phenomena entering and impacting a locality for only a brief time before disappearing again. *Hybridity* emphasizes the various reactions that localities can have to the influx of alien influences and distinguishes between adaptive reactions that result in intermixture and adverse reaction that counter-act intermixture. In addition, it points to the case when two entities are mixed in an act of resistance to challenges existing power dynamics (cf. 'intentional hybridity').

Lastly, the (13) relevance dimension of locality is informed by three of the theories presented. *Multilocality* contributes to this dimension by stressing that a place can simultaneously embody multiple function and symbolic attributions for various people; thus, it is called 'multilocal' if it carries polysemous meanings for different actors. *Translocality* introduces the special form of so-called 'translocal imaginaries', i.e. mental figures that involve the subjective dimension of one's imagination and do not require physical displacement. Lastly, the concept of *global cultural flows* underlines that the functional and symbolic dimensions of locality are shaped by a 'democratization of the imagination'. This goes back to the presence of global mediascapes that, provided a stable internet access, allow individuals at all social levels to access the global stream of images and narratives and to engage in individual imagination, thereby creating new identities and envisioning an alternative future.

8.2 Discussion of the framework approach

Against the backdrop of discussing the theoretical insights gained at various stages of this research in the preceding chapter 8.1, I examine to what extent the proposed 'framework for understanding local knowledge' is able to live up to the aspirations and expectations formulated initially. To this end, I scrutinize whether it manages to offer alternative paths able to mitigate shortcomings identified in existing approaches and what kind of potential benefits could result from applying the heuristic elaborated here.

In other words, I start by discussing this project's results against two groups of criteria, namely a) the three research questions formulated initially (cf. chapter 1.2) and b) the five additional specifications (cf. chapter 1.3.2) that provided basic guidance as to how to approach the task. As argued earlier, these specifications are conceptualized such that they represent condensed counter-measures aimed at mitigating shortcomings identified in the analyses of the academic and applied literature on 'local knowledge', 'sustainable development' and their interrelationship (cf. chapter 2.4.3). Given that these specifications do not add any novel requirements, but specify the overarching research questions, I opt for discussing them along with their corresponding research question, as displayed in the overview below (cf. table 8):

Three research questions (cf. chapter 1.2)	**Five specifications A-E (cf. chapter 1.3.2)**	**Analysis in chapter**
1) What are generic and fundamental dimensions for analyzing 'local knowledge' in its inherent complexity and how could these dimensions be aggregated in a meaningful way into a framework?	analysis of the notion with A) 'knowledge' as main term (leaving aside the alternative analytical lens of 'power') and B) 'locality' serving as modifying term	8.2.1
2) For the framework to allow for critically reflecting on the process of 'understanding local knowledge': What are generalized dimensions for sketching 'understanding' and how are they to be integrated into the framework?	C) integration of a reflexive layer by D) clarifying the character of the concept of 'understanding'	8.2.2
3) For the framework to be normatively specified with respect to sustainable development: What are basic and salient principles for defining sustainable development as the normative reference system with which the framework needs to be compatible?	E) clarification of the function and character of the concept of 'sustainable development'	8.2.3

Table 8: Relationship between research questions and framework specifications

In the following chapters, I argue why I consider the tasks to be completed. To this end, chapter 8.2.1 outlines why I deem the conceptual-analytical framework approach to represent a viable answer to research question 1 and specifications A and B. In chapter 8.2.2, I argue for why I consider the integration of a generalized approach to 'understanding' to respond to the need for a reflexive layer, as formulated in research question 2 and detailed in specifications C and D. Lastly, I discuss in chapter 8.2.3 how the sustainability principles formulated at the onset of this project (cf. chapter 3.2.2) are reflected in the heuristic and how I deem this to provide an answer to research question 3 and specification E.

8.2.1 Analytical-conceptual and interdisciplinary framework approach

With respect to *research question 1 and specifications A and B*, I considered it paramount to build the approach such that it is able to incorporate, to the greatest extent possible, the characteristics that were found missing in earlier approaches (cf. chapter 2.4.2 for the respective 'knowledge gaps').

In the first place, this implied opting for a *conceptual-analytical approach* to counterbalance the wealth of previous studies on local knowledge that are enumerative-descriptive in character and focus on a specific knowledge instance, often with the intent to later try to generalize the insights from this instance. Opting for the development of a theoretically-inspired approach over a primarily empirically-informed one also entailed the need to invest in integrating its components into a *framework* and in specifying the interrelationships between the framework components.

This initial decision led to the formulation of research question 1 (cf. chapter 1.2):

> 1) *What are generic and fundamental dimensions for analyzing 'local knowledge' in its inherent complexity and how could these dimensions be aggregated in a meaningful way into a framework?*

The insight that the observed lack of complexity in conceptualizing 'local knowledge' was foremost linked to under-complex understandings of the underlying notions of 'knowledge' and 'locality' (cf. literature reviews and analyses in chapters 5 and 6) opened the door to concentrate and 'zoom in' on these two terms. Doing so turned out to be a fruitful avenue as it allowed me to identify the shortcomings and gaps in the disciplinary approaches and to relate them to each other in order to, eventually, being able to design my heuristic such that these gaps are bridged, to the greatest extent possible. However, consulting the literature was not only helpful in emphasizing existing

gaps. It also allowed me to take advantage of the trove of insights on both ‘knowledge’ and ‘locality’ across disciplines that so far had hardly been taken up by the more specialized debate on ‘local knowledge’ (and related terms) in anthropology, the debate’s home discipline.

To structure and organize the analysis of these two terms, I detailed their interrelationship by formulating specifications A and B (cf. chapter 1.3.2) which determined

A) ‘knowledge’ to be the main term[289] as well as

B) ‘locality’ to serve as modifier in the composite notion of ‘local knowledge’.

Conceptualizing ‘locality’ as a *modifying term* that specifies the precise type of knowledge discussed, in this case a form of localized knowledge, allowed me to take advantage of the substantial conceptual advancements on locality, place and space in a number of academic disciplines that emerged in the wake of the so-called ‘spatial turn’. It also allowed me to specify the aspect of localization based on literature without having specific local instances in the real world in mind as role models[290]. This way, I could ensure that selected real-world instances would not disproportionally shape the framework structure and the interrelations between the various dimensions. In sum, I argue that by highlighting the aspect of ‘locality’, I was able to attribute ‘locality’, or the local perspective in general, a decisive role in this research.

In fact, by means of abstracting from individual local knowledge instances and analyzing the notion from an overarching theoretical perspective, I was able to identify a set of salient dimensions characterizing ‘local knowledge’ and to understand the interplay of these dimensions, thus maximizing the overall inclusiveness of the heuristic. I argue that by opting for such an encompassing theoretical approach, the framework developed here is able to live up to the expectation formulated at the project’s onset, namely to embrace and accommodate as many forms of local knowledge as possible all over the world, including forms from industrializing and industrialized countries and from rural and urban areas.

[289] This was at the expense of having to leave aside another potential analytical lens to studying the phenomenon of local knowledge, namely the dimension of ‘power’.

[290] This is in contrast to numerous other approaches that start from specific local knowledge instances in the real world (cf. chapter 2.1.7).

Thus, leaving traditional 'one size fits all'-approaches behind, I deem to have designed the framework such that it is generic in its broad theoretical approach to 'knowledge' and at the same time localized in its emphasis on an equally generic local perspective. The heuristic encompasses eight concepts characterizing 'knowledge' and five concepts detailing 'locality' as depicted in illustration 72 (for clarity reasons, relations between the concepts are omitted, for those I refer to illustrations 32 and 39).[291]

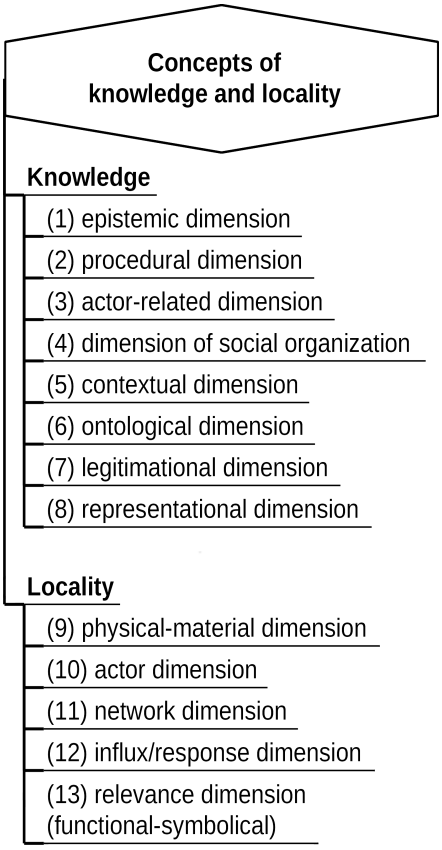

Illustration 72: Concepts of knowledge and locality

In sum, I therefore expect that this framework can indeed inform research and development projects involving local knowledge, thereby contributing to advancing the debate itself. I see the benefits in three respects, namely in that the heuristic...

(1) ...provides a 'framework for (almost) all' as it can be applied in a number of academic disciplines and across disciplinary boundaries;

(2) ...lends itself to being used not only theoretically in academia, but also in applied contexts in development cooperation;

(3) ...facilitates comparative research projects within and across academic disciplines.

<u>An interdisciplinary framework bridging boundaries in academia (1)</u>

The literature reviews in chapter 2 highlighted that research on local knowledge and related notions is disciplinary in character with only a small minority of studies explicitly combining research perspectives from natural and social sciences. This phenomenon is not only limited to research on the exotic topic of 'local knowledge'; on the contrary, a certain lack of integration represents a pattern that can be observed in many research constellations. For a substantial part, this is problematic as such research endeavors miss the opportunity to integrate qualitatively differing perspectives on the same topic into a meaningful whole.

[291] The eventual framework consists of a total of 16 dimensions – eight dimensions covering 'knowledge', five dimensions describing 'locality' and another three dimensions detailing the third auxiliary component of 'understanding' (cf. chapter 8.2.2).

While this might not present much of an issue for studies on local knowledge featuring a distinct disciplinary orientation, I consider it a decisive disadvantage for adequately researching local knowledge in general. Such research could greatly benefit from an integrated approach that might, in addition, facilitate its acceptance by scholars from various backgrounds, provided that they recognize specific elements that originally stem from their specific academic field. This recognition effect might contribute to lowering the threshold for a successful cross-disciplinary uptake of insights – an issue maybe more virulent in natural sciences where quantitative studies abound and qualitative ones tend to be rare and are met with a certain reservation regarding their methodology and validity. In my view, an integrated approach could thus also contribute to raising the number of studies in social sciences informed by research from natural sciences and vice-versa and, thus, promoting a certain disciplinary cross-pollination.

In view of this situation, I considered a strong interdisciplinary foundation of the frameworks' components to be paramount for a novel approach to the topic. This led me to combining and integrating theoretical insights from diverse academic disciplines, including anthropology, sociology, philosophy, geography, the various ethnosciences (ethnobiology, -botany, -ecology, -zoology, -pedology etc.) and area, development and cultural studies. However, despite all these efforts, I concede that there are limits to achieving comprehensiveness in an individual research project. Notwithstanding this limitation, I argue all the same that under the given circumstances, I was able to reach adequately high a level of coverage. In this vein, I would claim that I managed to transcend the limitations of each of the academic disciplines by identifying their respective strengths and relating them to each other, thus fulfilling the requirement to equip the heuristic with a strong interdisciplinary foundation.

A heuristic for both academic research and applied contexts (2)

The extensive literature reviews at the start of this project showed that the topic of local knowledge is discussed mainly in two contexts – in academic research and in the applied domain of development studies, with the former generally producing rather theoretical approaches and the latter being more firmly rooted in applied contexts. It also showed that notwithstanding local knowledge's relevance for both fields, overarching approaches displaying a certain degree of systematization appear to be rare. To counteract this situation, I designed the framework from the beginning such that it is applicable to academic as much as applied contexts[292]. This, in turn, required grounding it the-

[292] Moreover, I also considered so-called 'gray literature', i.e. publications and manuals intended for application in the field and published by national development agencies such as the Swiss Development Cooperation (SDC), the Canadian International Development Agency (CIDA), the Department for International Development (DFID, UK) or the German Corporation for International Cooperation (GIZ). Lastly and with respect to methodologies applied in

oretically in both bodies of literature. Doing so allowed me to construe the approach in a way that it takes account of and covers both 'realities'. I therefore reason that given its foundation in academic and applied realms, the framework indeed lives up to the expectation of being applicable to both academia and applied contexts, including a variety of settings such as e.g. industrialized and industrializing countries as well as in urban and rural environments.

In addition, grounding the framework theoretically in both the academic and applied literature might be helpful in counteracting a certain tendency in academia and applied contexts to back away from studying 'local knowledge' altogether, reasoning that the approaches available do not allow it. In these cases, the existing approaches are considered unbalanced, namely too theoretical for applied contexts or, alternatively, not theoretical enough for academic contexts. Given that the framework proposed here is characterized by the combination and integration of both academic and applied perspectives, I consider to have provided an instrument for building bridges between the academic and applied fields.

A framework facilitating comparative studies (3)

A third advantage of the heuristic developed here is that by means of its structured, systematic and theory-guided approach, it facilitates comparative research within and across academic disciplines, which remains a rather rare phenomenon, especially with respect to projects that combine social and natural sciences. In addition to allowing for comparative research designs, the heuristic also harbors the potential of the results being transferable, both of which represent crucial characteristics of a beneficial interdisciplinary orientation. Moreover, next to the academic context, the structured framework approach might also be useful in providing guidance as to how to engage with local knowledge in applied contexts such as in development cooperation or environmental conservation.

8.2.2 Integration of a reflexive layer into the heuristic

Research question 2 and specifications C and D go back to the insight that the majority of existing approaches to local knowledge lack some kind of layer or mechanism that allows the researcher or practitioner to take a step back and critically reflect on the process of understanding itself. In view of the construed nature of most knowledge generated, such a focus might in general prove beneficial for many research and development contexts. In epistemologically unfamiliar contexts, however, the situation is

the field, consulting ethnographic methods and recalling own experiences in conducting applied development research proved additionally fruitful.

more pronounced and more frequently experienced, which makes the absence of such a layer an astonishing phenomenon – all the more as local knowledge forms are often inherently alien and therefore prone to being misunderstood and misinterpreted by outsiders, as discussed in some detail with reference to the debate on emic and etic research perspectives (cf. chapter 1.3.2).

To counterbalance this situation, I expanded the initial focus from 'local knowledge' to '*understanding* local knowledge', thus emphasizing that I deem the aspect of 'understanding' to play a crucial role in any attempt at grasping alien knowledge contexts. This goes back to the realization that one cannot and must not presume to have an easy and straightforward access to understanding any type of non-familiar knowledge, including 'local knowledge'. Rather, for it to be understood as properly as possible, it needs to be contextualized and translated in some way or another that attributes 'understanding' a significant role in the attempt to build bridges across epistemologies. Thus, complementing the core term of 'local knowledge' by an additional focus on 'understanding' allowed me to design the framework such that the fundamental uncertainty involved in studying the topic could be made explicit. In the heuristic, this idea is expressed along general lines by the underlying concept of the uncertainty of gaining an adequate understanding (cf. chapter 7.4.1). In addition and detailing two specific aspects of the complex phenomenon, the concept of structural and organizational constraints influencing understanding (cf. chapter 7.4.2) examines interfering factors external to the person concerned. Complementing the picture, the concept of personal biases influencing understanding (cf. chapter 7.4.3) emphasizes factors internal to the person.

As a matter of fact, I consider integrating a reflexive layer as the right approach in view of developing a heuristic that claims to aim for inclusiveness and comprehensiveness. In view of this, abstaining from additionally taking into account the person working with the framework would be rather contradictory. Thus, emphasizing the influence of the processes of perceiving, processing and interpreting on the actual understanding allowed me to add complexity to the framework approach itself – a complexity that I consider only adequate given the multifacetedness of the topic itself (cf. chapter 2.3.1).

This expansion of the initial research intention to include such a reflexive layer translated into research question 2 (cf. chapter 1.2):

2) *For the framework to allow for critically reflecting on the process of 'understanding local knowledge': What are generalized dimensions for sketching 'understanding' and how are they to be integrated into the framework?*

In addition, it resulted in specifications C and D which formulated the related requirements of integrating a reflexive layer (C) and of clarifying the character of the concept of ‘understanding’ (D).

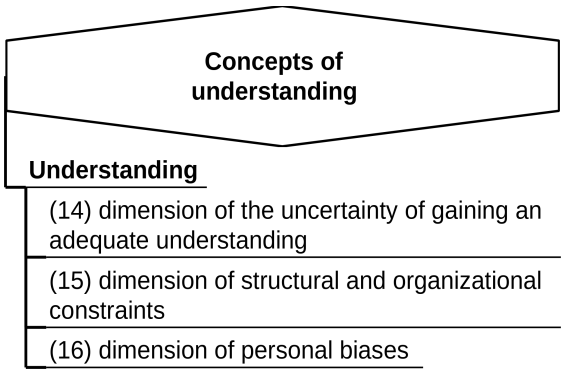

Illustration 73: Concepts of understanding

In my understanding, the three generalized dimensions of understanding (14)–(16) identified in the course of this project (cf. illustration 73) are well suited to characterize the process of understanding in its broadest and most generalized terms – and thus in accordance with the auxiliary function of ‘understanding’ in this project.

Working with a framework approach to local knowledge that integrates the actual process of understanding can be expected to have a number of advantages. More precisely, I see the benefits in two respects, namely in that the layer of reflexive understanding…

(4) ...points to the challenges related to gaining an adequate understanding across epistemologies or cultures given the construed and thus uncertain character of knowledge attained under such circumstances;

(5) ...allows generating more reliable results by providing guidance towards a more nuanced understanding of local knowledge.

In the following paragraphs, I briefly describe these two advantages.

Emphasis on the challenges related to a cross-epistemological understanding (4)

The main advantage of proposing a local knowledge approach that incorporates a reflexive layer lies in the function this additional layer performs: It informs the person working with the heuristic on fundamental and underlying challenges related to the undertaking of engaging in attempts at cross-epistemological understanding. In the heuristic, this idea is expressed in the concept of the uncertainty of gaining an adequate understanding. As discussed in the context of the emic-etic debate (cf. chapter 1.3.2), this uncertainty underlies any attempt at understanding, but is more vividly expressed in cross-epistemological contexts. Next to pointing to this underlying current of uncertainty, the reflexive layer guides the person along very general lines by highlighting two main factors that can lead to erroneous interpretations. They include on the one hand external constraints stemming from one’s professional training and organizational

setting and on the other hand internal biases arising from one's personal background and upbringing.

While incorporating such a reflexive approach is no longer considered 'avantgarde' in social sciences, I learned from experience that this is not necessarily the case in other academic disciplines – foremost in those where, for various reasons, the focus is set on researching specific content with less emphasis on simultaneously scrutinizing and questioning the conditions under which the results have been obtained. Against this backdrop, I expect that the reflexive layer might be especially useful for research or development initiatives whose proponents are firmly rooted in a technicistic or rationalistic mindset. For development corporation, this involves, among others, technicians and engineers while for academia, it concerns mainly natural or engineering scientists. In both cases, their professional training does usually not familiarize them with fuzzy topics such as cross-epistemological understanding or intercultural communication.

However, especially for research or development projects bridging epistemologies and cultures, I consider the existence of such a layer to be paramount. In these contexts, it is crucial that one refrains from turning one's perspective into an absolute; in fact, one needs to refrain from claiming any prerogative of interpretation at all or from engaging in other forms of appropriating local knowledge – and be it by means of imprudently drawing poorly informed conclusions. I even go as far as pleading that when dealing with local knowledge, it is only adequate to bear in mind a distinct awareness of the construed nature of one's own understanding – construed according to the best inference, but still construed in its very core.

This, however, does not imply that all research on local knowledge needs to necessarily incorporate such a reflexive layer. In specific settings, the respective researcher or development practitioner might indeed have good reasons for considering his/her perspective and insights to be accurate (such an assessment might result from e.g. a long-standing familiarity or from shared ethnic backgrounds). However, in my view, a generic approach to local knowledge that claims to strive for inclusiveness and broad applicability as does the heuristic developed here is well advised to generally adopt a certain reflexive caution. This caution is best combined with what could be called an inquiring 'beginner's spirit' that pays attention to potential external constraints and internal biases at work, to the extent epistemologically possible.[293]

[293] Such an attitude is also in line with quality standards in social sciences where, as Denzin (1994:500) put in a nutshell, "[…] there is only interpretation. Nothing speaks for itself."

Generation of more reliable results by means of providing a more nuanced understanding of local knowledge (5)

Looking at existing approaches to local knowledge, I argue that the framework proposed here can indeed claim to be built such that it is able to provide a more comprehensive and nuanced understanding than earlier approaches. A characteristic and distinguishing feature of the heuristic is that 'local knowledge' and the very act of understanding it are intrinsically linked in the framework approach proposed. This reflexive motion supports and guides the researcher or practitioner in reflecting on his/her insights in general and on their potential contingency on external and internal factors instead of taking them at face value without further thought. This, in turn, contributes to advancing the debate on local knowledge itself – a debate that does not seem to particularly emphasize the reflexive assessment of the insights gained. In other words, I claim that a critical reflection is crucial for generating more differentiated and, hence, more reliable results. Consequently, the reflection encouraged in this framework approach not only aims at tackling the basic uncertainty inherent in attempts at cross-epistemological understanding, but also extends to the specific structural, organizational and personal constraints and biases that shape the design, course and outcome of research or development projects.

8.2.3 Compatibility of the framework with sustainable development principles

Research question 3 and specification E go back to my realization that approaches to local knowledge preponderantly abstain from integrating a normative layer into their considerations. Such a layer would allow to specify the heuristic normatively and determine the modes in which the topic 'local knowledge' can and should be approached, namely in line with the underlying value system that guides the respective intervention. The near lack of such normative specifications, or their potentially implicit nature, is somewhat surprising as in dealing with local knowledge issues, power issues and differentials are known to occur rather frequently. It is equally known that in most cases, such power differentials are decided at the expense of local communities, reproducing the well-known cycles of local knowledge's marginalization and demise (cf. chapter 1.1.2).

In view of this, I consider it appropriate to include a normative layer, given the genuine fragility of the topic at hand. I therefore opted for relating the heuristic to the well-established and broad societal concept of 'sustainable development' to provide a minimum of normative guidance as to how future research and development projects involving local

knowledge could and should be designed. I chose sustainable development for two reasons specifically:

First, I noticed an initially somewhat astonishing congruence in part of the underlying premises, or values, of both 'sustainable development' and 'local knowledge'. 'Sustainable development' is said to belong to the "holistic approaches to solving complex, interrelated, and multi-dimensional problems" (Brand and Karvonen 2007:24) with its main accomplishment consisting in systematically combining issues that are generally treated either separately or as competitors. This pluralistic, inclusive approach to problem solving is also a characteristic feature of 'local knowledge' that departs from the premises of interconnectedness and embeddedness whereby humans and their behaviors are seen as part of a broader social, cultural, environmental and at times also spiritual whole. Solutions to problems therefore need to necessarily take into account the broader context and integrate competing interests to the greatest extent possible.

In addition to this shared focus on the 'bigger picture', there was a further, more pragmatic rationale for choosing sustainability, namely the decision to elaborate the framework in line with existing discourses, i.e. in line with a normative framework that is widely accepted and formative for societal debates on future development paths. 'Sustainable development' seemed to fulfill these requirements and, importantly, could also be expected to do so for the foreseeable future, as long-term schemes as the SDGs indicate. In a similar vein, opting for 'sustainable development' as the normative canvas was also guided by the wish to relate 'local knowledge' to this broader debate, opening up the topic to academic disciplines outside the traditional 'homeland' of anthropology.

However, suffice to say that such a normative layer can only do as much as providing the background against which subsequent actions are planned. The sheer existence of a normative canvas cannot guarantee that the requirements formulated in it are also implemented in the specific research or development project at hand. Nonetheless, it is my contribution to ensure to the best of my possibilities that the heuristic I propose does not deliberately promote and reproduce novel boundaries and, potentially, even inequalities.

In addition, I stressed at the onset of this project that the concept of 'sustainable development' is no direct part of the framework proposed, but has the role of a normative background setting against which the framework is construed and with which it has to comply. In other words, the heuristic itself does not make any direct reference to sustainability itself; rather, its structure and the interrelationship of concepts is laid out such that it is in line with the sustainability principles determined earlier (cf. chapter 3.2.2).

These considerations resulted in research question 3 (cf. chapter 1.2):

> *3) For the framework to be normatively specified with respect to sustainable development: What are basic and salient principles for defining sustainable development as the normative reference system with which the framework needs to be compatible?*

The related specification E details the requirement to clarify the character of the concept of 'sustainable development' for this research.

In the following, I briefly recall the tripartite sustainability conception formative for this research (cf. chapter 3.2.2 and illustration 74) and argue why I consider the three requirements determining this project's notion of sustainability to be fulfilled in the framework proposed.

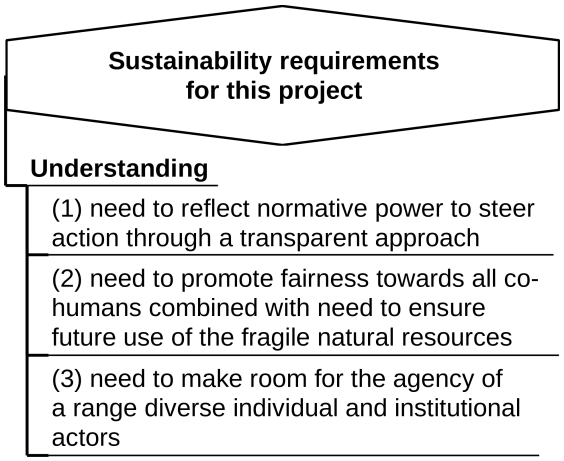

Illustration 74: Sustainability requirements for this project

The *first requirement* addresses the need for the framework to reflect a certain normative power to steer action that aims to empower the actual process of understanding. I argued earlier that this could be best reached by elaborating as transparent as possible an approach that allows to establish a solid basis upon which further action can be founded. Looking at the framework developed, I argue that it indeed is structured, systematic, easily accessible and comprehensible – at least for scientifically trained actors (cf. chapter 8.3). In addition to having a consistent structure that guides the person working with it, it also opens up a comprehensive perspective on the topic of local knowledge that is able to go beyond common existing notions. With the aim of covering and integrating as many characteristics of local knowledge as possible, it provides a comprehensive overview on a broad variety of topics that can arise when dealing with it.

The *second requirement* addresses the need for the heuristic to reflect two basic qualities in the way it is construed: On the one hand this concerns a) a *fundamental fairness* towards all co-humans and on the other hand b) a *determination to safeguard the lim-*

ited natural resources with a view to ensure their use for future generations.[294] These two qualities are briefly discussed in the following:

a) In terms of the fundamental fairness I reason that the heuristic addresses the four components constituting the notion of fairness (cf. chapter 3.2.2). More precisely, I took account of the components of *global view* and *universality* by ensuring that the framework dimensions are conceptualized in such an encompassing and at the same time flexible way that they should allow for covering any kind of local knowledge instance, regardless of whether it stems from rural/urban or industrialized/industrializing contexts. As for the component of *intra-generational justice*, I argue that this aspect too is considered in the heuristic I propose, namely in that I ensured that local knowledge is understood as socially construed and negotiated to emphasize the influence of the social world on constituting knowledge. With respect to the framework proposed, it is expressed in the inclusion of a whole set of concepts, namely the concept of the social aspects of knowledge (cf. chapter 7.2.4), the concept of the knowledge legitimation (cf. chapter 7.2.5), the concept of the knowledge sources (cf. chapter 7.2.6), the concept of accepted knowledge (cf. chapter 7.2.7), the concept of the knowledge holders (cf. chapter 7.2.8), the concept of the life-world context (cf. chapter 7.2.9) and, eventually, the three concepts on access to accepted knowledge, generation of knowledge and, lastly, transmission of knowledge (cf. chapters 7.2.10–7.2.12).

When it comes to the *anthropocentric view*, the situation is similar and yet more complicated. While it is true that some local knowledge forms center on humans as the focal point of all considerations and thus might be in line with this underlying tenet of sustainability, other local knowledge forms can be expected to strongly reject the idea of an exceptional position for mankind. By contrast, they rather understand humans as an intricate, but in no way exceptional part of the web of life. In fact, there are good reasons to believe that the feature of the 'anthropocentric view' might be the most problematic one for integrating the concepts of sustainable development and local knowledge.

b) With respect to the determination to protect and preserve the natural resources for future generations, I would argue that the aspect of the *limited natural resources* is covered by the inclusion of the concept of the life-world context of knowledge (cf. chapter 7.2.9) and the concept of the physical-material dimension of locality (cf. chapter 7.3.1). From differing perspectives, both concepts detail the state of the art of the natural environment, and more specifically, of the resources present in a given location. The com-

[294] I reiterate at this point that the framework's sustainability layer can only inform and guide one's way of approaching the topic in a normatively acceptable way, but has no power to ensure that local knowledge and/or its bearers are in fact e.g. treated with a corresponding respect or that the principle of intra-generational justice is observed.

ponents of *inter-generational justice* and *future orientation* are taken account of in the concept of the life-world context of the knowledge holders (cf. chapter 7.2.9) which also includes local preferences for future development paths and other endogenous development aspirations.

The *third requirement* details the need for the framework to conceptualize the understanding of local knowledge as a collective undertaking, which also includes factoring in the range and diversity of individual as well as institutional actors and components constituting and shaping this knowledge. Considering the heuristic from this perspective, I argue that I did, in fact, go to considerable lengths to ensure that as many perspectives on 'local knowledge' as possible are included. This entailed not only a whole set of academic disciplines from the humanities to the natural and social sciences, but additionally extended to literature from the applied domain of development studies. Furthermore, I also made an effort to consult additional literature and accounts on local knowledge published in countries with a strong local knowledge tradition – to the extent my language command allowed it or translations were available.

Recapitulating, I thus reason that I was able to integrate 'sustainable development' – more precisely the three requirements constituting the concept for this project (cf. chapter 3.2.2 and illustration 74) – as a normative canvas into the framework approach. As outlined earlier, this canvas serves to support and guide researchers and practitioners in approaching the topic of 'local knowledge' in a way that it is compatible with broader societal development goals such as preserving the well-being of today's and future generations based on endogenous development choices or the insight into the fragility of social-environmental systems and the finiteness of socio-ecological resources.

Working with a framework approach that incorporates a normative layer oriented towards sustainability can be expected to have a number of advantages. More precisely, I identify two main benefits, namely in that the normative layer…

(6) ...guides researchers and practitioners in approaching the topic in a way that is compatible with fundamental sustainability principles;

(7) ...allows opening up the discussion on local knowledge and relating it to the broader debate on sustainable development, thus going beyond disciplinary limitations and potentially advancing both debates.

In the following paragraphs, I briefly describe these two advantages.

Guidance towards approaching local knowledge issues in accordance with basic sustainability principles (6)

First, if understood in the sense of this research, the normative layer could support researchers and practitioners in approaching the topic in a way that strives for as balanced and differentiated an understanding as possible. In addition, it could serve to make sure that as little harm as possible is done by monitoring that no broader societal development goals are hampered in conducting research or development projects. Thus, the very existence of a normative reference system could contribute to sensitizing researchers and practitioners working with it to the issues at stake. This might be especially beneficial in the case of professionals who in fact wish to adequately contextualize their understanding, but whose subject-specific training did not familiarize them with designing interventions such that they do not run the risk of involuntarily engaging in promoting the very inequalities and power differentials that sustainability set out to tackle in the first place.

Integration of the debates on 'local knowledge' and 'sustainable development' (7)

A *second* motivation for opting for an inclusive approach consists in the conviction that the overall debate on 'local knowledge' could greatly benefit from being led not only in the discipline of anthropology, but also in the context of the broader debate on how future societal development could and, potentially, should unfold. Complementing this perspective, discussing 'local knowledge' in the frame of the sustainability discourse could also be beneficial in that it allows implementing local knowledge initiatives in the 'spirit' of sustainable development, thus advancing two agendas at the same time. This also answers "the call for more research into the viability of local knowledge as potential tool in sustainable development" (Breidlid 2009:140). Moreover, systematically studying and integrating the two debates could greatly contribute to generating new insights and advancing both debates and to proposing countermeasures against the existing fragmentation of academic and applied debates.

8.3 Epistemological challenges related to the framework development

Developing a framework for understanding local knowledge that claims to cover knowledge forms from all over the world regardless of the respective context amounts to a rather substantial, potentially even somewhat daring undertaking rich in challenges.

While I refrain from iterating the set of organizational challenges which I have accepted as frame conditions of the present project (cf. chapter 1.3.3), I focus on the type of

epistemological challenges. They do not concern the actual project setting or external factors, but are inherent to the subject-matter itself, i.e. to the study of alien knowledge forms under a scientific paradigm. Accordingly, such challenges also accompanied the development of the framework for ‘understanding local knowledge’. In the following, I outline four of them, discuss potential criticism that the proposed framework may evoke and close by arguing why regardless of these inherent limitations, I believe to have accomplished the main tasks I have set out to solve.

The first challenge questions whether framework approaches in general are a useful and adequate instrument to tackle the complex topic of understanding local knowledge forms or, more general, other epistemic contexts and whether it is possible to build bridges to connect these epistemological realms. In the scientific debate, several collections of characteristics describing local knowledge have been identified (cf. chapter 2.1.4), but so far there is no consensus regarding how to definitively conceptualize this type of knowledge. This, in turn, renders it significantly more difficult to make generalizations, the hallmark of scientific knowledge. As Sillitoe (1998b) stresses, local knowledge forms tend to be neither systematized nor universal; rather, the related practices work, which, in fact, suffices for the local population.

Indeed, there are good reasons for asking whether addressing local knowledge in all its diversity, variation and complexity by means of a systematic and structured heuristic does not run the risk of oversimplifying matters. This roots in the notion that for a generic framework to be truly generic it has to allow for a certain flexibility in the description of its components and for subsuming similar, yet not identical phenomena under inevitably simplifying umbrella terms. Both steps go at the expense of conceptional unambiguousness. Thus, such concerns question whether transferring highly diversified complex phenomena into structured and generic, but likely somewhat under-complex frameworks can come close to doing justice to the topic at hand.

The second challenge concerns *epistemological barriers* that might prevent outsiders from gaining an adequate understanding of local knowledge. In fact, it remains an open question whether one can meaningfully describe a topic with which one is not genuinely familiar. An exemplification of this is the thought experiment by the blind neuroscientist wondering whether she would be able to adequately describe the color ‘red’, i.e. something that lies beyond her own perceptional horizon. Some scholars go even further and postulate that the intentional preoccupation with and perception of complex issues such as local knowledge cannot suffice to gain an adequate understanding of

them.[295] Rather, they claim, one needs to reside within the context in question to be truly able to genuinely comprehend and appreciate the differences and variations: “You know it [i.e. local knowledge] as part of your person” (Sillitoe 2010:21). This, in turn, goes back to the understanding that from the outside, it can never be fully captured, what it truly means to belong to a specific culture. Some scholars are therefore critical of the attempt to understand local knowledge forms through instruments of other knowledge traditions. In their view, the challenge results mainly from the differing ways of organizing the world that manifest in differing mental categories. It might also explain why locals might be rather unfamiliar with thinking in terms of abstract, aggregated notions such as sustainability or environmental conservation brought up by scientifically-trained researchers or development practitioners. In view of this, it is at times argued that due to differing epistemic contexts, mutual understanding and a meaningful communication cannot be expected to be straightforward or potentially even feasible at all, given the limitations inherent to the outsider perspective.

The third challenge related to working with ‘local knowledge’ refers to the domain of ‘adequate translation’ of one’s insights. Provided that one considers local knowledge to be in itself epistemologically accessible if adequately approached, there remains the issue of how to translate what has been understood into foreign words and concepts. It is said that in this process of translating, one cannot help but run the risk of “further misconstru[ing] what it is that we manage to comprehend about other’s views and actions” (Sillitoe 1998b:229). This starts with the very choice of theories and strands of literature consulted to try to advance one’s understanding of the alien knowledge form. At the same time, there is no alternative for scientifically-trained individuals, as their intellectual tradition is a literate one and therefore expects them to “trade in words, and written words largely” (Sillitoe 2010:21–22). This, in turn, renders the understanding of the practical aspect of knowledge even more difficult, as “such knowledge cannot be reduced to words, certainly not that non-practitioners can appreciate” (Sillitoe 2010:21–22). It therefore is not surprising that the transmission of local knowledge among generations takes place not primarily by means of structured language, but rather through myths, symbols and rites. Thus, in conclusion, passing on what has been understood poses its own challenges, not the least due to frame conditions imposed by the scientific perspective.

[295] These proponents argue that the various forms of knowledge involve ways of apprehending the world that differ too significantly to allow for cross-epistemological understanding (cf. e.g. Escobar (1998)). Other scholars consider the emic perspective to be more relevant than the etic one for the interpretation of a culture and question the practice of defining local knowledge from an external perspective (cf. e.g. Battiste and Youngblood Henderson (2000); Olive (2014)).

The forth challenge is possibly the most consequential one in that it deals with power issues related to working across epistemologies. It condenses the preceding three challenges into the question whether projects on local knowledge can be conducted under truly ethically responsible conditions. The latter implies that such research or development interventions not only do no harm, but contribute to advancing the topic of 'local knowledge' – not only for outside interests, but primarily for the local population building this knowledge trove for decades, if not centuries.

Next to a number of promising studies that adequately engage with local knowledge, there are, regrettably, numerous examples for unethical approaches. Generally, they feature one or more of the following characteristics: They tend to impose their own perspectives and concepts of local knowledge onto the local population, not seldom without going as far as consulting the locals, but rather trusting fully in the accuracy of their external perspective. Unfortunately, such approaches have a high likelihood of displaying a simplified perspective by dissecting the notion of knowledge into unrelated parts that are no longer meaningful to the local population. At this point, the door is wide open for a subsequent instrumentalization and appropriation of local knowledge. These can take place when scientific and local ideas and practices are matched up within the Western paradigm of development. However, 'matching' tends to be some-what one-sided and mostly amounts to local knowledge having to undergo some form of scientification, mostly consisting of a combination of de-localization, de-contextualization and de-personalization.

Drivers of such processes are on the one hand academia, which is firmly oriented towards positivism and on the other hand development organizations, which aim at identifying generic and scalable solutions for communities or even entire regions they often deem much more homogeneous than they actually are. Regardless of who is actually responsible, appropriation is a highly problematic and loaded issue: The phenomenon of Westerners taking an interest and engaging in local knowledge traditions can potentially evoke memories from centuries of intercultural contact and colonial-style dominance over people, goods and knowledge. In such cases it is therefore essential to ask the question "Cui bono?" to clarify motives and expectations.

Own position vis-à-vis these challenges

In view of the above, I fully acknowledge that research involving local knowledge poses its own set of specific challenges, epistemological and ethical ones. I concede that people from highly different cultural backgrounds might deviate in their ideas about what constitutes knowledge to such an extent that cross-epistemological understanding can

be hampered and building bridges to connect these epistemological realms might appear impossible. In other words, I am aware that researching local knowledge involves, at least to a certain extent, traveling in unchartered territories with unknown outcome.

Notwithstanding these objections, I consider working with local knowledge to be a justified endeavor – given it takes place under certain conditions. In the following, I argue a) why I consider refraining from studying local knowledge to be no viable alternative before b) recalling the rationale of why I consider cross-epistemological understanding to be principally possible. I close with c) describing the conditions I would expect research or development projects involving local knowledge to observe and meet when engaging in this delicate undertaking.

a) In my understanding, questioning whether cross-epistemological understanding is feasible and research on the topic useful at all is a somewhat theoretical undertaking and rather detached from reality. As a matter of fact, the interest in local knowledge is steady and cannot be expected to vanish any time soon; accordingly, research and development projects involving local knowledge will most likely continue to be designed and conducted. In all its facets, local knowledge is a reality as much as are ongoing encounters between local and scientific knowledge. In fact, intercultural contact can only be expected to rise in the future. Thus, in my view, walking away from the topic is no viable alternative as it does not stop already existing, under-complex approaches to local knowledge from being re-instated time again. In contrast, I see much more potential in proposing a novel approach to understanding local knowledge – an approach that accepts these challenges as an integral part of the overall parcel or as inevitable characteristics of attempts at inter-epistemological bridging.

b) My conviction that cross-epistemological understanding can be reached is both informed by corresponding literature and supported by a personal propensity: Regardless of all cultural relativism, I found convincing references in the literature that substantial cross-epistemological and -cultural similarities exist. This led me to adopt a so-called ‘universalistic perspective’[296] – both as an expression of my personal preference for and interest in shared structures and patterns, but also as a reflection of a crucial insight into the existence of fundamental categories bridging across all kinds of disparities.

[296] A universalistic position assumes among others that regardless of all diversity and particularities, human behavior does not vary arbitrarily, but follows certain rules and patterns and therefore can be principally understood. As detailed earlier (cf. chapter 4.1), the universalism I am inclined to is moderate in that it aims at integrating to the greatest extent possible relativistic positions, thus ensuring that no additional unnecessary boundaries are established.

c) Having said that, I would like to stress that this does not imply that I consider all research or development projects involving local knowledge to be justified in themselves. In my understanding, two main aspects should be observed when engaging in such an undertaking.

First, working with local knowledge requires a specific mental attitude that acknowledges that by engaging with this topic, one leaves the realm of what is epistemologically familiar and can be grasped by referring to one's well-proven reference frame. Such a cautious, self-restricting and somewhat modest attitude towards one's own mental workings could best be termed by the notion of 'beginner's mind'[297]. It is similar to the 'reflexive understanding' postulated in this research (cf. chapter 1.3.2) in that it too scrutinizes potential external constraints and internal biases to prevent them from influencing one's perspective on the topic – to the extent this is epistemologically possible. However, going beyond the notion of 'reflexive understanding', the beginner's mind denotes a more fundamental attitude of 'knowing that one cannot conclusively know' when dealing with issues of local knowledge. This way, one's cross-epistemological insights are taken for what they factually are – preliminary interpretative approaches to be tested and potentially refined.

Second and concerning the approach to local knowledge itself, I consider it paramount to develop integrated approaches that strive for as much comprehensiveness and coverage of various local knowledge forms as possible. Importantly, seeing knowledge in its wider cultural, political and socio-economic context and, at least in a first step, independent of a pragmatic focus on the locally available natural resources is paramount. In fact, research on local knowledge could benefit greatly if the knowledge in question was no longer seen "as dissolvable into bites of information that can be matched up to the narrow concerns[298] of the development movement" (Sillitoe 2010:15) – or to the disciplinary interests of the research community, for that matter.

Accordingly, I opted for a conceptual-analytical approach to local knowledge that would allow me to encompassingly approach the topic and take account of the many disciplinary perspectives on it. This entailed identifying the fundamental dimensions as well as their interrelations and resulted in the elaboration of a conceptual-analytical, interdisciplinary and theory-based heuristic, able to inform research as much as development projects. In other words, I invested in systematically 'mapping out the topic' in an integrated framework approach to ensure that the perspective on the topic is as wide

[297] This expression is repeatedly mentioned in Zen Buddhist manuals and seems appropriate for the purpose at hand.

[298] Such concerns tend to be driven by the development agencies' own agendas and directed at improving specific, potentially isolated aspects of the local livelihood.

and encompassing as feasible. I consider this to represent a crucial first step in designing a novel approach to local knowledge, namely to provide an encompassing and interdisciplinary framework approach to 'understanding local knowledge' to advance the debate on the topic.

It, however, cannot be the solution to all the issues one encounters when dealing with local knowledge. While I posit to having contributed to clarifying the conceptual level – namely the very understanding of what topics can arise in discussing local knowledge, how these topics are interrelated, how the framework relates to 'sustainability' as its normative reference system and, lastly, how an additional layer of 'reflexive understanding' can contribute to contextualize the findings – I acknowledge that in its current theoretical form, the framework is foremost a contribution to advancing the theoretical academic and applied debates.[299]

8.4 Further research opportunities

Against the backdrop of having discussed the results of this research, along with a number of epistemological challenges encountered along the way, I conclude with outlining what I consider representing the most promising research opportunities I came upon/identified while elaborating the proposed framework.

First and with respect to the multi-disciplinary body of literature selected for the elaboration of the framework, I consider a complementation of the theoretical basis informing the framework development with inputs from additional academic debates and the applied realm to be a very productive avenue to take – under the premise that these features add qualitatively novel and indeed complementing perspectives to the analytical-conceptual exploration and analysis already conducted in this project. Such a revision would extend to the framework dimensions themselves and their interrelations and might have the benefit of safeguarding that the framework content and structure do not end up being imposed on the locals, but make sense to them and are considered an adequate and appropriate way.

In an attempt to do justice to the intricacies of the local knowledge debate, I went to considerable lengths to ensure that the most salient and fundamental characteristics of 'knowledge', 'locality' and, indirectly, 'understanding' are integrated into the heuristic. In this respect, being able to build upon the extensive literature studies conducted for the various preceding PhD projects on loosely related topics (cf. chapter b, preface and acknowledgments) was very helpful in covering all the academic and applied literature.

[299] Among others, I describe in the following chapter 8.4 the steps I consider necessary when aiming at going beyond the scientific realm and developing the theoretical framework into a practical tool.

However, it might not be surprising that such an individual undertaking can hardly ensure that the research topic is tackled exhaustively or that the totality of salient contributions to the topic can be identified. Thus, given that the framework aims at providing as comprehensive an approach to local knowledge, I see substantial benefits in complementing the set of salient theoretical building blocks.

Second, I propose advancing the debate on 'local knowledge' even further by setting an emphasis on the component of 'understanding'. In this project, I only attributed an auxiliary role to 'understanding', next to designing the component such that it guides the person working with the heuristic in critically reflecting on his/her insights and their (potential) contingency on external and/or internal biases and constraints. Importantly, though, this rather modest role results from having to limit the scope of the research and does not reflect its overall relevance or potential for advancing the debate. On the contrary, I consider it to be potentially highly beneficial to invest in 'zooming in' on the notion of 'understanding' and in scrutinizing how cross-cultural or cross-epistemological understanding comes about and how it could be improved by a more intricate insight into the inner workings of 'understanding'.

Third, I consider it a promising strategy to focus on the methodology applied in studies on local knowledge and emphasize the methodological dimension mostly implicit in the multifarious academic contributions. This would involve examining how these studies are informed methodically, namely under what kind of methodological premises 'local knowledge' is approached and how these preliminary assumptions, biases and preferences in and of themselves shape and influence research process and results. Moreover, it would also serve to gain greater clarity as to how to contextualize research activities by other scholars by allowing an understanding of whether they deem it adequate or necessary to explicitly address and reflect on their own influence on the research process. Lastly, such a research focus would also entail considering and potentially adapting one's own position regarding methodological transparency in an attempt to reduce one's own footprint in the research process and outcome. Summing up, an emphasis on methodology would have the benefit of clarifying the conditions under which specific research projects on local knowledge are conducted. It would allow one to check the theoretical constructs one is working with for implicit methodological instructions. In other words, it has the potential to provide information on what can be expected to be addressed and examined (for research) or, alternatively, tackled (for development interventions). Lastly, it can also provide valuable insights into the mindset of the researchers involved and their epistemological disposition by giving an indication as to what extent they show an awareness of the construed nature of their understand-

ing, the contingency of their insights and their position vis-à-vis the question whether there is a need to instruct others in critically reflecting on their own insights.

Forth, the vast scope of the multi-disciplinary literature analyses allowed me to only develop the proposed framework on a conceptual level. While this is fully consistent with the originally formulated research questions, I would have thoroughly enjoyed seeing it translated into an actual practical instrument. In fact, the application of the framework for understanding local knowledge in various empirical settings represents a secondary or long-term scope of this project. In this vein, it would be ideal if the framework could be applied practically, whereby it would be rewarding for this to happen in diverse settings, including in industrialized and industrializing countries and in rural and urban settings. In any case, a practical exposition to real world local knowledge would allow scrutinizing the heuristic and learning whether it is able to stand the test and what kind of potential adaptations need to be taken into consideration.

However, I also acknowledge that several tasks need to be solved before such a translation could be tackled. In its current form, the conceptual-analytical framework is foremost designed along scientific conceptions of the world and related rationales. This goes back to the project being a scientific undertaking focused on advancing the theoretical and applied debates. This also extends to the methodology applied in developing the heuristic and includes the genuinely scientific approach applied in this project of generating understanding by means of analytically dissecting concepts to rearrange them in a more meaningful way. It can only be assumed that such a way of looking at the world might be at odds with local worldviews that are said to favor inclusion and embeddedness.

In view of this situation, two aspects have to be advanced when aiming at developing a practical instrument: On the one hand, I see the need to relate the heuristic proposed here to existing policies, agreements and permits that are themselves generally grounded on international and bilateral treaties, the most important ones being the CBD and the Nagoya Protocol. Establishing such a relation would allow contributing to reduce the probability of local knowledge being appropriated by outsiders with an unsettling ease as it often was the case before the introduction of said policies.[300] Ideally, such a link should be integrated in some way into the sustainability canvas as this would ideally relate these policies to their home debate on where societal development should head to. I consider this link to be justified as for most research topics on local knowledge, the use of biological resources is by all means as essential as are the cul-

[300] There is no doubt that the sheer existence of such policies does not improve the situation in itself; it, however, provides interested parties salient reference points for promoting an alternative approach.

tural meanings attributed to these resources. Moreover, relating the heuristic to existing and internationally accepted policies, which outline the rights and tasks associated with biodiversity at an international level also has the benefit of additionally emphasizing the sustainability orientation of the heuristic developed.

On the other hand, there are open questions with respect to how to methodically include local knowledge and, thus, the local perspective into the heuristic. In fact, the adequate inclusion of the local perspective seems to generally represent the most salient challenge in working with local knowledge. This is also reflected in the repeated calls by both scholars and practitioners for strengthening local participation in research and development endeavors; in this vein, they often emphasize that finding ways to truly integrate and enhancing appreciation of the local perspective is paramount. Generally speaking, necessary methodological adaptations involve primarily researching and advancing the development of procedures that facilitate the negotiation of envisaged research or development interventions between different epistemic communities (for a detailed account cf. e.g. Bicker et al. (2004)).[301] They could facilitate cross-epistemological and -cultural understanding in that they prepare the ground for generating acceptance of the fact that knowledge is construed differently and for acknowledging that the reliability, or legitimation, of knowledge is evaluated in differing ways, leading to differing calls for action and, potentially, development paths. In any case, understanding each other's rationale and, ideally, finding common ground are crucial steps that a revision of the framework needs to incorporate and promote. By investing in the elaboration of these missing methodological elements, the heuristic proposed here could in fact contribute to facilitating a meaningful participation by and integration of local people in research and development endeavors, from design to management and evaluation[302]. In view of this, the broad and inclusive approach elaborated here has the potential to contribute to tackling contemporary issues, all the more as solutions to pressing global issues were understood to lie in the converse of differing ways of knowing. In fact, it can be expected that responses to the complex problems of the 21st century such as climate change, biodiversity loss, global distributive injustice or increased global migration flows will build upon knowledge from diverse origins, developed and accumulated under various contexts and paradigms.

---

301 Methodologies of this type have already been identified with respect to the inclusion of local knowledge into formal education. There, it proved crucial for them to be as culturally representative as possible; prominent examples for the realm of knowledge transmission include field trips, observation and informal instructions (Reyes-García et al. (2010)).

302 Such an approach is called for by a number of local knowledge researcher from different disciplines (cf. e.g Carvalho and Frazão-Moreira (2011); Vandebroek (2011)). It would contrast with earlier applied approaches that did not invest as much in getting familiar with the overall livelihood of the local people, their worldview and choices, but were prompter to promote perspectives and assessments by Western research or development institutions.

9 References

A Dictionary of Sociology (online). 2016. “Thick Description.” Encyclopedia.com edited by Oxford University Press. Retrieved October 31, 2016 (http://www.encyclopedia.com/social-sciences/dictionaries-thesauruses-pictures-and-press-releases/thick-description).

Aas, Christina, Adele Ladkin, and John Fletcher. 2005. “Stakeholder Collaboration and Heritage Management.” *Annals of Tourism Research* 32(1):28–48.

Abdelghafour, Nassima. 2017. “Randomized Controlled Experiments to End Poverty? A Sociotechnical Analysis.” *Anthropologie & développement* (46–47):235–62.

Abels, Heinz. 2001. *Interaktion, Identität, Präsentation - Kleine Einführung in interpretative Theorien der Soziologie*. Wiesbaden: Westdeutscher Verlag.

Abu-Lughod, Lila. 1991. “Writing against Culture.” Pp. 137–62 in *Recapturing Anthropology: Working in the Present*, edited by R.G. Fox. Santa Fe: School of American Research Press.

Acheraiou, Amar. 2011. *Questioning Hybridity, Postcolonialism and Globalization*. Basingstoke: Palgrave Macmillan.

Adams, Marcus. 2009. “Empirical Evidence and the Knowledge-That/Knowledge-How Distinction.” *Synthese* 170(1):97–114.

Adams, Matthew. 2006. “Hybridizing Habitus and Reflexivity: Towards an Understanding of Contemporary Identity?” *Sociology* 40(3):511–28.

Adams, William M. 2006. “The Future of Sustainability: Re-Thinking Environment and Development in the Twenty-First Century.” P. 31 in *Report of the IUCN renowned thinkers meeting*, vol. 29.

Adger, W. Neil. 1999. “Social Vulnerability to Climate Change and Extremes in Coastal Vietnam.” *World Development* 27(2):249–69.

Adler, Johnathan. 2014. “Epistemological Problems of Testimony.” The Stanford Encyclopedia of Philosophy edited by E.N. Zalta. Retrieved September 10, 2013 (http://plato.stanford.edu/archives/spr2014/entries/testimony-episprob/).

Adolf, Marian. 2010. “Nico Stehr: Konzeption der Wissensgesellschaft.” Pp. 53–63 in *Handbuch Wissensgesellschaft. Theorien, Themen und Probleme*, edited by A. Engelhardt and L. Kajetzke. Bielefeld: Transcript.

Agar, Michael. 2011. “Making Sense of One Other for Another: Ethnography as Translation.” *Language & Communication* 31(1):38–47.

Agar, Michael, and Jerry R. Hobbs. 1982. “Interpreting Discourse: Coherence and the Analysis of Ethnographic Interviews.” *Discourse processes* 5(1):1–32.

Agrawal, Arun. 1995. “Dismantling the Divide between Indigenous and Scientific Knowledge.” *Development and Change* 26(3):413–39.

Agrawal, Arun. 2002. “Indigenous Knowledge and the Politics of Classification.” *International Social Science Journal* 54(173):287–97.

Agrawal, Arun. 2004. “Indigenous and Scientific Knowledge: Some Critical Comments.” *Indigenous Knowledge and Development Monitor* 3(3):7–8.

Agyeman, Julian. 2005. *Sustainable Communities and the Challenges of Environmental Justice*. New York: University Press.

Agyeman, Julian. 2008. “Toward a ‘Just’ Sustainability?” *Continuum* 22(6):751–56.

Akerele, Olayiwola, Vernon Heywood, and Hugh Synge. 1991. *The Conservation of Medicinal Plants*. Cambridge: Cambridge University Press.

Akerreta, Silvia, Maria Isabel Calvo, and Rita Yolanda Cavero. 2010. “Ethnoveterinary Knowledge in Navarra (Iberian Peninsula).” *Journal of Ethnopharmacology* 130(2):369–78.

Akrap, Gordan, and Pavle Kalinić. 2015. “Forced Migrations–Powerful Non-Kinetic Weapon.” *National Security and the Future* 16(2–3):10–28.

de Albuquerque, Ulysses Paulino, Gustavo Taboada Soldati, Shana Sampaio Sieber, Patrícia Muniz de Medeiros, et al. 2011. “Rapid Ethnobotanical Diagnosis of the Fulni-ô Indigenous Lands (NE Brazil): Floristic Survey and Local Conservation Priorities for Medicinal Plants.” *Environment, development and sustainability* 13(2):277–92.

de Albuquerque, Ulysses Paulino, Gustavo Taboada Soldati, Shana Sampaio Sieber, Marcelo Alves Ramos, et al. 2011. “The Use of Plants in the Medical System of the Fulni-ô People (NE Brazil): A Perspective on Age and Gender.” *Journal of Ethnopharmacology* 133(2):866–73.

de Albuquerque, Ulysses Paulino, and Natalia Hanazaki. 2009. “Five Problems in Current Ethnobotanical Research — and Some Suggestions for Strengthening Them.” *Human Ecology* 37(5):653–61.

Ali, Abu Muhammad Shajaat. 2003. “Farmers’ Knowledge of Soils and the Sustainability of Agriculture in a Saline Water Ecosystem in Southwestern Bangladesh.” *Geoderma* 111(3–4):333–53.

Allemann, Sven. 2017. “Framework for Sustainability Assessments Providing a Basis for Evidence-Based and Goal-Oriented Decision Making - Based on the Example of Electric Power Systems.” University of Basel.

Alonso, Ana María. 2004. “Conforming Disconformity: ‘Mestizaje,’ Hybridity, and the Aesthetics of Mexican Nationalism.” *Cultural Anthropology* 19(4):459–90.

Alston, W. 1971. “Varieties of Privileged Access.” *American Philosophical Quarterly* 8:223–41.

Alter, Joseph S. 2007. “The Once and Future ‘Apeman.’” *Current Anthropology* 48(5):637–52.

Alves, Rômulo R. N., and Ierecê M. L. Rosa. 2007. “Biodiversity, Traditional Medicine and Public Health: Where Do They Meet?” *Journal of Ethnobiology and Ethnomedicine* 3(1):14.

Alvesson, Mats, and Kaj Sköldberg. 2017. *Reflexive Methodology: New Vistas for Qualitative Research*. London: Sage.

Anderson, Benedict R. O’G. 1983. *Imagined Communities: Reflections on the Origin and Spread of Nationalism*. London: Verso.

Anderson, Eugene Newton. 2012. “Ethnobiology: Overview of a Growing Field.” Pp. 1–14 in *Ethnobiology*, edited by E.N. Anderson, D. Pearsall, E. Hunn, and N. Turner. Hoboken NJ: John Wiley & Sons.

Anderson, Eugene Newton. 2016. “Emotions, Motivation, and Behavior in Cognitive Anthropology.” Pp. 314–30 in *A Companion to Cognitive Anthropology*, edited by D. Kronenfeld, G. Bennardo, V.C. de Munck, and M.D. Fischer. Chichester, UK: Wiley Blackwell.

Anderson, Lisa. 2008. “Reflexivity.” The SAGE Dictionary of Qualitative Management Research edited by R. Thorpe and R. Holt. Retrieved October 2, 2019 (http://methods.sagepub.com/reference/the-sage-dictionary-of-qualitative-management-research/n86.xml).

Anthwal, Ashish, Ramesh C. Sharma, and Archana Sharma. 2006. *Sacred Groves: Traditional Way of Conserving Plant Diversity in Garhwal Himalaya, Uttaranchal*. Marsland Company.

Antweiler, Christoph. 1995. “Lokales Wissen. Grundlagen, Probleme, Bibliographie.” Pp. 19–52 in *Lokales Wissen und Entwicklung. Zur Relevanz kulturspezifischen Wissens für Entwicklungsprozesse*, edited by S. Honerla. Saarbrücken: Verlag für Entwicklungspolitik.

Antweiler, Christoph. 1998. “Local Knowledge and Local Knowing: An Anthropological Analysis of Contested ‘Cultural Products’ in the Context of Development.” *Anthropos* 93(4/6):469–94.

Antweiler, Christoph. 2004. “Local Knowledge Theory and Methods: An Urban Model from Indonesia.” Pp. 1–34 in *Investigating Local Knowledge: New Directions, New Approaches*, edited by A. Bicker, P. Sillitoe, and J. Pottier. Aldershot: Ashgate Publishing.

Antweiler, Christoph. 2008. “Wissenschaft quer durch die Kulturen - Wissenschaft und lokales Wissen als Formen universaler Rationalität.” Pp. 67–94 in *Wege zur Wissenschaft. Eine interkulturelle Perspektive. Grundlagen, Differenzen, Interdisziplinäre Dimensionen*, edited by H.R. Yousefi, K. Fischer, R. Lüthe, and P. Gerdsen. Nordhausen: Traugott Bautz.

Antweiler, Christoph. 2009. “Kognitive Anthropologie. Kulturelle Rationalität und lokales Wissen.” Pp. 45–67 in *Anthropologische Aufbrüche. Alttestamentliche und interdisziplinäre Zugänge zur historischen Anthropologie*, edited by A. Wagner. Göttingen: Vandenhoeck & Ruprecht.

Antweiler, Christoph. 2012. “Urban Environmental Knowledge as Citizens’ Science.” Pp. 55–91 in *Environmental Uncertainty and Local Knowledge. Southeast Asia as Laboratory of Global Ecological Change*. Bielefeld: Transcript.

Antweiler, Christoph. 2016. “Local Knowledge as a Universal Social Product: A General Model and a Case from Southeast Asia.” Pp. 165–90 in *Ethnic and Cultural Dimensions of Knowledge*, edited by P. Meusberger, T. Freytag, and L. Suarsana. Cham: Springer.

Antweiler, Christoph, and Diane Kerns. 2016. *Our Common Denominator: Human Universal Revisited*. New York/Oxford: Berghahn.

Aparna, Pareek, and P. C. Trivedi. 2011. “Cultural Values and Indigenous Knowledge of Climate Change and Disaster Prediction in Rajasthan, India.” *Indian Journal of Traditional Knowledge* 10(1):183–89.

Appadurai, Arjun. 1988. “Putting Hierarchy in Its Place.” *Cultural Anthropology* 3(1):36–49.

Appadurai, Arjun. 1996a. “Disjuncture and Difference in the Global Cultural Economy.” Pp. 27–47 in *Modernity at Large. Cultural Dimensions of Globalization*, edited by A. Appadurai. Minneapolis: University of Minnesota Press.

Appadurai, Arjun. 1996b. “Global Ethnoscapes: Notes and Queries for a Transnational Anthropology.” Pp. 48–65 in *Modernity at Large. Cultural Dimensions of Globalization*, edited by A. Appadurai. Minneapolis: University of Minnesota Press.

Appadurai, Arjun. 1996c. “Here and Now.” Pp. 1–23 in *Modernity at Large. Cultural Dimensions of Globalization*, edited by A. Appadurai. Minneapolis: University of Minnesota Press.

Appadurai, Arjun. 1996d. *Modernity at Large: Cultural Dimensions of Globalization*. Minneapolis: University of Minnesota Press.

Appadurai, Arjun. 1996e. “The Production of Locality.” Pp. 178–99 in *Modernity at Large. Cultural Dimensions of Globalization*, edited by A. Appadurai. Minneapolis: University of Minnesota Press.

Appiah, K. Anthony. 1996. “Race, Culture, Identity: Misunderstood Connections.” *Tanner Lectures on Human Values* 17:51–136.

Appiah, K. Anthony. 1997. “Cosmopolitan Patriots.” *Critical Inquiry* 23(3):617–39.

Arce, Alberto, and Norman Long. 1992. “The Dynamics of Knowledge: Interfaces between Bureaucrats and Peasants.” Pp. 211–46 in *Battlefields of Knowledge: The Interlocking of Theory and Practice in Social Research and Development*, edited by N. Long and A. Long. London: Routledge.

Arditti, Joseph. 1984. “An History of Orchid Hybridization, Seed Germination and Tissue Culture.” *Botanical journal of the Linnean Society* 89(4):359–81.

Arias, Santa. 2010. “Rethinking Space: An Outsider’s View of the Spatial Turn.” *GeoJournal* 75(1):29–41.

Aristotle. 2003. *Metaphysics (Books I-IX)*. edited by H. Tredennick. Cambridge, Mass./London: Harvard University Press.

Aswani, Shankar, Anne Lemahieu, and Warwick H. H. Sauer. 2018. “Global Trends of Local Ecological Knowledge and Future Implications.” *PloS one* 13(4):e0195440.

Atran, Scott. 1983. “Covert Fragmenta and the Origins of the Botanical Family.” *Man* 18(1):51–71.

Atran, Scott. 1985. “The Nature of Folk-Biological Life Forms.” *American Anthropologist* 87(2):289–315.

Atran, Scott. 1990. *Cognitive Foundations of Natural History: Towards an Anthropology of Science*. Cambridge, UK/New York/Paris: Cambridge University Press/Editions de la Maison des Sciences de l’homme.

Atran, Scott. 1998. “Folk Biology and the Anthropology of Science: Cognitive Universals and Cultural Particulars.” *Behavioral and brain sciences* 21(4):547–69.

Attia, Mariam, and Julian Edge. 2017. “Be(Com)Ing a Reflexive Researcher: A Developmental Approach to Research Methodology.” *Open Review of Educational Research* 4(1):33–45.

Audi, Robert. 1998. *Epistemology: A Contemporary Introduction to the Theory of Knowledge*. London/New York: Routledge.

Audi, Robert. 2002. “The Sources of Knowledge.” Pp. 71–94 in *The Oxford Handbook of Epistemology*, edited by P.K. Moser. Oxford/New York: Oxford University Press.

Austen, Jane. 1983. *Emma*. Hong Kong: Oxford University Press.

Ayer, Alfred Jules. 1971. *The Problem of Knowledge*. Harmondsworth: Penguin.

Baird, Ian G. 2015. “Translocal Assemblages and the Circulation of the Concept of ‘Indigenous Peoples’ in Laos.” *Political Geography* 46:54–64.

Baker, Shalanda H. 2012. *Why the IFC’s free, prior, and informed consent policy doesn’t matter (yet) to indigenous communities affected by development projects*. San Francisco.

Bakraina, Falu. 2008. “Hybridity.” Pp. 1–3 in *International Encyclopedia of the Social Sciences*, vol. 28, edited by W.A. Darity. Retrieved March 15, 2017 (https://www.encyclopedia.com/social-sciences-and-law/sociology-and-social-reform/sociology-general-terms-and-concepts/hybridity).

Baldassar, Loretta, Mihaela Nedelcu, Laura Merla, and Raelene Wilding. 2016. “ICT-Based Co-Presence in Transnational Families and Communities: Challenging the Premise of Face-to-Face Proximity in Sustaining Relationships.” *Global Networks* 16(2).

Balée, William. 1993. “Review: Ethnobiological Classification: Principles of Categorization of Plants and Animals in Traditional Societies.” ethnobiology.org. Retrieved June 11, 2017 (https://ethnobiology.org/sites/default/files/pdfs/JoE/13-1/BREthnobiologicalClassification.pdf).

Bañon Gomis, Alexis J., Manuel Guillén Parra, W. Michael Hoffman, and Robert E. Mcnulty. 2011. “Rethinking the Concept of Sustainability.” *Business and Society Review* 116:171–91.

Baptiste, Brigitte, Diego Pacheco, Manuela Carneiro da Cunha, and Sandra Diaz. 2017. *Knowing Our Lands and Resources: Indigenous and Local Knowledge of Biodiversity and Ecosystem Services in the Americas*. Paris: UNESCO Publishing.

Barnes, Barry, David Bloor, and John Henry. 1996. *Scientific Knowledge: A Sociological Analysis*. London: Athlone.

Barnett, Jon, and W. Neil Adger. 2007. “Climate Change, Human Security and Violent Conflict.” *Political Geography* 26(6):639–55.

Barnhardt, Ray. 2005. “Indigenous Knowledge Systems and Alaska Native Ways of Knowing.” *Anthropology & education quarterly* 36(1):8–23.

Barreau Daly, Antonia. 2014. “Narrating Changing Foodways: Wild Edible Plant Knowledge and Traditional Food Systems in Mapuche Lands of the Andean Temperate Forests, Chile.” University of British Columbia.

Barry, Andrew. 2007. “Political Intervention.” Pp. 287–307 in *Technoscience - The Politics of Interventions*, edited by K. Asdal, B. Brenna, and I. Moser. Oslo: Unipub.

Barth, Fredrik. 1995. “Other Knowledge and Other Ways of Knowing.” *Journal of anthropological research* 51(1):65–68.

Barth, Fredrik. 2001. “Rethinking the Object of Anthropology.” *American Anthropologist* 103(2):435–37.

Barth, Fredrik. 2002. “An Anthropology of Knowledge.” *Current anthropology* 43(1):1–18.

Bateson, Gregory. 1955. “A Theory of Play and Fantasy.” *Psychiatric research reports* 2:39–51.

Battiste, Marie. 2002. *Indigenous Knowledge and Pedagogy in First Nations Education: A Literature Review with Recommendations*. National Working Group on Education Ottawa, Canada.

Battiste, Marie, and James [Sa'ke'j] Youngblood Henderson. 2000. *Protecting Indigenous Knowledge and Heritage: A Global Challenge*. Saskatoon, CA: Purish Publishing.

Baumberger, Christoph, Claus Beisbart, and Georg Brun. 2016. "What Is Understanding? An Overview of Recent Debates in Epistemology and Philosophy of Science." Pp. 17–50 in *Explaining Understanding*, edited by S. Grimm, C. Baumberger, and S. Ammon. New York: Routledge.

Baumgartner, Ruedi, A. Gurdip, Gopal K. Karanth, and V. Ramaswamy. 2002. "Researchers in Dialogue with Local Knowledge Systems: Reflections on Mutual Learning and Empowerment." Pp. 255–304 in *Local Environmental Management in a North-South Perspective: Issues of Participation and Knowledge Management*, edited by M. Flury and U. Geiser. Zurich: VdF Hochschulverlag.

Bealer, George. 1996. "A Priori Knowledge and the Scope of Philosophy." *Philosophical Studies* 81:121–42.

Bealer, George. 1998. "Intuition and The Autonomy of Philosophy." Pp. 201–39 in *Rethinking Intuition: The Psychology of Intuition and Its Role In Philosophical Inquiry*, edited by M.R. DePaul and W.M. Ramsey. Lanham: Rowman & Littlefield.

Beall, Allyson, Fritz Fiedler, Jan Boll, and Barbara Cosens. 2011. "Sustainable Water Resource Management and Participatory System Dynamics. Case Study: Developing the Palouse Basin Participatory Model." *Sustainability* 3(12):720–42.

Becker, Julia, David Johnston, Heather Lazrus, George Crawford, and Dave Nelson. 2008. "Use of Traditional Knowledge in Emergency Management for Tsunami Hazard: A Case Study from Washington State, USA." *Disaster Prevention and Management: An International Journal* 17(4):488–502.

Begoray, Deborah L., and Elizabeth M. Banister. 2010. "Reflexivity." Encyclopedia of Case Study Research edited by A. Mills, G. Durepos, and E. Wiebe. Retrieved October 2, 2019 (http://methods.sagepub.com/reference/encyc-of-case-study-research).

Beharry, Shruti, and Michael Heinrich. 2018. "Is the Hype around the Reproductive Health Claims of Maca (Lepidium Meyenii Walp.) Justified?" *Journal of Ethnopharmacology* 211:126–70.

Behler, Constantin. 2001. "Habitus." CB's Glossary for Students. Retrieved April 16, 2014 (http://faculty.washington.edu/cbehler/glossary/habitus.html).

Behrendt, Larissa, and Loretta Kelly. 2008. *Resolving Indigenous Disputes: Land Conflict and Beyond*. Leichhardt, N.S.W.: Federation Press.

Bellon, Mauricio R. 1995. "Farmers' Knowledge and Sustainable Agroecosystem Management: An Operational Definition and an Example from Chiapas, Mexico." *Human Organization* 54(3):263–72.

Bengson, John, and Marc A. Moffett. 2012. "Two Conceptions of Mind and Action: Knowing How and the Philosophical Theory of Intelligence." Pp. 3–58 in *Knowing How: Essays on Knowledge, Mind, and Action*, edited by J. Bengson and M.A. Moffett. Oxford: Oxford University Press.

Benson, Rodney. 2006. “News Media as a ‘Journalistic Field’: What Bourdieu Adds to New Institutionalism, and Vice Versa.” *Political Communication* 23:187–202.

Benz, A. 2014. “Mobility, Multi-Locality and Translocal Development: Changing Livelihoods in the Karakoram.” *Geographica Helvetica* 69:259–70.

Berger, Peter L., and Thomas Luckmann. 1966. *The Social Construction of Reality: A Treatise in the Sociology of Knowledge*. Garden City, N.Y.: Anchor Press.

Berkes, Fikret. 1993. “Traditional Ecological Knowledge in Perspective.” Pp. 1–9 in *Traditional Ecological Knowledge: Concepts and Cases*, vol. 1, edited by J.T. Inglis. Ottawa: Canadian Museum of Nature/International Development Research Centre.

Berkes, Fikret. 2007. “Community-Based Conservation in a Globalized World.” *Proceedings of the National Academy of Sciences* 104(39):15188–93.

Berkes, Fikret, Mina Kislalioglu Berkes, and Helen Fast. 2007. “Collaborative Integrated Management in Canada’s North: The Role of Local and Traditional Knowledge and Community-Based Monitoring.” *Coastal Management* 35(1):143–62.

Berkes, Fikret, Johan Colding, and Carl Folke. 2000. “Rediscovery of Traditional Ecological Knowledge as Adaptive Management.” *Ecological Applications* 10(5):1251–62.

Berkes, Fikret, and Carl Folke. 1992. “A Systems Perspective on the Interrelations between Natural, Human-Made and Cultural Capital.” *Ecological Economics* 5(1):1–8.

Berkes, Fikret, and Nancy J. Turner. 2006. “Knowledge, Learning and the Evolution of Conservation Practice for Social-Ecological System Resilience.” *Human Ecology* 34(4):479–94.

Berking, Helmuth. 2003. “‘Ethnicity Is Everywhere’: On Globalization and the Transformation of Cultural Identity.” *Current Sociology* 51(3–4):248–64.

Berlin, Brent. 1992. *Ethnobiological Classification. Principles of Categorization of Plants and Animals in Traditional Societies*. Princeton: Princeton University Press.

Berlin, Brent, Dennis E. Breedlove, and Peter H. Raven. 1973. “General Principles of Classification and Nomenclature in Folk Biology.” *American anthropologist* 75(1):214–42.

Berlin, Brent, Dennis Eugene Breedlove, and Peter H. Raven. 1974a. *Principles of Tzeltal Plant Classification: An Introduction to the Botanical Ethnography of a Mayan-Speaking People of Highland Chiapas*. New York: Academic Press.

Berlin, Brent, Dennis Eugene Breedlove, and Peter H. Raven. 1974b. *Principles of Tzeltal Plant Classification*. New York/London: Academic Press.

Berlin, Brent, and Paul Kay. 1969. *Basic Color Terms: Their Universality and Evolution*. Berkeley & Los Angeles: University of California Press.

Bernecker, Sven. 2011. “Memory Knowledge.” Pp. 326–34 in *The Routledge Companion to Epistemology*, edited by S. Bernecker and D. Pritchard. London/New York: Routledge.

Bernecker, Sven, and Fred I. Dretske. 2000a. “Introduction.” Pp. 3–6 in *Knowledge. Readings in Contemporary Epistemology*, edited by S. Bernecker and F.I. Dretske. Oxford/New York: Oxford University Press.

Bernecker, Sven, and Fred I. Dretske. 2000b. *Knowledge: Readings in Contemporary Epistemology*. Oxford/New York: Oxford University Press.

El Berr, Sandy. 2009. “Wer sind hier die Experten? Lokales Wissen und interkulturelle Kommunikation in Entwicklungsprojekten mit Indigenen Ecuadors.” Rheinische Friedrich-Wilhelms-Universität, Bonn.

Beyer, Peter. 2007. “Glocalization and Globalization.” Pp. 98–117 in *The SAGE Handbook of the Sociology of Religion*, edited by J.A. Beckford and N.J. Demerath. London: AGE Publications.

Bicker, Alan, Paul Sillitoe, and Johan Pottier. 2004. *Development and Local Knowledge*. London/New York: Routledge.

Biermann, Frank, Norichika Kanie, and Rakhyun E. Kim. 2017. “Global Governance by Goal-Setting: The Novel Approach of the UN Sustainable Development Goals.” *Current Opinion in Environmental Sustainability* 26:26–31.

Bierschenk, Thomas. 2014. “From the Anthropology of Development to the Anthropology of Global Social Engineering.” *Zeitschrift für Ethnologie* 139(1):73–97.

Biggam, Carole Patricia. 2012. *The Semantics of Colour: A Historical Approach*. Cambridge, UK: Cambridge University Press.

Biolsi, Thomas. 2005. “Imagined Geographies: Sovereignty, Indigenous Space, and American Indian Struggle.” *American Ethnologist* 32(2):239–59.

Birhan, Wubet, Mirutse Giday, and Tilahun Teklehaymanot. 2011. “The Contribution of Traditional Healers’ Clinics to Public Health Care System in Addis Ababa, Ethiopia: A Cross-Sectional Study.” *Journal of Ethnobiology and Ethnomedicine* 7(1):39.

Bitterli, Urs. 1968. “Der ‘Edle Wilde’ - Zeitphänomen und zeitloses Wunschbild.” *Schweizer Monatshefte* 48:1121–27.

Bloch, Maurice. 1991. “Language, Anthropology and Cognitive Science.” *Man* 183–98.

Blount, Ben. 2011. “A History of Cognitive Anthropology.” Pp. 9–29 in *A Companion to Cognitive Anthropology*, edited by D.B. Kronenfeld, G. Bennardo, V.C. de Munck, and M.D. Fischer. Oxford: Wiley-Blackwell.

Bollig, Michael, and A. Schulte. 1999. “Environmental Change and Pastoral Perceptions: Degradation and Indigenous Knowledge in Two African Pastoral Communities.” *Human Ecology* 27(3):493–514.

Bonacker, Thorsten, and Andreas Reckwitz. 2007. “Kulturen der Moderne.” in *Soziologische Perspektiven der Gegenwart*. Frankfurt a.M & New York: Campus.

Bonta, Mark, Oscar Flores Pinot, Daniel Graham, Jody Haynes, and German Sandoval. 2006. “Ethnobotany and Conservation of Tiusinte (Dioon Mejiae Standl. & LO Williams, Zamiaceae) in Northeastern Honduras.” *Journal of Ethnobiology* 26(2):228–57.

Bonz, Jochen. 2006. “Das Kultur-Wissen des Habitus. Ausführungen zu Pierre Bourdieus Rekonzeptualisierung des ethnologischen Kulturbegriffs angesichts der Kultur der Moderne.” Pp. 91–112 in *Willkürliche Grenzen. Das Werk Pierre Bourdieus in interdisziplinärer Anwendung*, edited by M. Hillebrand, P. Krüger, A. Lilge, and K. Struve. Bielefeld: Transcript.

Borgatti, Stephen P., and Daniel S. Halgin. 2016. “Consensus Analysis.” Pp. 171–90 in *A Companion to Cognitive Anthropology*, edited by D.B. Kronenfeld, G. Bennardo, V.C. De Munck, and M.D. Fischer. Chichester, UK: Wiley Blackwell.

Bork-Hüffer, Tabea, Birte Rafflenbeul, Zhigang Li, Frauke Kraas, and Desheng Xue. 2016. “Mobility and the Transiency of Social Spaces: African Merchant Entrepreneurs in China.” *Population, Space and Place* 22:199–211.

Bornemann, Basil, Philipp Lange, and Paul Burger. 2018. “Towards Systematic Understandings of Sustainability Governance - a Conceptual Meta-Framework.” Pp. 60–78 in *Sustainability Governance and Hierarchy*, edited by P. Hamman. New York: Routledge.

Borofsky, Robert. 1994. “On the Knowledge and Knowing of Cultural Activities.” Pp. 331–47 in *Assessing cultural anthropology*, edited by R. Borofsky. New York: McGraw-Hill.

Boswell, Rosabelle. 2005. “Unravelling le malaise Créole: hybridity and marginalisation in Mauritius.” *Identities: global studies in culture and power* 12(2):195–221.

Bourdieu, Pierre. 1966. “L’école conservatrice. Les inégalités devant l’école et devant la culture.” *Revue française de sociologie* 7(3):325–47.

Bourdieu, Pierre. 1977. *Outline of a Theory of Practice*. Cambridge, UK: Cambridge University Press.

Bourdieu, Pierre. 1983. “Ökonomisches Kapital, kulturelles Kapital, soziales Kapital.” Pp. 183–98 in *Soziale Ungleichheiten*, edited by R. Kreckel. Baden-Baden: Nomos.

Bourdieu, Pierre. 1984. *Distinction: A Social Critique of the Judgement of Taste*. London: Routledge.

Bourdieu, Pierre. 1985. *Sozialer Raum und “Klassen”: Leçon sur la leçon. Zwei Vorlesungen*. Frankfurt a.M.: Suhrkamp.

Bourdieu, Pierre. 1987. *Choses dites*. Paris: Éditions de Minuit.

Bourdieu, Pierre. 1990a. *The Logic of Practice*. Stanford: Stanford University Press.

Bourdieu, Pierre. 1990b. “The Scholastic Point of View.” *Cultural anthropology* 5(4):380–91.

Bourdieu, Pierre. 1992. *Die verborgenen Mechanismen der Macht. Schriften zu Politik und Kultur I*. Hamburg: VSA.

Bourdieu, Pierre. 1993a. *Satz und Gegensatz. Über die Verantwortung der Intellektuellen*. Frankfurt a.M.: Fischer Verlag.

Bourdieu, Pierre. 1993b. *Soziologische Fragen*. Frankfurt a.M.: Suhrkamp.

Bourdieu, Pierre. 1993c. *The Field of Cultural Production: Essays on Art and Literature*. Cambridge, UK: Polity Press.

Bourdieu, Pierre. 1997. *Méditations pascaliennes*. Paris: Ed. du Seuil.

Bourdieu, Pierre, Jean-Claude Chamboderon, and Jean-Claude Passeron. 1991. *Soziologie als Beruf*. Berlin: De Gruyter.

Bourdieu, Pierre, and Loïc J. D. Wacquant. 1992a. *An Invitation to Reflexive Sociology*. Chicago: University of Chicago Press.

Bourdieu, Pierre, and Loïc J. D. Wacquant. 1992b. “The Purpose of Reflexive Sociology (The Chicago Workshop).” Pp. 61–215 in *An Invitation to Reflexive Sociology*, edited by P. Bourdieu and L.J.D. Wacquant. Chicago: University of Chicago Press.

Boyacigiller, Nakiye A., Jill Kleinberg, Margaret E. Phillips, and Sonja A. Sackmann. 2004. “Conceptualizing Culture.” Pp. 99–167 in *Handbook for International Management Research*, edited by B.J. Punnet and O. Shenkar. Oxford/UK & Cambridge, MA: Blackwell Publishers.

Boyer, Dominic. 2005. “Visiting Knowledge in Anthropology: An Introduction.” *ethnos* 70(2):141–48.

Brah, Avtar. 2005. *Cartographies of Diaspora: Contesting Identities*. London: Routledge.

Brand, Ralf, and Andrew Karvonen. 2007. “The Ecosystem of Expertise: Complementary Knowledges for Sustainable Development.” *Sustainability: Science, Practice, & Policy* 3(1):21–31.

Breidlid, A. 2009. “Culture, Indigenous Knowledge Systems and Sustainable Development: A Critical View of Education in an African Context.” *International Journal of Educational Development* 29(2):140–48.

Brettell, Caroline B., and Faith Nibbs. 2009. “Lived Hybridity: Second-Generation Identity Construction through College Festival.” *Identities: Global Studies in Culture and Power* 16(6):678–99.

Breu, Thomas, Daniel Maselli, and Hans Hurni. 2005. “Knowledge for Sustainable Development in the Tajik Pamir Mountains.” *Mountain Research and Development* 25(2):139–46.

Breuer, Franz, and Wolff-Michael Roth. 2003. “Subjectivity and Reflexivity in the Social Sciences: Epistemic Windows and Methodical Consequences.” *Forum: Qualitative Social Research* 4(2).

Brickell, Katherine, and Ayona Datta. 2011. *Translocal Geographies: Spaces, Places, Connections*. New York: Routledge.

Briggs, John. 2005. “The Use of Indigenous Knowledge in Development: Problems and Challenges.” *Progress in Development Studies* 5(2):99–114.

Briggs, John. 2013. “Indigenous Knowledge: A False Dawn for Development Theory and Practice?” *Progress in Development Studies* 13(3):231–43.

Briggs, John, and Joanne Sharp. 2004. “Indigenous Knowledges and Development: A Postcolonial Caution.” *Third World Quarterly* 25(4):661–76.

Brink, Pamela J. 1984. “Value Orientations as an Assessment Tool in Cultural Diversity.” *Nursing Research* 33(4):198–203.

Brink, Pamela J. 2000. “Values and Conflict in Clinical Settings.” Pp. 109–18 in *Finding the Middle Ground: Insight and Applications of the Value Orientations Method*, edited by K.W. Russo. Yarmouth, ME: Intercultural Press.

Britz, Johannes J., and Tomas A. Lipinski. 2001. “Indigenous Knowledge: A Moral Reflection on Current Legal Concepts of Intellectual Property.” *Libri* 51(4):234–46.

Brodt, Sonja B. 2001. “A Systems Perspective on the Conservation and Erosion of Indigenous Agricultural Knowledge in Central India.” *Human Ecology* 29(1):99–120.

Brokensha, David, D. Michael Warren, and Oswald Werner. 1980. *Indigenous Knowledge Systems and Development*. Washington D.C.: University Press of America.

Bromber, Katrin. 2013. “Working with ‘Translocality’: Conceptual Implications and Analytical Consequences.” Pp. 63–72 in *Regionalizing Oman*, edited by S. Wippel. Dordrecht: Springer.

Brosius, J. Peter. 1999. “Analyses and Interventions: Anthropological Engagements with Environmentalism.” *Current Anthropology* 40:277–309.

Brosius, J. Peter, and Sarah L. Hitchner. 2010. “Cultural Diversity and Conservation.” *International Social Science Journal* 61(199):141–68.

Brown, Bryan A., and Eliza Spang. 2008. “Double Talk: Synthesizing Everyday and Science Language in the Classroom.” *Science Education* 92(4):708–32.

Brown, Cecil H. 1974. “Unique Beginners and Covert Categories in Folk Biological Taxonomies.” *American Anthropologist* 76(2):325–27.

Brown, Cecil H. 1995. “Lexical Acculturation and Ethnobiology: Utilitarianism versus Intellectualism.” *Journal of Linguistic Anthropology* 5(1):51–64.

Brown, Penelope. 2006. “Cognitive Anthropology.” Pp. 96–114 in *Studies in the social and cultural foundations of language 23: Language, Culture, and Society*, edited by C. Jourdan and K. Tuite. Cambridge, UK: Cambridge University Press.

Brown, Roger W., and Eric H. Lenneberg. 1954. “A Study in Language and Cognition.” *Journal of Abnormal and Social Psychology* 49(3):454–62.

Bruchfield, R. W. 1972. *A Supplement to the Oxford English Dictionary, Vol. I, A-G*. edited by R.W. Bruchfield. Oxford: Clarendon, Oxford.

Bruckmeier, Karl, and Hilary Tovey. 2008. “Knowledge in Sustainable Rural Development: From Forms of Knowledge to Knowledge Processes.” *Sociologia Ruralis* 48(3):313–29.

Brunner Grandy, Anita. 2016. “Das Nachhaltigkeitspotenzial von Governance-Strukturen.” University of Basel.

Bucholzki, Mateusz. 2016. “Surveillance and Sousveillance on Facebook: Between Empowerment and Disempowerment.” *MaRBLe* 3:1–24.

Bulmer, Ralph N. H. 1974. “Folk Biology in the New Guinea Highlands.” *Social Science Information* 13(4–5):9–28.

Burawoy, Michael. 1998. “The Extended Case Method.” *Sociological theory* 16(1):4–33.

Burawoy, Michael. 2000. “Reaching for the Global.” Pp. 1–40 in *Global Ethnography*, edited by M.M. Burawoy et al. Berkeley: University of California Press.

Burawoy, Michael. 2003. “Revisits: An Outline of a Theory of Reflexive Ethnography.” *American sociological review* 68:645–79.

Burawoy, Michael. 2009. *The Extended Case Method Four Countries, Four Decades, Four Great Transformations, and One Theoretical Tradition*. Berkeley: University of California Press.

De Búrca, Graínne, and Joanne Scott. 2006. “New Governance, Law and Constitutionalism.” *Law and New Governance in the EU and US* 1–13.

Burger, Paul. 2006. “Why Any Substantial Definition of Sustainability Must Fail – and Why This Is a Good, Not a Bad Story.” in *International Sustainable Development Research Conference*. Hong Kong: University of Hong Kong.

Burger, Paul et al. 2014. “Strategies for Sustainability: Institutional and Organisational Challenges.” *Sustainability* 6(11):8342–47.

Burger, Paul. 2018. “Sustainability, Sustainability Assessment, and the Place of Fiscal Sustainability.” Pp. 139–59 in *The Palgrave Handbook of Indicators in Global Governance*, edited by D.V. Malito, G. Umbach, and N. Bhuta. Cham: Palgrave Macmillan.

Burger, Paul, and Marius Christen. 2011. “Towards a Capability Approach of Sustainability.” *Journal of Cleaner Production* 19(8):787–95.

Burger, Paul, Claus-Heinrich Daub, and Yvonne M. Scherrer. 2010. “Creating Values for Sustainable Development (Editorial).” *International Journal of Sustainable Development and World Ecology* 17(1):1–3.

Burke, Peter. 2009. *Cultural Hybridity*. Cambridge, UK/Malden, MA: Polity Press.

Bussmann, Rainer W., Douglas Sharon, and M. Garcia. 2009. “From Chamomile to Aspirin? Medicinal Plant Use among Clients at Laboratorios Beal in Trujillo, Peru.” *Ethnobotany Research and Applications* 7:399–407.

Buterbaugh, Chad. 2012. “Multilocality and the Narration of Place Meanings in an Irish Story.” *Folklore Forum* (November):1–13.

Calvet-Mir, Laura, Maria Calvet-Mir, José Luis Molina, and Victoria Reyes-García. 2012. “Seed Exchange as an Agrobiodiversity Conservation Mechanism. A Case Study in Vall Fosca, Catalan Pyrenees, Iberian Peninsula.” *Ecology and Society* 17(1).

Campbell, John R. 2001. “Participatory Rural Appraisal as Qualitative Research: Distinguishing Methodological Issues from Participatory Claims.” *Human Organization* 60(4):380–89.

von Carlowitz, Hanns Carl. 1713. *Sylvicultura Oeconomica oder hauswirthliche Nachricht und naturgemässe Anweisung zur wilden Baumzucht*. Leipzig: JF Braun.

Carlyle, Thomas. 1849. “Occasional Discourse on the Negro Question.” *Fraser’s Magazine for Town and Country* XI(February):528–38.

Carruthers, Peter. 1992. *Human Knowledge and Human Nature: A New Introduction to an Ancient Debate*. Oxford/New York: Oxford University Press.

Carson, Rachel. 1962. *Silent Spring*. New York: Fawcett Publications.

Carter, Robert T. 1990. “Cultural Value Differences between African Americans and White Americans.” *Journal of College Student Development* 31:71–79.

Carvalho, Ana Maria, and Amélia Frazão-Moreira. 2011. “Importance of Local Knowledge in Plant Resources Management and Conservation in Two Protected Areas from Trás-Os-Montes, Portugal.” *Journal of Ethnobiology and Ethnomedicine* 7(1):36.

Casey, Edward S. 1996. “How to Get from Space to Place in a Fairly Short Stretch of Time: Phenomenological Prolegomena.” *Senses of Place* 27:14–51.

Caulkins, D. Douglas. 2001. “Consensus, Clines, and Edges in Celtic Cultures.” *Cross-Cultural Research* 35(2):109–26.

Caulkins, D. Douglas. 2004. “Identifying Culture as a Threshold of Shared Knowledge - A Consensus Analysis Method.” *International Journal of Cross Cultural Management* 4(3):317–33.

CBD. 2002. *Bonn Guidelines on Access to Genetic Resources and Fair and Equitable Sharing of Benefits Arising out of Their Utilization*. Montreal: The Secretariat of the Convention on Biological Diversity.

CBD. 2011. *Nagoya Protocol on Access to Genetic Resources and the Fair and Equitable Sharing of Benefits Arising from Their Utilization to the Convention on Biological Diversity: Text and Annex*. Montreal: Secretariat of the Convention on Biological Diversity.

Cetinkaya, Gulay. 2009. “Challenges for the Maintenance of Traditional Knowledge in the Satoyama and Satoumi Ecosystems, Noto Peninsula, Japan.” *Human Ecology Review* 27–40.

Chambers, Robert. 1994. “Participatory Rural Appraisal (PRA): Challenges, Potentials and Paradigm.” *World Development* 22(10):1437–54.

Chambers, Robert. 1996. “Participatory Rural Appraisal and the Reversal of Power.” *Cambridge Anthropology* 19(1):5–23.

Chambers, Robert, and Gordon R. Conway. 1991. “Sustainable Rural Livelihoods: Practical Concepts for the 21st Century.” *IDS Discussion Paper 296*.

Chambers, Robert, Arnold Pacey, and Lori Ann Thrupp. 1989. *Farmer First: Farmer Innovation and Agricultural Research*. London: Intermediate Technology.

Chanda, Nayan. 2008. *Bound Together: How Traders, Preachers, Adventurers, and Warriors Shaped Globalization*. New Haven & London: Yale University Press.

Charnley, S., A. P. Fischer, and E. T. Jones. 2007. “Integrating Traditional and Local Ecological Knowledge into Forest Biodiversity Conservation in the Pacific Northwest.” *Forest Ecology and Management* 246(1):14–28.

Chelliah, Rajakulasingam. 2012. “Between Two Time Zones and Places: A Study on How Media Habits Shape a Sense of Belonging among Tamils in Norway.” University of Oslo.

Chew, Matthew M. 2009. “The Theoretical Quandary of Subjectivity: An Intellectual Historical Note on the Action Theories of Talcott Parsons and Alfred Schutz.” *Review of European Studies* 1(1):23–34.

Ching-Yi, Tien, and Paul C. Talley. 2012. “‘Think Globally, Act Locally’: ‘Glocalization’ in Taiwanese Higher Education.” *International Journal of Business and Social Science* 3(15):124–30.

Choy, Timothy et al. 2009. “Strong Collaboration as a Method for Multi-Sited Ethnography: On Mycorrhizal Relations.” Pp. 197–214 in *Multi-sited Ethnography: Theory, Praxis, and Locality in Contemporary Research*, edited by M.-A. Falzon. Aldershot: Ashgate Publishing.

Christen, Marius, and Stephan Schmidt. 2011. “A Formal Framework for Conceptions of Sustainability – a Theoretical Contribution to the Discourse in Sustainable Development.” *Sustainable Development* 20(6):400–410.

CIDA. 1979. *Ecodevelopment and Third World Urban Regions: A Prospective for International Development Cooperation Policy*. Ottawa: CIDA/Policy branch.

Coady, C. A. J. 1973. *Testimony: A Philosophical Study*. Oxford: Oxford University Press.

Cochrane, Phoebe. 2006. “Exploring Cultural Capital and Its Importance in Sustainable Development.” *Ecological Economics* 57(2):318–30.

Cocks, Michelle. 2006. “Biocultural Diversity: Moving beyond the Realm of ‘Indigenous’ and ‘Local’ People.” *Human Ecology* 34(2):185–200.

Cohn, Carol. 2006. “Motives and Methods: Using Multi-Sited Ethnography to Study US National Security Discourses.” Pp. 91–107 in *Feminist methodologies for international relations*, edited by B.A. Ackerly, M. Stern, and J. True. Cambridge/New York: Cambridge University Press.

Colding, Johan, and Carl Folke. 2001. “Social Taboos: ‘Invisible’ Systems of Local Resource Management and Biological Conservation.” *Ecological Applications* 11(2):584–600.

Colding, Johan, Carl Folke, and Thomas Elmqvist. 2003. “Social Institutions in Ecosystem Management and Biodiversity Conservation.” *Tropical Ecology* 44(1):25–41.

Coleman, Simon, and Pauline von Hellermann. 2011. *Multi-Sited Ethnography: Problems and Possibilities in the Translocation of Research Methods*. New York: Routledge.

Coley, John D., Douglas L. Medin, Julia Beth Proffitt, Elizabeth Lynch, and Scott Atran. 1996. “Inductive Reasoning in Folkbiological Thought.” *Folkbiology* 205:211–12.

Conklin, Harold C. 1954. “The Relation of Hanunóo Culture to the Plant World.” Yale University.

Conklin, Harold C. 1961. “The Study of Shifting Cultivation.” *Current Anthropology* 2(1):27–61.

Constantinescu, Emil. 2012. “Looking for a New Alchemy: From the Lead of Information to the Gold of Knowledge.” *Eruditio* 1(3):91–96.

Cornwall, Andrea, and Garett Pratt. 2011. “The Use and Abuse of Participatory Rural Appraisal: Reflections from Practice.” *Agriculture and human values* 28(2):263–72.

Cox, Kevin R. 1997. “Globalization and the Politics of Distribution: A Critical Assessment.” Pp. 115–36 in *Spaces of globalization: Reasserting the power of the local*, edited by K.R. Cox. New York: Guilford.

Crane, Tim. 2011. “The Problem of Perception.” The Stanford Encyclopedia of Philosophy (Spr 2011) edited by E.N. Zalta. Retrieved July 18, 2013 (http://plato.stanford.edu/archives/spr2011/entries/perception-problem/).

Cremers, Leontien, Marjolein Ooijevaar, and Rutgerd Boelens. 2005. “Institutional Reform in the Andean Irrigation Sector: Enabling Policies for Strengthening Local Rights and Water Management.” *Natural Resources Forum* 29(1):37–50.

Crick, Malcolm R. 1982. “Anthropology of Knowledge.” *Annual Review of Anthropology* 11:287–313.

Cruz-Garcia, Gisella S. 2017. “Management and Motivations to Manage ‘Wild’ Food Plants. A Case Study in a Mestizo Village in the Amazon Deforestation Frontier.” *Frontiers in Ecology and Evolution* 5:127.

D’Andrade, Roy Goodwin. 1995. *The development of cognitive anthropology*. Cambridge: Cambridge University Press.

Dahdouh-Guebas, Farid, Ilse Van Pottelbergh, James G. Kairo, Stefano Cannicci, and Nico Koedam. 2004. “Human-Impacted Mangroves in Gazi (Kenya): Predicting Future Vegetation Based on Retrospective Remote Sensing, Social Surveys, and Tree Distribution.” *Marine Ecology Progress Series* 272:77–92.

Daly, H., and J. B. Jr Cobb. 1990. *For the Common Good. Green Print*. Boston: Beacon Press.

Dat, Anthony D., Flora Poon, Kim B. T. Pham, and Jenny Doust. 2012. “Aloe Vera for Treating Acute and Chronic Wounds.” *Cochrane Database of Systematic Reviews* (2).

David, Marian. 2013. “The Correspondence Theory of Truth.” The Stanford Encyclopedia of Philosophy (Fall 2013) edited by E.N. Zalta. Retrieved December 11, 2013 (http://plato.stanford.edu/archives/fall2013/entries/truth-correspondence/).

Davidson-Hunt, Iain, and Fikret Berkes. 2003. “Learning as You Journey: Anishinaabe Perception of Social-Ecological Environments and Adaptive Learning.” *Conservation Ecology* 8(1):5.

Davidson-Hunt, Iain J. et al. 2012. “Biocultural Design: A New Conceptual Framework for Sustainable Development in Rural Indigenous and Local Communities.” *Sapiens* 5(2):1–13.

Davies, Ian, and Greville Corbett. 1998. “A Cross-Cultural Study of Color-Grouping: Tests of the Perceptual-Physiology Account of Color Universals.” *Ethos* 26(3):338–60.

Davis, Anthony, and John Wagner. 2003. “Who Knows? On the Importance of Identifying ‘Experts’ When Researching Local Ecological Knowledge.” *Human Ecology* 31(3):463–89.

Dedeurwaerdere, Tom. 2005. “The Contribution of Network Governance to Sustainable Development.” *Les séminaires de l’Iddri* 13:1–15.

Deleuze, Gilles, Félix Guattari, Hugh Tomlinson, and Graham Burchell. 1994. *What Is Philosophy?* New York: Columbia University Press.

Dennett, Daniel C. 1991. *Consciousness Explained*. Boston: Little, Brown and Co.

Denzin, Norman K. 1994. *The Sage Handbook of Qualitative Research*. Thousand Oaks, CA: Sage.

DeWalt, Billie R. 1994. “Using Indigenous Knowledge to Improve Agricultural and Natural-Resource Management.” *Human Organization* 53(2):123–31.

Dias, Daniel A., Sylvia Urban, and Ute Roessner. 2012. “A Historical Overview of Natural Products in Drug Discovery.” *Metabolites* 2(2):303–36.

Díaz-Reviriego, Isabel et al. 2016. “Social Organization Influences the Exchange and Species Richness of Medicinal Plants in Amazonian Homegardens.” *Ecology and Society* 21(1).

Dirksmeier, Peter. 2010. “Multilokalität als Abwesenheit: eine Herausforderung für landschaftlich attraktive ländliche Räume - das Beispiel Tegernsee/Stadt.” *Europa Regional* 18(2–3):60–70.

Dixon, Alan B. 2005. “Wetland Sustainability and the Evolution of Indigenous Knowledge in Ethiopia.” *The Geographical Journal* 171(4):306–23.

Dobson, Andrew. 1996. “Environment Sustainabilities: An Analysis and a Typology.” *Environmental Politics* 5(3):401–28.

Dodge, Martin. 2008. *Understanding Cyberspace Cartographies: A Critical Analysis of Internet Infrastructure Mapping*. London: University College London.

Donovan, Katherine. 2010. “Doing Social Volcanology: Exploring Volcanic Culture in Indonesia.” *Area* 42(1):117–26.

Döring, Jörg, and Tristan Thielmann. 2008. *Spatial Turn: das Raumparadigma in den Kultur- und Sozialwissenschaften*. Bielefeld: Transcript.

Döring, Jörg, and Tristan Thielmann. 2009. “Was lesen wir im Raume? Der Spatial Turn und das geheime Wissen der Geographe.” Pp. 7–45 in *Spatial Turn. Das Raumparadigma in den Kultur- und Sozialwissenschaften*, edited by T. Thielmann and R. Döring. Bielefeld: Transcript.

Dovie, Delali B. K., E. T. F. Witkowski, and Charlie M. Shackleton. 2008. “Knowledge of Plant Resource Use Based on Location, Gender and Generation.” *Applied Geography* 28(4):311–22.

Dowden, Bradley, and Norman Swartz. 2014. “Truth.” Internet Encyclopedia of Philosophy edited by J. Fieser and B. Dowden. Retrieved April 8, 2014 (http://www.iep.utm.edu/truth/).

Dowding, Keith. 2001. “There Must Be End to Confusion: Policy Networks, Intellectual Fatigue, and the Need for Political Science Methods Courses in British Universities.” *Political Studies* 49:89–105.

Dreher, Jochen. 2003. “The Symbol and the Theory of the Life-World: ‘The Transcendences of the Life-World and Their Overcoming by Signs and Symbols.’” *Human Studies* 26(2):141–63.

Dreher, Jochen. 2011. “Alfred Schutz.” Pp. 489–510 in *The Wiley-Blackwell companion to major social theorists*, edited by G. Ritzer. Malden, Mass.: Wiley-Blackwell.

Drichel, Simone. 2008. “The Time of Hybridity.” *Philosophy & Social Criticism* 34(6):587–615.

Dube, Ernest, and Edson Munsaka. 2018. “The Contribution of Indigenous Knowledge to Disaster Risk Reduction Activities in Zimbabwe: A Big Call to Practitioners.” *Jàmbá: Journal of Disaster Risk Studies* 10(1):1–8.

Dummett, Michael. 1994. “Testimony and Memory.” Pp. 1–23 in *Knowing From Words*, edited by B.K. Matilal and A. Chakrabarti. Dordrecht: D. Reidel.

Duraiappah, Anantha K., Pumulo Roddy, and Jo-Ellen Parry. 2005. *Have Participatory Approaches Increased Capabilities?* Winnipeg: International Institute for Sustainable Development.

Durie, Mason. 2004. “Understanding Health and Illness: Research at the Interface between Science and Indigenous Knowledge.” *International journal of epidemiology* 33(5):1138–43.

Durkheim, Emile. 1965. *The Rules of Sociological Method*. New York: The Free Press.

Dutfield, Graham. 2000. “The Public and Private Domains: Intellectual Property Rights in Traditional Knowledge.” *Science Communication* 21(3):274–95.

Dutfield, Graham. 2017. *Intellectual Property Rights and the Life Science Industries: A Twentieth Century History*. Singapore: Routledge.

Dwyer, Michael B. 2013. “Building the Politics Machine: Tools for ‘Resolving’ the Global Land Grab.” *Development and Change* 44(2):309–33.

Dzerefos, C. M., C. M. Shackleton, and E. T. F. Witkowski. 1999. “Sustainable Utilization of Woodrose-Producing Mistletoes (Loranthaceae) in South Africa.” *Economic Botany* 53(4):439.

Eberle, Thomas Samuel. 1991. “Rahmenanalyse und Lebensweltanalyse.” Pp. 157–210 in *Erving Goffman: ein soziologischer Klassiker der zweiten Generation*, edited by R. Hettlage and K. Lenz. Bern: P. Haupt.

Echeverría, Javier et al. 2020. “Access and Benefit Sharing under the Nagoya Protocol – Quo Vadis? Six Latin American Case Studies Assessing Opportunities and Risk.” *Frontiers in Pharmacology* May.

Ejderyan, Oliver, and Norman Backhaus. 2007. “Glocalisation, the Link between the Global and the Local.” *GLOPP* 1–2.

Ekins, Paul. 2003. “Identifying Critical Natural Capital: Conclusions about Critical Natural Capital.” *Ecological economics* 44(2–3):277–92.

Eliade, Mircea. 1965. *Le Sacré et Le Profane*. Paris: Gallimard.

Ellen, Roy F. 1979. “Omniscience and Ignorance: Variation in Nuaulu Knowledge, Identification and Classification of Animals.” *Language in Society* 8(2–3):337–59.

Ellen, Roy F. 1986. “Ethnobiology, Cognition and the Structure of Prehension: Some General Theoretical Notes.” *Journal of Ethnobiology* 6(1):83–98.

Ellen, Roy F. 1993. *The Cultural Relations of Classification: An Analysis of Nuaulu Animal Categories from Central Seram*. Cambridge, Mass.: Cambridge University Press.

Ellen, Roy F. 1998. “Response to Paul Sillitoe, ‘The Development of Indigenous Knowledge: A New Applied Anthropology.’” *Current Anthropology* 39(2):238–39.

Ellen, Roy F. 2004. “From Ethno-Science to Science, or ‘What the Indigenous Knowledge Debate Tells Us about How Scientists Define Their Project.’” *Journal of Cognition and Culture* 4(3–4):409–50.

Ellen, Roy F., and Holly Harris. 2000. “Introduction.” Pp. 1–33 in *Indigenous Environmental Knowledge and its Transformations. Critical Anthropological Perspectives*, edited by R. Ellen, P. Parkes, and A. Bicker. Singapore: Harwood academic publishers.

Ellen, Roy F., Peter Parkes, and Alan Bicker. 2000. *Indigenous Environmental Knowledge and Its Transformations: Critical Anthropological Perspectives*. Amsterdam: Harwood Academic.

Ellingson, Terry Jay. 2001. *The Myth of the Noble Savage*. Berkeley: University of California Press.

Ember, Carol R., and Melvin Ember. 1972. “The Conditions Favoring Multilocal Residence.” *Southwestern Journal of Anthropology* 382–400.

Eriksen, Siri et al. 2011. “When Not Every Response to Climate Change Is a Good One: Identifying Principles for Sustainable Adaptation.” *Climate and Development* 3(1):7–20.

Ernst, Erzard. 2003. “Herbal Medicines Put into Context.” *BMJ* 327:881–82.

Escobar, Arturo. 1995. *Encountering Development: The Making and Unmaking of the Third World*. Princeton: Princeton University Press.

Escobar, Arturo. 1998. “Whose Knowledge? Whose Nature? Biodiversity, Conservation, and the Political Ecology of Social Movements.” *Journal of Political Ecology* 5:54–82.

Fabricant, Daniel S., and Norman R. Farnsworth. 2001. “The Value of Plants Used in Traditional Medicine for Drug Discovery.” *Environmental health perspectives* 109(suppl 1):69–75.

FairWild. 2010. *FairWild Version 2*. Retrieved (www.FairWild.org).

Falzon, Mark-Anthony. 2009. “Multi-Sited Ethnography: Theory, Praxis and Locality in Contemporary Research.” Pp. 1–23 in *Multi-sited Ethnography: Theory, Praxis and Locality in Contemporary Research*, edited by M.-A. Falzon. Farnham: Ashgate.

Fantl, Jeremy. 2012. “Knowledge How.” The Stanford Encyclopedia of Philosophy (Win 2012) edited by E.N. Zalta. Retrieved January 16, 2013 (http://plato.stanford.edu/archives/win2012/entries/knowledge-how/).

Fardon, Rich. 1990. “General Introduction.” Pp. 1–35 in *Localizing Strategies: Regional Traditions of Ethnographic Writing*, edited by Richard Fardon. Washington D.C.: Smithsonian Institution Press.

Fardon, Richard. 1995. *Counterworks: Managing the Diversity of Knowledge*. London and New York: Routledge.

Farnsworth, Norman R., Olayiwola Akerele, Audrey S. Bingel, Djaja Doel Soejarto, and Zhengang G. Guo. 1985. “Medicinal Plants in Therapy.” *Bulletin of the World Health Organization* 63(6):965–81.

Farnsworth, Norman R., and Djaja Doel Soejarto. 1991. “Global Importance of Medicinal Plants.” Pp. 25–57 in *The Conservation of Medicinal Plants*, edited by O. Akerele, B. Heywood, and H. Synge. Cambridge: Cambridge University Press.

Ferguson, Jenanne, and Marissa Weaselboy. 2020. “Indigenous Sustainable Relations: Considering Land in Language and Language in Land.” *Current Opinion in Environmental Sustainability* 43:1–7.

Fernando, Jude L. 2003. “NGOs and Production of Indigenous Knowledge under the Condition of Postmodernity.” *Annals of the American Academy of Political and Social Science* 590:54–72.

Ferreira, Cátia. 2015. “Second Life: The Emergence of a New Moneyscape.” Pp. 197–212 in *The Cultural Life of Money*, edited by I. Capeloa Gil and H. Gonçalves de Silva. Berlin & Boston: Walter de Gruyter.

Fien, John, and Daniella Tilbury. 2002. “The Global Challenge of Sustainability.” Pp. 1–12 in *Education and sustainability: Responding to the global challenge*, edited by D. Tilbury, R.B. Stevenson, Jahn Fien, and D. Schreuder. Gland (CH)/Cambridge: IUCN.

Fine, Gary Alan, and Philip Manning. 2000. “Erving Goffman.” Pp. 34–62 in *The Blackwell companion to major social theorists*, edited by G. Ritzer. Malden, Mass.: Blackwell Publishers.

Finley-Brook, Mary. 2007. “Indigenous Land Tenure Insecurity Fosters Illegal Logging in Nicaragua.” *International Forestry Review* 9(4):850–64.

Fischer, Anke, and Juliette C. Young. 2007. “Understanding Mental Constructs of Biodiversity: Implications for Biodiversity Management and Conservation.” *Biological conservation* 136(2):271–82.

Fish, William. 2010. *Philosophy of Perception: A Contemporary Introduction*. New York: Routledge.

Fisher, Kimberley. 1997. “Locating Frames in the Discursive Universe.” *Sociological Research Online* 2(3).

Ford, James D., Barry Smit, and Johanna Wandel. 2006. “Vulnerability to Climate Change in the Arctic: A Case Study from Arctic Bay, Canada.” *Global Environmental Change* 16(2):145–60.

Ford, Jesse. 2001. “The Relevance of Indigenous Knowledge to Contemporary Sustainability.” *Northwest Science* 75(2):183–88.

Foster, David R., and John F. O’Keefe. 2000. *New England Forests through Time: Insights from the Harvard Forest Dioramas*. Petersham MA: Harvard Forest, Harvard University.

Foucault, Michel. 1975. *Surveiller et punir. Naissance de la prison*. Paris: Gallimard.

Foucault, Michel. 1980. *Power Knowledge*. Brighton: Harvester.

Fozi, Navid. 2007. “The Hallowed Summoning of Tradition: Body Techniques in Construction of the Sacred Tanbur of Western Iran.” *Anthropological quarterly* 80(1):173–205.

Frake, Charles O. 1962. “Cultural Ecology and Ethnography.” *American Anthropologist* 64(1):53–59.

Fraser, Evan D. G., Andrew J. Dougill, Warren E. Mabee, Mark S. Reed, and Patrick McAlpine. 2006. “Bottom up and Top down: Analysis of Participatory Processes for Sustainability Indicator Identification as a Pathway to Community Empowerment and Sustainable Environmental Management.” *Journal of environmental management* 78(2):114–27.

Fricker, Elizabeth. 2004. “Testimony: Knowing through Being Told.” Pp. 109–30 in *Handbook of epistemology*, edited by I. Niiniluoto, M. Sintonen, and J. Wolensi. Dordrecht: Kluwer.

Friedrich, Gerhard. 2013. “Lo Spatial Turn nella ‘scienza della cultura’ tedesca.” *Paideutika. Quaderni di formazione e cultura* 17:1–8.

Gabardi, Wayne. 2001. *Negotiating Postmodernism*. Minneapolis: University of Minnesota Press.

Gabriel, Yiannis. 2018. “Interpretation, Reflexivity and Imagination in Qualitative Research.” Pp. 137–57 in *Qualitative Methodologies in Organization Studies*, edited by M. Ciesielska and D. Jemielniak. Cham: Springer.

Galappaththi, Eranga K., James D. Ford, Elena M. Bennett, and Fikret Berkes. 2019. “Climate Change and Community Fisheries in the Arctic: A Case Study from Pangnirtung, Canada.” *Journal of environmental management* 250:109534.

Gallagher, Tom. 2001a. “The Value Orientations Method: A Tool to Help Understand Cultural Differences.” *Journal of Extension* 39(6):3–18.

Gallagher, Tom. 2001b. “Understanding Other Cultures: The Value Orientation Method.” Presentation at the ALE Conference, July 19-21, Minneapolis.

Gallo, Ester. 2005. “Unorthodox Sisters Gender Relations and Generational Change among Malayali Migrants in Italy.” *Indian journal of gender studies* 12(2–3):217–51.

Gallo, Ester. 2006. “Italy Is Not a Good Place for Men: Narratives of Places, Marriage and Masculinity among Malayali Migrants.” *Global networks* 6(4):357–72.

Gardner, Peter M. 1976. “Birds, Words, and a Requiem for the Omniscient Informant 1.” *American Ethnologist* 3(3):446–68.

Garg, Prem. 1995. *World Bank Participation Sourcebook*. Washington D.C.: The World Bank.

Geck, Matthias. 2011. “Access and Benefit Sharing in the Context of Ethnobotanical Research: Is the Creation of a Medicinal Plant Garden an Appropriate Means? A Field Study from Shaxi, Northwest Yunnan, China.” University of Zurich.

Geertz, Clifford. 1973. *The Interpretation of Cultures: Selected Essays*. New York: Basic Books.

Geertz, Clifford. 1983. *Local Knowledge: Further Essays in Interpretative Anthropology*. New York: Basic Books.

Geertz, Clifford. 1992. “‘Local Knowledge’ and Its Limits: Some Obiter Dicta.” *The Yale journal of criticism* 5(2):129–35.

Geertz, Clifford. 1994. “Thick Description: Toward an Interpretive Theory of Culture.” *Readings in the philosophy of social science* 213–31.

German, Laura. 2010. “Local Knowledge and Scientific Perceptions: Questions of Validity in Environmental Knowledge.” Pp. 99–125 in *Beyond the Biophysical: Knowledge, Culture, and Power in Agriculture and Natural Resource Management*, edited by L. German, J.J. Ramisch, and R. Verma. Berlin: Springer.

Gertler, Brie. 2009. “Introspection.” Pp. 76–111 in *The Oxford Companion to Consciousness*, edited by T. Bayne, A. Cleeremans, and P. Wilken. Oxford/New York: Oxford University Press.

Gertsch, Jürg. 2009. “How Scientific Is the Science in Ethnopharmacology? Historical Perspectives and Epistemological Problems.” *Journal of Ethnopharmacology* 122(2):177–83.

Gettier, Edmund L. 1963. “Is Justified True Belief Knowledge?” *Analysis* 23(6):121.

Ghimire, Suresh Kumar, Doyle McKey, and Yildiz Aumeeruddy-Thomas. 2004. “Heterogeneity in Ethnoecological Knowledge and Management of Medicinal Plants in the Himalayas of Nepal: Implications for Conservation.” *Ecology and Society* 9(3):6.

Gibson, Robert B. 2006. “Beyond the Pillars: Sustainability Assessment as a Framework for Effective Integration of Social, Economic and Ecological Considerations in Significant Decision-Making.” *Journal of Environmental Assessment Policy and Management* 8(03):259–80.

Gibson, Terry. 2019. “Learning from the Local.” Pp. 77–92 in *Making Aid Agencies Work*, edited by T. Gibson. Bingley, UK: Emerald Publishing.

Giday, Mirutse, Zemede Asfaw, and Zerihun Woldu. 2009. “Medicinal Plants of the Meinit Ethnic Group of Ethiopia: An Ethnobotanical Study.” *Journal of Ethnopharmacology* 124(3):513–21.

Giday, Mirutse, Zemede Asfaw, Zerihun Woldu, and Tilahun Teklehaymanot. 2009. “Medicinal Plant Knowledge of the Bench Ethnic Group of Ethiopia: An Ethnobotanical Investigation.” *Journal of Ethnobiology and Ethnomedicine* 5:34.

Giddens, Anthony. 1984. *The Constitution of Society: Outline of the Theory of Structuration*. Berkeley: University of California Press.

Giddings, Bob, Bill Hopwood, and Geoff O'Brien. 2002. "Environment, Economy and Society: Fitting Them Together into Sustainable Development." *Sustainable development* 10(4):187–96.

Gilroy, Paul. 2004. *Between Camps: Nations, Cultures and the Allure of Race*. London: Routledge.

Ginsburg, Faye D. 1998. *Contested Lives: The Abortion Debate in an American Community*. Berkeley/Los Angelos: University of California Press.

Giraldo-Cañas, Diego. 2010. "Gramíneas (Poaceae) ornamentales y usadas en artesanías en Colombia." *Polibotánica* (30):163–91.

Giulianotti, Richard, and Roland Robertson. 2007. "Forms of Glocalization: Globalization and the Migration Strategies of Scottish Football Fans in North America." *Sociology* 41(1):133–52.

Giulianotti, Richard, and Roland Robertson. 2012. "Glocalization and Sport in Asia: Diverse Perspectives and Future Possibilities." *Sociology of Sport Journal* 29(4):433–54.

Glanzberg, Michael. 2014. "Truth." The Stanford Encyclopedia of Philosophy (Spring 14) edited by E.N. Zalta. Retrieved April 30, 2014 (http://plato.stanford.edu/archives/spr2014/entries/truth/).

Glaser, Barney G., and Anselm L. Strauss. 1967. *The Discovery of Grounded Theory: Strategies for Qualitative Research*. Chicago: Aldine Pub. Co.

Godard, Olivier. 2003. "Sustainability Impact Assessment and Integrated Modeling in Controversial Universes: A Background." Pp. 1–20 in *SUSTRA Workshop–UCL, Louvain La Neuve*.

Godoy, Ricardo, Nicholas Brokaw, and David Wilkie. 1998. "Of Trade and Cognition: Markets and the Loss of Folk Knowledge among the Tawahka Indians of the Honduran Rain Forest." *Journal of Anthropological Research* 54(2):219–33.

Godoy, Ricardo, Victoria Reyes-García, Elizabeth Byron, William R. Leonard, and Vincent Vadez. 2005. "The Effect of Market Economies on the Well-Being of Indigenous Peoples and on Their Use of Renewable Natural Resources." *Annual Review of Anthropology* 34:121–38.

Goettlich, Andreas. 2011. "Power and Powerlessness. Alfred Schutz's Theory of Relevance and Its Possible Impact on a Sociological Analysis of Power." *Civitas - Revista de Ciências Sociais* 11(3):491–508.

Goffman, Erving. 1974. *Frame Analysis: An Essay on the Organization of Experience*. New York: Harper & Row.

Goffman, Erving. 1979. *Gender Advertisements*. New York: Harper & Row.

Goldman, Alvin, and Joel Pust. 1998. "Philosophical Theory and Intuitional Evidence." Pp. 179–97 in *Rethinking Intuition: The Psychology of Intuition and Its Role in Philosophical Inquiry*, edited by M.R. DePaul and W.M. Ramsey. Lanham: Rowman and Littlefield.

Gomez-Baggethun, E., S. Mingorria, Victoria Reyes-García, L. Calvet, and C. Montes. 2010. “Traditional Ecological Knowledge Trends in the Transition to a Market Economy: Empirical Study in the Donana Natural Areas.” *Conservation Biology* 24(3):721–29.

Gonzales, Gustavo F. 2012. “Ethnobiology and Ethnopharmacology of Lepidium Meyenii (Maca), a Plant from the Peruvian Highlands.” *Evidence-Based Complementary and Alternative Medicine* 2012.

González, Víctor M., Luis A. Castro, and Marcela D. Rodriguez. 2009. “Technology and Connections - Mexican Immigrants in the US.” *IEEE Technology and Society Magazine* 28(2).

Goodenough, Ward H. 1955. “A Problem in Malayo-Polynesian Social Organization.” *American Anthropologist* 57(1):71–83.

Goodenough, Ward H. 1956. “Residence Rules.” *Southwestern Journal of Anthropology* 22–37.

Goodenough, Ward H. 1957. “Cultural Anthropology and Linguistics.” Pp. 167–173 in *Report of the seventh annual roundtable meeting on linguistics and language study (Language and linguistics monograph 9)*, edited by P.L. Garvin. Washington, D.C.: Georgetown University.

Gopalan, Suresh, and Joan B. Rivera. 1997. “Gaining a Perspective on Indian Value Orientations: Implications for Expatriate Managers.” *International Journal of Organizational Analysis* 5(2):156–79.

Gordon, Peter. 2006. “Sustainability Planning: First, Do No Harm.” *Property Management* 24(2):132–43.

Gotthard, Axel. 2005. “Wohin führt uns der ‘Spatial turn’? Über mögliche Gründe, Chancen und Grenzen einer neuerdings diskutierten historiographischen Wende.” *Mikro-Meso-Makro. Regionenforschung im Aufbruch* 15–50.

Grabham, Emily. 2006. “Taxonomies of Inequality: Lawyers, Maps, and the Challenge of Hybridity.” *Social & Legal Studies* 15(1):5–23.

Graham, Peter J. 2006. “Can Testimony Generate Knowledge?” *Philosophica* 78:105–27.

Grant, Kenneth A. 2007. “Tacit Knowledge Revisited - We Can Still Learn from Polanyi.” *The Electronic Journal of Knowledge Management* 5(2):173–80.

Gratani, Monica et al. 2011. “Is Validation of Indigenous Ecological Knowledge a Disrespectful Process? A Case Study of Traditional Fishing Poisons and Invasive Fish Management from the Wet Tropics, Australia.” *Ecology and Society* 16(3):25.

Graz, Bertrand. 2005. “Assessing Traditional Healers: An Observational Clinical Study of Classical Arabic Medicine in Mauritania, with Comparison of Prognosis and Outcome.” *Tropical Doctor* 35(4):217–18.

Graz, Bertrand, Elaine Elisabetsky, and Jacques Falquet. 2007. “Beyond the Myth of Expensive Clinical Study: Assessment of Traditional Medicines.” *Journal of Ethnopharmacology* 113(3):382–86.

Green, Christopher R. 2014. “Epistemology of Testimony.” Internet Encyclopedia of Philosophy edited by J. Fieser and B. Dowden. Retrieved February 17, 2014 (http://www.iep.utm.edu/ep-testi/).

Green, Kristen M., Savannah S. Fletcher, Anne H. Beaudreau, and Siikauraq Martha Whiting. 2020. “Iñupiaq Values in Subsistence Harvesting: Applying the Community Voice Method in Northwest Alaska.” *Society & Natural Resources* 33(1):122–37.

Greene, Shane et al. 2004. “Indigenous People Incorporated? Culture as Politics, Culture as Property in Pharmaceutical Bioprospecting.” *Current anthropology* 45(2):211–37.

Greiber, Thomas et al. 2012. *An Explanatory Guide to the Nagoya Protocol on Access and Benefit-Sharing*. Gland (CH): IUCN.

Greiner, Clemens. 2010. “Patterns of Translocality: Migration, Livelihoods and Identities in Northwest Namibia.” *Sociologus* 60(2):131–61.

Greiner, Clemens, and Patrick Sakdapolrak. 2013. “Translocality: Concepts, Applications and Emerging Research Perspectives.” *Geography Compass* 7(5):373–84.

Grimm, Stephen R., Christoph Baumberger, and Sabine Ammon. 2016. *Explaining Understanding: New Perspectives from Epistemology and Philosophy of Science*. Taylor & Francis.

Grober, Ulrich. 2007. “Deep Roots – a Conceptual History of ‘sustainable Development’ (Nachhaltigkeit).” *Social Science Open Access Repository SSOAR* 33.

Groenfeldt, D. 2003. “The Future of Indigenous Values: Cultural Relativism in the Face of Economic Development.” *Futures* 35(9):917–29.

Grossetti, Michel. 2011. “L’espace à trois dimensions des phénomènes sociaux. Échelles d’action et d’analyse.” SociologieS - La recherche en actes, régimes d’explication en sociologie. Retrieved March 15, 2017 (http://sociologies.revues.org/3466).

Grossner, Karl. 2017. “Spatial Concepts.” The International Encyclopedia of Geography.

Grunwald, Achim. 2013a. “Future Earth: neue Dynamik in der globalen Nachhaltigkeitsforschung.” *GAIA - Ecological Perspectives for Science and Society* 22(3):145.

Grunwald, Achim. 2013b. “Mit Energie zur nachhaltigen Entwicklung.” Pp. 95–111 in *Werkbegriff Nachhaltigkeit - Resonanzen eines Leitbildes*, edited by K. Mitschele and S. Scharff. Bielefeld: transcript Verlag.

Guba, Egon G., and Yvonna S. Lincoln. 1994. “Competing Paradigms in Qualitative Research.” *Handbook of Qualitative Research* 2(163–194):105.

Gumperz, John J., and Stephen C. Levinson. 1991. “Rethinking Linguistic Relativity.” *Current Anthropology* 32(5):613–23.

Gupta, Akhil, and James Ferguson. 1992. “Beyond ‘Culture’: Space, Identity, and the Politics of Difference.” *Cultural Anthropology* 7(1):6–23.

Gutting, Gary, and Johanna Oksala. 2019. “Michel Foucault.” *The Stanford Encyclopedia of Philosophy*.

Gyampoh, B. A., S. Amisah, M. Idinoba, and J. Nkem. 2009. “Using Traditional Knowledge to Cope with Climate Change in Rural Ghana.” *Unasylva* 60(281/232):70–74.

Hackett, Edward J., Olga Amsterdamska, Michael Lynch, and Judy Wajcman. 2008. *The Handbook of Science and Technology Studies*. Cambridge, Mass.: MIT Press.

Hall, Edward T. 1966. *The Hidden Dimension*. Garden City, N.Y.: Doubleday.

Hall, Edward T. 1976. *Beyond Culture*. Garden City, N.Y.: Anchor Press.

Hall, Edward T. 1983. *The Dance of Life: The Other Dimension of Time*. Garden City, N.Y.: Anchor Press/Doubleday.

Hall, Edward T., and Mildred Reed Hall. 1990. *Understanding Cultural Differences*. Yarmouth, ME: Intercultural Press.

Hamilton, Alan C. 2004. “Medicinal Plants, Conservation and Livelihoods.” *Biodiversity and Conservation* 13(8):1477–1517.

Hamilton, Alan C. 2008. *Medicinal Plants in Conservation and Development: Case Studies and Lessons Learnt*. Salisbury, UK: Plantlife International.

Hannerz, Ulf. 1996. *Transnational Connections: Culture, People, Places*. London/New York: Routledge.

Hanrahan, Mary U. 2006. “Highlighting Hybridity: A Critical Discourse Analysis of Teacher Talk in Science Classrooms.” *Science Education* 90(1):8–43.

Haque, M. Shamsul. 1999. “The Fate of Sustainable Development under Neo-Liberal Regimes in Developing Countries.” *International Political Science Review* 20(2):197–218.

Hardin, C. L. 1998. “Basic Color Terms and Basic Color Categories.” Pp. 207–18 in *Color Vision: Perspectives from Different Disciplines*, edited by W.G.K. Backhaus, R. Kliegl, and J.S. Werner. Berlin & New York: Walter de Gruyter.

Hardin, C. L., and Luisa Maffi. 2009. “Introduction.” Pp. 7–20 in *Color Categories in Thought and Language*, edited by C.L. Hardin and L. Maffi. Cambridge: Cambridge University Press.

Hardin, Garrett. 1968. “The Tragedy of the Commons.” *Science* 162(3859):1243–48.

Harris, Marvin. 1964. *The Nature of Cultural Things*. New York: Random House.

Hartmuth, Gerhard, Katja Huber, and Dieter Rink. 2008. “Operationalization and Contextualization of Sustainability at the Local Level.” *Sustainable Development* 16(4):261–70.

Harvey, David. 1990. *The Condition of Postmodernity: An Enquiry into the Origins of Cultural Change*. Oxford/GB; Cambridge/USA: Blackwell.

Haslinger, Peter. 2014. “Der spatial turn und die Geschichtsschreibung zu Ostmitteleuropa in Deutschland.” *Zeitschrift für Ostmitteleuropa-Forschung* 63(1):74–95.

Hastrup, Kirsten. 2004. “Getting It Right Knowledge and Evidence in Anthropology.” *Anthropological Theory* 4(4):455–72.

von Hauff, Michael. 2012. “Nachhaltige Entwicklung - Begründung und Anforderungen des neuen Leitbildes.” Online-Akademie. Retrieved December 15, 2018 (http://library.fes.de/pdf-files/akademie/online/09119.pdf).

von Hauff, Michael. 2014. *Nachhaltige Entwicklung: Grundlagen und Umsetzung*. Oldenburg: Walter de Gruyter.

von Hauff, Michael. 2019. *Nachhaltige Entwicklungspolitik*. München: UTB.

von Hauff, Michael, and Katja Claus. 2012. *Fair trade: ein Konzept nachhaltigen Handelns*. Konstanz: UVK.

von Hauff, Michael, and Alexandro Kleine. 2005. “Methodischer Ansatz zur Systematisierung von Handlungsfeldern und Indikatoren einer Nachhaltigkeitsstrategie - Das Integrierende Nachhaltigkeits-Dreieck.” *Diskussionsbeiträge der Technischen Universität Kaiserslautern* 19(5):1–31.

Haughton, Graham. 1999. “Environmental Justice and the Sustainable City.” *Journal of planning education and research* 18(3):233–43.

Haverkort, Bertus, and Stephan Rist. 2004. “Towards Co-Evolution of Knowledges and Sciences: No Shortcut in Integrating Local and Global Knowledge.” in *Paper for the Compass Panel for the Conference “Bridging Scales and Epistemologies: Linking Local Knowledge with Global Science in Multi-Scale Assessments.”* Alexandria: March 2004.

Hays, Terence E. 1983. “Ndumba Folk Biology and General Principles of Ethnobotanical Classification and Nomenclature.” *American Anthropologist* 85(3):592–611.

Headland, Thomas N. 1990. “Introduction: A Dialogue between Kenneth Pike and Marvin Harris on Emics and Ethics.” Pp. 13–27 in *Emics and etics: The insider/outsider debate*, edited by T.N. Headland, K.L. Pike, and M. Harris. Newbury Park, CA: Sage Publications.

Heckler, Serena. 2007. “On Knowing and Not Knowing: The Many Valuations of Piaroa Local Knowledge.” Pp. 91–107 in *Local Science vs. Global Science. Approaches to Indigenous Knowledge in International Development*, edited by P. Sillitoe. New York: Berghahn Books.

Hedberg, Charlotta. 2016. “‘Doing Gender’ in the Wild Berry Industry: Transforming the Role of Thai Women in Rural Sweden 1980–2012.” *European Journal of Women’s Studies* 23(2):169–84.

Hegarty, Peter. 2007. “Getting Dirty - Psychology’s History of Power.” *History of Psychology* 10(2):75–91.

Heinrich, Michael. 2013. “Ethnopharmacology and Drug Discovery.” *Comprehensive Natural Products II: Chemistry and Biology, Development & Modification of Bioactivity* 3:351–81.

Heinrich, Michael. 2015a. “New Medicines Based On Property Rights from an Indigenous and Intellectual Traditional Knowledge: Ethnopharmacological Perspective.” Pp. 75–85 in *Ethnopharmacology*, edited by M. Heinrich and A.K. Jäger. Oxford: John Wiley & Sons.

Heinrich, Michael. 2015b. “New Medicines Based On Traditional Knowledge: Indigenous and Intellectual Property Rights from an Ethnopharmacological Perspective.” Pp. 75–86 in *Ethnopharmacology*, edited by M. Heinrich and A.K. Jäger. Oxford: John Wiley & Sons.

Heinrich, Michael, Anita Ankli, Barbara Frei, Claudia Weimann, and Otto Sticher. 1998. “Medicinal Plants in Mexico: Healers’ Consensus and Cultural Importance.” *Social Science & Medicine* 47(11):1859–71.

Heinrich, Michael, Tasleem Dhanji, and Ivan Casselman. 2011. “Açai (Euterpe Oleracea Mart.) — A Phytochemical and Pharmacological Assessment of the Species’ Health Claims.” *Phytochemistry Letters* 4(1):10–21.

Heinrich, Michael, and Alan Hesketh. 2019. “25 Years after the Rio Convention’ - Lessons Learned in the Context of Sustainable Development and Protecting Indigenous and Local Knowledge.” *Phytomedicine* 53:332–43.

Heinrich, Michael, and Anna K. Jäger. 2015. *Ethnopharmacology*. edited by M. Heinrich and A.K. Jäger. Oxford: John Wiley & Sons.

Heinrich, Michael, Marco Leonti, Sabine Nebel, and W. Peschel. 2005. "'Local Food - Nutraceuticals': An Example of a Multidisciplinary Research Project on Local Knowledge." *Journal of Physiology and Pharmacology* 56, Suppl:5–22.

Heinrich, Michael, and Hooi Lee Teoh. 2004. "Galanthamine from Snowdrop—the Development of a Modern Drug against Alzheimer's Disease from Local Caucasian Knowledge." *Journal of Ethnopharmacology* 92(2–3):147–62.

Hesketh, Alan. 2015. "Ethnopharmacology and Intellectual Property Rights." *Ethnopharmacology* 87–96.

Hetherington, Stephen. 2006. "How to Know (That Knowledge-That Is Knowledge-How)." Pp. 71–94 in *Epistemology Futures*, edited by S. Hetherington. Oxford: Oxford University Press.

Hetherington, Stephen. 2014. "Gettier Problems." Internet Encyclopedia of Philosophy edited by J. Fieser and B. Dowden. Retrieved July 22, 2014 (http://www.iep.utm.edu/gettier/).

Hettlage, Robert. 1991. "Rahmenanalyse - oder die innere Organisation unseres Wissens um die Ordnung der sozialen Wirklichkeit." Pp. 95–150 in *Erving Goffman - ein soziologischer Klassiker der zweiten Generation*, edited by R. Hettlage and K. Lenz. Bern/Stuttgart: Haupt.

Heywood, Vernon H. 2015. "Biodiversity, Conservation and Ethnopharmacology." Pp. 41–51 in *Ethnopharmacology*, edited by M. Heinrich and A.K. Jäger. Oxford: Wiley Online Library.

Hill, Rosemary et al. 2020. "Working with Indigenous, Local and Scientific Knowledge in Assessments of Nature and Nature's Linkages with People." *Current Opinion in Environmental Sustainability* 43:8–20.

Hills, Michael D. 2002. "Kluckhohn and Strodtbeck's Values Orientation Theory." *Online Readings in Psychology and Culture* 4(4):1–14.

Hitzler, Ronald, and Thomas Samuel Eberle. 2003. "Phänomenologische Lebensweltanalyse." Pp. 109–18 in *Qualitative Forschung – Ein Handbuch*, edited by U. Flick, E. von Kardoff, and I. Steinke. Rheinbeck bei Hamburg: Rowohlt.

Hoang, Kimberly Kay. 2014. "Flirting with Capital: Negotiating Perceptions of Pan-Asian Ascendency and Western Decline in Global Sex Work." *Social Problems* 61(4):507–29.

Hobart, Mark. 1993. "Introduction: The Growth of Ignorance?" Pp. 1–30 in *An anthropological critique of development*, edited by M. Hobert. New York: Routledge.

Hofer, Barbara K. 2008. "Personal Epistemology and Culture." Pp. 3–22 in *Knowing, Knowledge and Beliefs*, edited by M.S. Khine. Dordrecht: Springer.

Hofstede, Geert H. 1980. *Culture's Consequences: International Differences in Work-Related Values*. Beverly Hills, CA: Sage Publications.

Hofstede, Geert H. 2001. *Culture's Consequences: Comparing Values, Behaviors, Institutions, and Organizations across Nations*. Thousand Oaks, Calif.: Sage Publications.

Holden, Meg, Mark Roseland, Karen Ferguson, and Anthony Perl. 2008. "Seeking Urban Sustainability on the World Stage." *Habitat International* 32(3):305–17.

Holmes, Tori. 2016. “Reframing the Favela, Remapping the City: Territorial Embeddedness and (Trans) Locality in ‘Framing Content’ on Brazilian Favela Blogs.” *Journal of Latin American Cultural Studies* 25(2):297–319.

Honer, Anne. 1993. *Lebensweltliche Ethnographie: ein explorativ-interpretativer Forschungsansatz am Beispiel von Heimwerker-Wissen*. Wiesbaden: Deutscher Universitäts-Verlag.

Hookway, Christopher. 2013. “Pragmatism.” The Stanford Encyclopedia of Philosophy (Winter 201) edited by E.N. Zalta. Retrieved December 5, 2013 (http://plato.stanford.edu/archives/win2013/entries/pragmatism/).

Hopwood, Bill, Mary Mellor, and Geoff O’Brien. 2005. “Sustainable Development: Mapping Different Approaches.” *Sustainable Development* 13:38–52.

Horáková, Hana. 2014. “Empirical Research of Modern Rurality: Transgression, Heterogeneity, Multilocality, Multifunctionality (Editorial).” *AUC Geografica* 49(2):5–6.

Horst, Cindy. 2009. “Expanding Sites: The Question of ‘Depth’ Explored.” Pp. 119–33 in *Multi-sited Ethnography: Theory, Praxis and Locality in Contemporary Research*, edited by M.-A. Falzon. Aldershot: Ashgate Publishing.

Houben, Daniel. 2013. “Zwischen phänomenologischer Wissenssoziologie und Bourdieu - Zur konzeptionellen und empirischen Relevanz von Gatekeepern und Facilitatoren an Statuspassagen.” Pp. 324–47 in *Wissen und soziale Ungleichheit*, edited by M. Endreß and O. Berli. Weinheim: Juventa.

Houehanou, Thierry D., Achille E. Assogbadjo, Romain Glele Kakaï, Marcel Houinato, and Brice Sinsin. 2011. “Valuation of Local Preferred Uses and Traditional Ecological Knowledge in Relation to Three Multipurpose Tree Species in Benin (West Africa).” *Forest Policy and Economics* 13(7):554–62.

House, Robert J., Paul John Hanges, Mansour Javidan, Peter W. Dorfman, and Vipin Gupta. 2004. *Culture, Leadership, and Organizations: The GLOBE Study of 62 Societies*. Thousand Oaks, CA: SAGE Publications.

Howes, Michael, and Robert Chambers. 1979. “Indigenous Technical Knowledge: Analysis, Implications and Issues.” *IDS Bulletin* 10(2):5–11.

Huge, Jean, Tom Waas, Gilbert Eggermont, and Aviel Verbruggen. 2011. “Impact Assessment for a Sustainable Energy Future—Reflections and Practical Experiences.” *Energy Policy* 39(10):6243–53.

Hugger, Kai-Uwe. 2006. “Kommunikative Zwischenwelten - über deutsch-türkische Jugendliche im Internet, Identität und transnationale soziale Räume.” Pp. 182–99 in *Abenteuer Cyberspace. Jugend in virtuellen Welten*, edited by R. Vollbrecht and A. Tillmann. Frankfurt a.M.: Peter Lang Verlag.

Hunn, Eugene. 1977. *Tzeltal Folk Zoology: The Classification of Discontinuities in Nature*. New York: Academic Press.

Hunn, Eugene. 1982. “The Utilitarian in Folk Biological Classification.” *American Anthropologist* 84:830–47.

Hunn, Eugene S., and Cecil H. Brown. 2011. “Linguistic Ethnobiology.” Pp. 319–33 in *Ethnobiology*, edited by E.N. Anderson, D. Pearsall, E S Hunn, and N. Turner. Hoboken NJ: Wiley-Blackwell.

Hunn, Eugene S., and David H. French. 1984. “Alternatives to Taxonomic Hierarchy: The Sahaptin Case.” *Journal of Ethnobiology* 4(1):73–92.

Huntington, Samuel P. 1993. “The Clash of Civilizations?” *Foreign Affairs* 72(3):22–49.

Hurni, Hans. 2000. “Assessing Sustainable Land Management (SLM).” *Agriculture Ecosystems & Environment* 81(2):83–92.

Hutnyk, John. 2005. “Hybridity.” *Ethnic and Racial Studies* 28(1):79–102.

Ichikawa, Jonathan Jenkins, and Matthias Steup. 2012. “The Analysis of Knowledge.” The Stanford Encyclopedia of Philosophy (Fall 2013) edited by E.N. Zalta. Retrieved December 12, 2013 (http://plato.stanford.edu/archives/win2012/entries/knowledge-analysis/).

Ilham, Jasmin Irisha Jim, and Norizan Esa. 2018. “Contribution of Local Knowledge towards Urban Agroforestry as a Sustainable Approach on Climate Change Adaptation.” P. 3001ff. in *SHS Web of Conferences*, vol. 45. EDP Sciences.

Inglis, David, and Christopher Thrope. 2012. *An Invitation to Social Theory*. Cambridge, UK/Malden, Mass.: Polity.

Ingold, Tim. 2008. “Anthropology Is Not Ethnography.” *Proceedings of the British Academy* 154:69–92.

Iqbal, Imrana, and Charles Pierson. 2017. “A North-South Struggle: Political and Economic Obstacles to Sustainable Development.” *Sustainable Development Law & Policy* 16(2/4):16.

Isla, Ana. 2007. “An Ecofeminist Perspective on Biopiracy in Latin America.” *Signs: Journal of Women in Culture and Society* 32(2):323–32.

Ito, Mizuko. 1999. “Network Localities: Identity, Place, and Digital Media.” Paper presented at the 1999 Meetings of the Society for the Social Studies of Science, San Diego. Retrieved February 25, 2017 (www.itofisher.com/PEOPLE/mito/locality.pdf).

IUCN/UNDP/WWF. 1980. *The World Conservation Strategy: Living Resource Conservation for Sustainable Development*. Gland, Switzerland: IUCN.

Iwata, John Jackson, and Ruth G. M. Hoskins. 2020. “Managing Indigenous Knowledge in Tanzania: A Business Perspective.” Pp. 480–97 in *Indigenous Studies: Breakthroughs in Research and Practice*, edited by Information Resources Management Association. Hershey, PA: IGI Global.

Jabareen, Yosef R. 2009. “Building a Conceptual Framework: Philosophy, Definitions, and Procedure.” *International Journal of Qualitative Methods* 8:49–62.

Jacobs, Jane M. 2015. “Postcolonial Geography.” Pp. 644–46 in *International Encyclopedia of the Social & Behavioral Sciences*, edited by J.D. Wright. Amsterdam: Elsevier.

Jain, Alka et al. 2005. “Matting Rush (Schoenoplectus Lacustris (Linn.) Palla): Status, Utility, Threat, Cultivation and Conservation Options in Manipur.” *Current Science* 1018–22.

Jamieson, Jemima. 2010. “The Role of Indigenous Communities in the Pursuit of Sustainability.” *International Environmental Law Review* 161:161–96.

Janz, Karin. 2009. “Indigenous Knowledge and Land Use Planning.” Technische Universität Berlin.

Jigyasu, Rohit. 2019. “Reducing Disaster Vulnerability through Local Knowledge and Capacity.” University of Trondheim.

Jischa, M. F. 1999. “Das Leitbild Nachhaltigkeit und das Konzept Technikbewertung.” *Brandenburgische Umwelt Berichte* 5:81–94.

Jokila, Suvi. 2015. “The Internationalization of Higher Education with Chinese Characteristics: Appadurai’s Ideas Explored.” *Asia Pacific Journal of Education* 35(1):125–39.

Jones, Harry. 2012. “Promoting Evidence-Based Decision-Making in Development Agencies.” *ODI Background Note* 1(1):1–6.

Júnior, Washington Soares Ferreira, Paulo Henrique Santos Gonçalves, Reinaldo Farias Paiva De Lucena, and Ulysses Paulino de Albuquerque. 2016. “Alternative Views of Folk Classification.” Pp. 123–30 in *Introduction to Ethnobiology*, edited by U.P. de Albuquerque and R.R.N. Alves. Cham: Springer International Publishing.

Kajetzke, Laura. 2008. *Wissen im Diskurs. Ein Theorienvergleich von Bourdieu und Foucault*. Wiesbaden: VS.

Kant, Immanuel. 1908. *Critique of Pure Reason*. Cambridge, MA: Houghton Mifflin.

Karki, Madhav et al. 2017. *Knowing Our Lands and Resouces: Indigenous and Local Knowledge and Practices Related to Biodiversity and Ecosystem Services in Asia*. Paris: UNESCO.

Kassaye, Aida Esther. 2015. *Transnational Grandparenting. Intergenerational Kinship Support among Ethiopian Migrant Families in Washington, D.C. and Addis Ababa*. Amsterdam/Bangalore: Amsterdam Institute for Social Science Research/National Institute of Advanced Studies.

Kate, Kerry ten, and Sarah A. Laird. 1999. *The Commercial Use of Biodiversity: Access to Genetic Resources and Benefit-Sharing*. London: Earthscan.

Kates, Robert W., Thomas M. Parris, and Anthony A. Leiserowitz. 2005. “What Is Sustainable Development? Goals, Indicators, Values, and Practice.” *Environment: Science and Policy for Sustainable Development* 47(3):8–21.

Kay, Paul, Brent Berlin, Luisa Maffi, William R. Merrifield, and Richard Cook. 2009. *The World Color Survey*. Stanford, CA: CSLI Publications.

Kay, Paul, and Chad K. McDaniel. 1978. “The Linguistic Significance of the Meanings of Basic Color Terms.” *Language* 610–46.

Kempny, Marian. 2005. “History of the Manchester ‘School’ and the Extended-Case Method.” *Social Analysis: The International Journal of Social and Cultural Practice* 49(3):144–65.

Keseljevic, Aleksandar. 2013. “Contemporary Aspects of Understanding Knowledge.” *Актуальні проблеми економіки* (4):357–64.

Khalifa, Kareem. 2017. *Understanding, Explanation, and Scientific Knowledge*. Cambridge: Cambridge University Press.

Khvorostianov, Natalia. 2016. "'Thanks to the Internet, We Remain a Family': ICT Domestication by Elderly Immigrants and Their Families in Israel." *Journal of Family Communication* 16(4):355–68.

Kieslinger, Julia, Perdita Pohle, Viviana Buitrón, and Thorsten Peters. 2019. "Encounters Between Experiences and Measurements: The Role of Local Knowledge in Climate Change Research." *Mountain Research and Development* 39(2).

Kim, Joohee. 2016. "Instant Mobility, Stratified Prostitution Market: The Politics of Belonging of Korean Women Selling Sex in the US." *Asian Journal of Women's Studies* 22(1):48–64.

Kind, Amy. 2014. "Introspection." Internet Encyclopedia of Philosophy edited by J. Fieser and B. Dowden. Retrieved May 21, 2014 (http://www.iep.utm.edu/introspe/).

Kingsbury, Noel. 2009. *Hybrid: The History and Science of Plant Breeding*. Chicago/London: University of Chicago Press.

Kiss, Károly. 2011. "Rise and Fall of the Concept Sustainability." *Journal of Environmental Sustainability* 1:7–18.

Klein, Peter D. 2005. "Epistemology." Routledge Encyclopedia of Philosophy edited by E. Craig. Retrieved January 15, 2014 (http://www.rep.routledge.com/article/P059).

Kletzin, Birgit. 2002. *Europa aus Rasse und Raum: die nationalsozialistische Idee der neuen Ordnung*. Hamburg/London: Munster.

Kluckhohn, Clyde. 1951a. "'A Comparative Study of Values in Five Cultures' Foreward to 'Navaho Veterans, a Study in Changing Values' by Evon Z. Vogt." *Papers of the Peabody Museum of American Archaeology and Ethnology* 41(1):v11-ix.

Kluckhohn, Clyde. 1951b. "Values and Value Orientations in the Theory of Action." Pp. 388–433 in *Toward a General Theory of Action*, vol. 5, edited by T. Parsons and E. Shils. Cambridge (Mass.): Harvard University Press.

Kluckhohn, Clyde. 1956. "Towards a Comparison of Value-Emphasis in Different Cultures." Pp. 116–32 in *The State of the Social Sciences*, edited by L.D. White. Chicago: Chicago University Press.

Kluckhohn, Florence, and Fred L. Strodtbeck. 1961. *Variations in Value Orientations*. Evanston: Row, Peterson.

Knoblauch, Hubert. 2003. "Habitus und Habitualisierung." Pp. 187–201 in *Pierre Bourdieus Theorie des Sozialen*. Konstanz: UVK.

Knoblauch, Hubert. 2005. *Wissenssoziologie*. Konstanz: UVK.

Knoblauch, Hubert, and Bernt Schnettler. 2004. "'Postsozialität', Alterität und Alienität." Pp. 23–41 in *Der maximal Fremde. Begegnungen mit dem Nichtmenschlichen und die Grenzen des Verstehens*, edited by M. Schetsche. Würzburg: Ergon.

Knorr-Cetina, Karin D. 1999. *Epistemic Cultures: How the Sciences Make Knowledge*. Cambridge, Mass.: Harvard University Press.

Kochan, Dror. 2016. "Home Is Where I Lay down My Hat? The Complexities and Functions of Home for Internal Migrants in Contemporary China." *Geoforum* 71:21–32.

Koh, Aaron. 2003. "Global Flows of Foreign Talent: Identity Anxieties in Singapore's Ethnoscape." *SOJOURN: Journal of Social Issues in Southeast Asia* 18(2):230–56.

Kokot, Waltraud. 2007. “Culture and Space - Anthropological Approaches.” *Ethnologie und Raum* 1(4):10–23.

Kone, Naferima et al. 2012. “Perceptions des éleveurs et stratégies de gestion du risque trypanosomien dans le bassin du fleuve Mouhoun (Burkina Faso).” *Cahiers Agricultures* 21(6):404–16.

König, Alexandra, and Oliver Berli. 2013. “Das Paradox der Doxa - Macht und Herrschaft als Leitmotiv der Soziologie Pierre Bourdieus.” Pp. 303–33 in *Macht und Herrschaft: sozialwissenschaftliche Konzeptionen und Theorien*, edited by P. Imbusch. Wiesbaden: Springer.

Kopfmüller, Jürgen et al. 2001. *Nachhaltige Entwicklung integrativ betrachtet: Konstitutive Elemente, Regeln, Indikatoren*. Berlin: Edition sigma.

Kopfmüller, Jürgen. 2010. “Von der kulturellen Dimension nachhaltiger Entwicklung zur Kultur nachhaltiger Entwicklung.” Pp. 43–58 in *Wechselspiele: Kultur und Nachhaltigkeit. Annäherungen an ein Spannungsfeld*, edited by O. Parodi, G. Banse, and A. Schaffer. Berlin: Edition sigma.

Korf, Benedikt. 2005. “Wer hat Angst vorm Schurkenstaat?: Macht/Raum-Diskurse in Sri Lanka.” *Geographica Helvetica* 60(2):127–35.

Korff, Ruediger. 2003. “Local Enclosures of Globalization. The Power of Locality.” *Dialectical Anthropology* 27(1):1–18.

Koroneos, C., E. Nanaki, D. Rovas, and M. Krokida. 2013. “Life Cycle Assessment: A Strategic Tool for Sustainable Development Decisions.” *The 3rd World Sustainability Forum* 1–8.

Kotze, Donovan C., and Catherine H. Traynor. 2011. “Wetland Plant Species Used for Craft Production in Kwazulu–Natal, South Africa: Ethnobotanical Knowledge and Environmental Sustainability.” *Economic botany* 65(3):271.

Kraidy, Marwan M. 2005. *Hybridity, or the Cultural Logic of Globalization*. Philadelphia, PA: Temple University Press.

Kraidy, Marwan M., and Patrick D. Murphy. 2008. “Shifting Geertz: Toward a Theory of Translocalism in Global Communication Studies.” *Communication Theory* 18(3):335–55.

Kraipeerapun, Kittima, and Sumlee Thongthew. 2007. “The Development of Ethnobotany Curriculum for Students in Rural Schools: An Approach That Incorporates the Needs and Insights of Local Communities.” *International Education Journal* 8(1):64–70.

Krupnik, Igor, and G. Carleton Ray. 2007. “Pacific Walruses, Indigenous Hunters, and Climate Change: Bridging Scientific and Indigenous Knowledge.” *Deep sea research part II: topical studies in oceanography* 54(23–26):2946–57.

Kuper, Adam. 1999. *Culture: The Anthropologists’ Account*. Cambridge, Mass.: Harvard University Press.

Kuper, Adam. 2003. “The Return of the Native.” *Current Anthropology* 44(3):389–402.

Kupka, Thomas. 2013. “Philosophie der Wissenschaftskunst. Philosophiehistorische Beobachtungen zur Bedeutung von Regeln des wissenschaftlichen Sprechens.” *Berichte zur Wissenschaftsgeschichte* 36(1):57–82.

Lachenmann, Gudrun. 1994. “Systeme des Nichtwissens. Alltagsverstand und Expertenbewusstsein im Kulturvergleich.” Pp. 285–305 in *Expertenwissen. Die institutionelle Kompetenz zur Konstruktion von Wirklichkeit*, edited by R. Hitzler, A. Honer, and C. Maeder. Opladen: Westdeutscher Verlag.

Lachenmann, Gudrun. 2001. “Societal and Cultural Enabling Environment, Spaces, Knowledge and Agency for Lifelong Learning.” Pp. 55–68 in *Creative and inclusive strategies for lifelng learning: Report of the international roundtable 27 - 29 November 2000*, edited by G. Youngs, T. Ohsakoo, and C. Medel-Añonuevo. Hamburg: UNESCO Institute for Education.

Lachenmann, Gudrun. 2010. “Globalisation in the Making: Translocal Gendered Spaces in Muslim Societies.” Pp. 335–67 in *Translocality. The study of globalising processes from a Southern perspective*, edited by U. Freitag and A. von Oppen. Leiden/Boston: Brill.

Lachenmann, Gudrun. 2012. “‘Globale Ethnographie’ und die Rechtfertigung entwicklungspolitischer/sozialanthropologischer Forschung im Alltag.” Pp. 101–18 in *Lebenswelt und Ethnographie: Beiträge der 3. Fuldaer Feldarbeitstage, 2./3. Juni 2011*, edited by N. Schröer, V. Hinnenkamp, S. Kreher, and A. Poferi. Fulda: Oldib Verlag.

Lacina, Bethany, Karen Albert, and Emily VanMeter. 2017. “Shared Territory, Regime Alignment, and Forced Displacement.” in *Annual conference of the International Studies Association*.

Lackey, Jennifer. 2005. “Memory as a Generative Epistemic Source.” *Philosophy and Phenomenological Research* 70(3):636–58.

Lackey, Jennifer. 2006. “Knowing from Testimony.” *Philosophy Compass* 1(5):432–48.

Lackey, Jennifer. 2007. “Why Memory Really Is a Generative Epistemic Source: A Reply to Senor.” *Philosophy and Phenomenological Research* 74(1):209–19.

Lado, Cleophas. 2004. “Sustainable Environmental Resource Utilisation: A Case Study of Farmers’ Ethnobotanical Knowledge and Rural Change in Bungoma District, Kenya.” *Applied Geography* 24(4):281–302.

Laird, Sarah A. 2002. *Biodiversity and Traditional Knowledge: Equitable Partnerships in Practice*. London: Earthscan.

Lange, Philipp. 2016. “Sustainability Governance - Exploring the Potential of Governance Modes to Promote Sustainable Development.” University of Basel.

Langhelle, Oluf. 2000. “Sustainable Development and Social Justice: Expanding the Rawlsian Framework of Global Justice.” *Environmental Values* 9(3):295–323.

Latour, Bruno. 1987. *Science in Action: How to Follow Scientists and Engineers through Society*. Cambridge, MA: Harvard University Press.

Latour, Bruno. 1994. *Nous n’avons jamais été modernes: essai d’anthropologie symétrique*. Paris: Editions La Découverte.

Latour, Bruno. 1996. “On Actor-Network Theory: A Few Clarifications.” *Soziale Welt* 4:369–81.

Latulippe, Nicole, and Nicole Klenk. 2020. “Making Room and Moving over: Knowledge Co-Production, Indigenous Knowledge Sovereignty and the Politics of Global Environmental Change Decision-Making.” *Current Opinion in Environmental Sustainability* 42:7–14.

Lauser, Andrea. 2004. *“Ein guter Mann ist harte Arbeit” : eine ethnographische Studie zu philippinischen Heiratsmigrantinnen*. Bielefeld: Transcript.

Lauser, Andrea. 2005. “Translokale Ethnographie.” *Forum Qualitative Sozialforschung* 6(3).

Lebbie, Aiah R., and Raymond P. Guries. 1995. “Ethnobotanical Value and Conservation of Sacred Groves of the Kpaa Mende in Sierra Leone.” *Economic Botany* 49(3):297–308.

Lebel, Louis. 2012. “Local Knowledge and Adaptation to Climate Change in Natural Resource-Based Societies of the Asia-Pacific.” *Mitigation and Adaptation Strategies for Global Change* 18(7):1057–76.

Lefebvre, Henri. 1974. *La production de l’espace*. Paris: Anthropos.

Lehtonen, Markku. 2004. “The Environmental-Social Interface of Sustainable Development: Capabilities, Social Capital, Institutions.” *Ecological economics* 49(2):199–214.

Lélé, Sharachchandra M. 1991. “Sustainable Development: A Critical Review.” *World development* 19(6):607–21.

Lengnick-Hall, Cynthia A., Pepe Lee Chang, and Amanda J. Lengnick-Hall. 2010. *Indigenous Knowledge as a Strategic Resource: An Ethical and Societal Challenge*. University of Texas at San Antonio, College of Business (Working Paper Series).

Lenneberg, E., and J. Roberts. 1955. “The Denotata of Language Terms.” Pp. 1–8 in *Linguistic Society of America*.

Lenz, Karl. 1991. “Goffman - ein Strukturalist?” Pp. 243–97 in *Erving Goffman - ein soziologischer Klassiker der zweiten Generation*, edited by R. Hettlage and K. Lenz. Bern/Stuttgart: Haupt.

Leonti, Marco, and Laura Casu. 2013. “Traditional Medicines and Globalization: Current and Future Perspectives in Ethnopharmacology.” *Frontiers in pharmacology* 4.

Leonti, Marco, Otto Sticher, and Michael Heinrich. 2003. “Antiquity of Medicinal Plant Usage in Two Macro-Mayan Ethnic Groups (Mexico).” *Journal of Ethnopharmacology* 88(2–3):119–24.

Leonti, Marco, and Robert Verpoorte. 2017. “Traditional Mediterranean and European Herbal Medicines.” *Journal of Ethnopharmacology* 199:161–67.

Levering, Bas. 2002. “Concept Analysis as Empirical Method.” *International Journal of Qualitative Methods* 1:35–48.

Lévi-Strauss, Claude. 1962. *The Savage Mind*. London: Weidenfeld and Nicolson.

Levinson, Stephen C. 2000. “Yélî Dnye and the Theory of Basic Color Terms.” *Journal of Linguistic Anthropology* 10(1):3–55.

Lewington, Anna. 1993. *Medicinal Plants and Plant Extracts. A Review of Their Importation into Europe*. Cambridge, UK: Traffic International.

Lienert, Juri. 2017. “The Sustainable Use of Non-Timber Forest Products in the Context of Rural Western Nepal - Merging Capabilities and Livelihoods.” University of Basel.

Lin, Pei-Shan Sonia, and Kai-Min Chang. 2020. “Metamorphosis from Local Knowledge to Involuted Disaster Knowledge for Disaster Governance in a Landslide-Prone Tribal Community in Taiwan.” *International Journal of Disaster Risk Reduction* 42:101339.

Lipton, Peter. 1998. “The Epistemology of Testimony.” *Studies in History and Philosophy of Science* 29(1):1–31.

Littig, Beate, and Erich Grießler. 2004. *Soziale Nachhaltigkeit*. Wien: Bundeskammer für Arbeiter u. Angestellte.

Lloyd, Margaret M. 2003. “More Important than Education: Using Telecommunications to Connect Indigenous Students with Their Home Community.” *Social Alternatives* 22(3):32–36.

Lock, Andy, and Tom Strong. 2010. *Social Constructionism. Sources and Stirrings in Theory and Practice*. Cambridge, UK/New York: Cambridge University Press.

Long, Norman. 1989. “Introduction: The Raison d’être for Studying Rural Development Interface.” Pp. 1–10 in *Encounters at the interface: A perspective on social discontinuities in rural development*, edited by N. Long. Wageningen: Agricultural University.

Long, Norman. 1996. “Globalization and Localization: New Challenges for Rural Research.” *University of Zimbabwe - Seminar Papers* 463:1–17.

Long, Norman. 2001. *Development Sociology: Actor Perspectives*. London: Routledge.

Lossau, Julia, and Roland Lippuner. 2004. “Geographie und spatial turn (Geography and the Spatial Turn).” *Erdkunde* 58(3):201–11.

Löw, Martina. 2001. *Raumsoziologie*. Frankfurt am Main: Suhrkamp.

Lowe, Lisa. 1996. *Immigrant Acts: On Asian American Cultural Politics*. Durham: Duke University Press.

Lowenthal, David. 1975. “Past Time, Present Place: Landscape and Memory.” *Geographical Review* 1–36.

Lu, Flora. 2007. “Integration into the Market among Indigenous Peoples - A Cross-Cultural Perspective from the Ecuadorian Amazon.” *Current Anthropology* 48(4):593–602.

Lucy, John A. 1997a. “Linguistic Relativity.” *Annual Review of Anthropology* 26(1):291–312.

Lucy, John A. 1997b. “The Linguistics of ‘Color.’” Pp. 320–436 in *Color categories in thought and language*, edited by C.L. Hardin and L. Maffi. Cambridge: Cambridge University Press.

Lucy, John A. 1999. *Language Diversity and Thought: A Reformulation of the Linguistic Relativity Hypothesis*. Cambridge; New York: Cambridge University Press.

Luutz, Wolfgang. 2005. *Raum, Macht, Einheit: sozialphilosophische und politiktheoretische Reflexionen*. München: M Press.

Maasen, Sabine. 2008. *Wissenssoziologie*. Bielefeld: transcript.

Mackey, Eva. 2005. “Universal Rights in Conflict: ‘Backlash’ and ‘Benevolent Resistance’ to Indigenous Land Rights.” *Anthropology today* 21(2):14–20.

MacLaury, Robert E. 1997. *Color and Cognition in Mesoamerica: Constructing Categories as Vantages*. Austin: University of Texas Press.

MacLeod, Arlene E. 1991. *Accommodating Protest: Working Women the New Veiling and Change in Cairo*. New York: Columbia University Press.

Maffi, Luisa. 2001. *On Biocultural Diversity: Linking Language, Knowledge, and the Environment*. Washington, D.C.: Smithsonian Institution Press.

Maffi, Luisa. 2005. “Linguistic, Cultural, and Biological Diversity.” *Annual Review of Anthropology* 34:599–617.

Mahomoodally, Mohamad Fawzi, Kheemy Protab, and Muhammad Zakariyyah Aumeeruddy. 2019. “Medicinal Plants Brought by Indian Indentured Immigrants: A Comparative Review of Ethnopharmacological Uses between Mauritius and India.” *Journal of Ethnopharmacology* 234:245–89.

Malaurent, Julien, and David Avison. 2017. “Reflexivity: A Third Essential ‘R’ to Enhance Interpretive Field Studies.” *Information & Management* 54(7):920–33.

Malinowski, Bronislaw. 1922. *Argonauts of the Western Pacific. An Account of Native Enterprise and Adventure in the Archipelagos of Melanesian New Guinea*. London/New York: G. Routledge & Sons.

Mallan, Kerry, Barbara Ashford, and Parlo Singh. 2010. “Navigating IScapes: Australian Youth Constructing Identities and Social Relations in a Network Society.” *Anthropology & Education Quarterly* 41(3):264–79.

Malley, Zacharia J. U., Mohamad K. Mzimbiri, and Juliana A. Mwakasendo. 2009. “Integrating Local Knowledge with Science and Technology in Management of Soil, Water and Nutrients: Implications for Management of Natural Capital for Sustainable Rural Livelihoods.” *International Journal of Sustainable Development & World Ecology* 16(3):151–63.

Manasi, S., and K. V Raju. 2020. “Cultural Influences on Health, Traditions and Ecology.” Pp. 123–53 in *Coping Mechanisms for Climate Change in Peri-Urban Areas*, edited by S. Manasi and K. V Raju. Cham: Springer.

Mand, Kanwal. 2005. “Marriage and Migration through the Life Course Experiences of Widowhood, Separation and Divorce amongst Transnational Sikh Women.” *Indian journal of gender studies* 12(2–3):407–25.

Mand, Kanwal. 2006. “Gender, Ethnicity and Social Relations in the Narratives of Elderly Sikh Men and Women.” *Ethnic and racial studies* 29(6):1057–71.

Mandaville, James Paul. 2004. “Bedouin Ethnobotany: Plant Concepts and Plant Use in a Desert Pastoral World.” The University of Arizona.

Maragia, Bosire. 2006. “Indigenous Sustainability Paradox and the Quest for Sustainability in Post-Colonial Societies: Is Indigenous Knowledge All That Is Needed?” *International Environmental Law Review* 18:197–248.

Marcus, George E. 1989. “Imagining the Whole. Ethnography’s Contemporary Efforts to Situate Itself.” *Critique of Anthropology* 9(3):7–30.

Marcus, George E. 1995. “Ethnography in/of the World System: The Emergence of Multi-Sited Ethnography.” *Annual review of anthropology* 95–117.

Marcus, George E. 1998. *Ethnography through Thick and Thin*. Princeton, NJ: Princeton University Press.

Marcus, George E. 2005. “Multi-Sited Ethnography: Five or Six Things I Know about It Now.” Pp. 16–34 in *Multi-Sited Ethnography: Problems and Possibilities in the Translocation of Research Methods*, edited by S. Coleman and P. von Hellermann. New York: Routledge.

Marcus, George E. 2007. “Collaborative Imaginaries.” *Taiwan Journal of Anthropology* 5(1):1–17.

Marinova, Dora, and Margaret Raven. 2006. “Indigenous Knowledge and Intellectual Property: A Sustainability Agenda.” *Journal of Economic Surveys* 20(4):587–605.

Markie, Peter J. 2013a. “Rational Intuition and Understanding.” *Philosophical Studies* 163(1):271–90.

Markie, Peter J. 2013b. “Rationalism vs. Empiricism.” The Stanford Encyclopedia of Philosophy (Sum 2013) edited by E.N. Zalta. Retrieved November 12, 2013 (http://plato.stanford.edu/archives/sum2013/entries/rationalism-empiricism/).

Marschall, Paul. 2018. *Evidence-Oriented Approaches in Development Cooperation: Experiences, Potential and Key Issues*. Bonn: Deutsches Institut für Entwicklungspolitik.

Martin, Emily. 1994. *Flexible Bodies: Tracking Immunity in American Culture from the Days of Polio to the Age of AIDS*. Boston: Beacon Press.

Martinich, A. P., and Avrum Stroll. 2014. “Epistemology.” Encyclopedia Britannica Online Academic Edition. Retrieved January 24, 2014 (http://www.britannica.com/EBchecked/topic/190219/epistemology).

Massey, Doreen. 2009. “Concepts of Space and Power in Theory and in Political Practice.” *Documents d’anàlisi geogràfica* (55):15–26.

Massey, Doreen. 2010. *A Global Sense of Place*. Aughty.org.

Matusitz, Jonathan. 2011. “Disney’s Successful Adaptation in Hong Kong: A Glocalization Perspective.” *Asia Pacific Journal of Management* 28(4):667–81.

Mauss, Marcel. 1954. *The Gift: The Forms and Functions of Exchange in Archaic Societies*. London: Cohen and West.

Mavhura, Emmanuel, Siambabala Bernard Manyena, Andrew E. Collins, and Desmond Manatsa. 2013. “Indigenous Knowledge, Coping Strategies and Resilience to Floods in Muzarabani, Zimbabwe.” *International Journal of Disaster Risk Reduction* 5:38–48.

Mayar, Mahshid. 2011. “Review: Translocality: The Study of Globalising Processes from a Southern Perspective by Ulrike Freitag and Achim von Oppen.” *Localities* 11:267–70.

Maznevski, Martha L., Carolina B. Gomez, Joseph J. DiStefano, Niels G. Noorderhaven, and Pei-Chuan Wu. 2002. “Cultural Dimensions at the Individual Level of Analysis. The Cultural Orientations Framework.” *International Journal of Cross Cultural Management* 2(3):275–95.

Mazzocchi, Fulvio. 2008. “Analyzing Knowledge as Part of a Cultural Framework: The Case of Traditional Ecological Knowledge.” *Environments* 36(2):39–57.

McCaleb, R. S. 1997. “Medicinal Plants for Healing the Planet: Biodiversity and Environmental Health Care.” Pp. 221–42 in *Biodiversity and Human Health Care*, edited by F. Grifo and J. Rosenthal. Washington: Island Press.

McDade, T. W. et al. 2007. “Ethnobotanical Knowledge Is Associated with Indices of Child Health in the Bolivian Amazon.” *Proceedings of the National Academy of Sciences of the United States of America* 104(15):6134–39.

McDermid, Douglas. 2014. “Pragmatism.” Internet Encyclopedia of Philosophy edited by J. Fieser and B. Dowden. Retrieved September 3, 2014 (http://www.iep.utm.edu/pragmati/#SH2e).

McGregor, Deborah. 2004. “Coming Full Circle: Indigenous Knowledge, Environment, and Our Future.” *American Indian Quarterly* 28(3/4):385–410.

McLuhan, Marshall. 1964. *Understanding Media: The Extensions of Man*. New York: McGraw-Hill.

McNeill, Desmond. 2004. “The Concept of Sustainable Development.” *Development Studies and Political Ecology in a North South Perspective* 5:26–46.

Meadows, Donella H., and Club of Rome. 1972. *The Limits to Growth: A Report for the Club of Rome’s Project on the Predicament of Mankind*. New York: Universe Books.

Mechik, Elena, and Michael von Hauff. 2016. “Requirements for the Sustainable Development of Economic Activities in Tropical Forest Communities.” *European Journal of Sustainable Development* 5(4):107.

Mechik, Elena, Michael von Hauff, L. H. L. de Moura, and Hermann Held. 2017. “Analysis of the Changes in Economic Activities of Brazilian Forest Communities after Methodical Support and Provision of Pre-Financing Capital.” *Journal of Tropical Forest Science* 227–37.

de Medeiros, Patricia Muniz et al. 2012. “The Use of Medicinal Plants by Migrant People: Adaptation, Maintenance, and Replacement.” *Evidence-based Complementary and Alternative Medicine: eCAM* 2012:807452.

Medicinal Plant Specialist Group. 2005. *International Standard for Sustainable Wild Collection of Medicinal and Aromatic Plants (ISSC-MAP)*. Bonn/Gland/Frankfurt/Cambridge: Bundesamt für Naturschutz (BfN).

Menendez-Baceta, Gorka, Laura Aceituno-Mata, Javier Tardío, Victoria Reyes-García, and Manuel Pardo-de-Santayana. 2012. “Wild Edible Plants Traditionally Gathered in Gorbeialdea (Biscay, Basque Country).” *Genetic Resources and Crop Evolution* 59(7):1329–47.

Mercer, Jessica, and Ilan Kelman. 2010. “Living alongside a Volcano in Baliau, Papua New Guinea.” *Disaster Prevention and Management: An International Journal* 19(4):412–22.

Mgbeoji, Ikechi. 2006. *Global Biopiracy: Patents, Plants, and Indigenous Knowledge*. Vancouver: University of British Columbia Press.

Michelsen, Gerd, Maik Adomßent, Pim Martens, and Michael von Hauff. 2016. “Sustainable Development - Background and Context.” Pp. 5–29 in *Sustainability Science*, edited by H. Heinrichs, P. Martens, G. Michelsen, and A. Wiek. Dordrecht: Springer.

Miehlau, Sabine, and Frank Wickl. 2007. *Lokales Wissen und Entwicklung*. Bad Honnef: Horlemann.

Miles, Matthew B., and A. Michael Huberman. 1994. *Qualitative Data Analysis: An Expanded Sourcebook*. London: Sage.

Minowa, Yuko, Luca M. Visconti, and Pauline Maclaran. 2012. “Researchers’ Introspection for Multi-Sited Ethnographers: A Xenoheteroglossic Autoethnography.” *Journal of Business Research* 65(4):483–89.

Mintz, Sidney W. 1985. *Sweetness and Power: The Place of Sugar in Modern History*. New York: Penguin.

Miranda, Adelina. 1995. “L’agencement de la multilocalité depuis le lieu d’origine. Le cas de Casalvieri (sud de l’Italie) et ses migrants.” *Espaces et sociétés* (80–81):271–89.

Moncrieffe, Joy. 2006. “The Power of Stigma: Encounters with ‘Street Children’ and ‘Restavecs.’” *IDS Bulletin* 37(6):34–46.

Moreda, Tsegaye. 2015. “Listening to Their Silence? The Political Reaction of Affected Communities to Large-Scale Land Acquisitions: Insights from Ethiopia.” *Journal of Peasant Studies* 42(3–4):517–39.

Moss, Laura. 2003. “The Politics of Everyday Hybridity: Zadie Smith’s White Teeth.” *Wasafiri* 18(39):11–17.

Müller, Birgit, Anja Linstädter, Karin Frank, Michael Bollig, and Christian Wissel. 2007. “Learning from Local Knowledge: Modeling the Pastoral-Nomadic Range Management of the Himba, Namibia.” *Ecological Applications* 17(7):1857–75.

Müller, Christine. 2003. “Knowledge between Globalization and Localization: The Dynamics of Female Spaces in Ghana.” *Current Sociology* 51(3–4):329–46.

Murillo, Juan Carlos. 2008. “Forced Displacement in the Americas and Its Impact on Regional Migrations.” *Revista Interdisciplinar da Mobilidade Humana* 16(31).

Nadai, Eva, and Christoph Maeder. 2005. “Fuzzy Fields. Multi-Sited Ethnography in Sociological Research.” *Forum: Qualitative Social Research* 6(3):1–9.

Nagel, Jennifer. 2007. “Epistemic Intuitions.” *Philosophy Compass* 2(6):792–819.

Narayanasamy, Nammmalvar. 2009. *Participatory Rural Appraisal: Principles, Methods and Application*. New Delhi: SAGE Publications India.

Nardon, Luciara, and Richard M. Steers. 2009. “The Culture Theory Jungle: Divergence and Convergence in Models of National Culture.” Pp. 3–22 in *Cambridge handbook of culture, organizations, and work*, vol. 38, edited by R.S. Bhagat and R.M. Steers. Cambridge, UK/New York: Cambridge University Press.

Nazarea, Virginia D. 2006. “Local Knowledge and Memory in Biodiversity Conservation.” *Annual Review of Anthropology* 35:317–35.

Nedelcu, Mihaela, and Malika Wyss. 2016. “‘Doing Family’ through ICT-Mediated Ordinary Co-Presence: Transnational Communication Practices of Romanian Migrants in Switzerland.” *Global Networks* 16(2):202–18.

Nederveen Pieterse, Jan. 2004. *Globalization and Culture: Global Mélange*. Lanham, MD: Rowman & Littlefield.

Neffati, Mohamed, and Azaiez Ouled Belgacem. 2008. “The Medicinal and Aromatic Plants Sector in the Drylands: A Promising Alternative for Sustainable Development and Combating Desertification in Tunisia.” Pp. 171–82 in *The Future of Drylands. International Scientific Conference on Desertification and Drylands Research Tunis, Tunisia, 19-21 June 2006*, edited by C. Lee and T. Schaaf. Dordrecht/Paris: Springer/UNESCO.

Nelson, E. C., and E. C. H. Oliver. 2004. “Cape Heaths in European Gardens: The Early History of South African Erica Species in Cultivation, Their Deliberate Hybridization and the Orthographic Bedlam.” *Bothalia* 34(2):127–40.

Nesheim, I., S. S. Dhillion, and K. A. Stolen. 2006. “What Happens to Traditional Knowledge and Use of Natural Resources When People Migrate?” *Human Ecology* 34(1):99–131.

Neubert, Dieter, and Elisio Macamo. 2004. “Wer weiss hier was? ‘Authentisches’ lokales Wissen und der Globalitätsanspruch der Wissenschaft.” Pp. 93–122 in *Lokales Wissen - sozialwissenschaftliche Perspektiven*, edited by N. Schareika and T. Bierschenk. Münster: LIT-Verlag.

Newmaster, A. F. et al. 2011. “Local Knowledge and Conservation of Seagrasses in the Tamil Nadu State of India.” *Journal of Ethnobiology and Ethnomedicine* 7(1):37.

van Niekerk, Jaci, and Rachel Wynberg. 2012. “The Trade in Pelargonium Sidoides: Rural Livelihood Relief or Bounty for the ‘Bio-Buccaneers’?” *Development Southern Africa* 29(4):530–47.

Niemeijer, David, and Valentina Mazzucato. 2003. “Moving beyond Indigenous Soil Taxonomies: Local Theories of Soils for Sustainable Development.” *Geoderma* 111(3–4):403–24.

Nieswand, Boris. 2009. “Ethnography between Locality and Sociality.” *MMG Working Paper* 6:1–26.

Nigh, Ronald et al. 2002. “Maya Medicine in the Biological Gaze: Bioprospecting Research as Herbal Fetishism.” *Current Anthropology* 43(3):451–77.

Nilsson, Marie, G. Trehn, and Kjell Asplund. 2001. “Use of Complementary and Alternative Medicine Remedies in Sweden. A Population-Based Longitudinal Study within the Northern Sweden MONICA Project.” *Journal of Internal Medicine* 250(3):225–33.

Novy, Andreas. 1998. “Raum-Macht. Eine vergessene Kategorie der Weltstadtforschung.” *SRE-Discussion* 57:1–29.

Nussbaum, Martha Craven. 2011. *Creating Capabilities: The Human Development Approach*. Cambridge, MA/London, UK: The Belknap Press of Harvard University Press.

Nygren, Anja. 1999. “Local Knowledge in the Environment-Development Discourse: From Dichotomies to Situated Knowledges.” *Critique of Anthropology* 19(3):267–88.

O’Brien, Dan. 2006. “Introduction to the Epistemology of Testimony.” *Philosophica Gent* 78:5–11.

O’Flaherty, R. Michael, Iain J. Davidson-Hunt, and Micheline Manseau. 2008. “Indigenous Knowledge and Values in Planning for Sustainable Forestry: Pikangikum First Nation and the Whitefeather Forest Initiative.” *Ecology and Society* 13(1).

O’Reilly, Karen. 2005. *Ethnographic Methods*. Abingdon, Oxford: Routledge.

Oakes, Tim, and Louisa Schein. 2006. *Translocal China: Linkages, Identities, and the Reimagining of Space*. London/New York: Routledge.

Obermeister, Noam. 2019. “Local Knowledge, Global Ambitions: IPBES and the Advent of Multi-Scale Models and Scenarios.” *Sustainability Science* 14(3):843–56.

Ohmagari, K., and Fikret Berkes. 1997. “Transmission of Indigenous Knowledge and Bush Skills among the Western James Bay Cree Women of Subarctic Canada.” *Human Ecology* 25(2):197–222.

Okereke, Chukwumerije. 2006. “Global Environmental Sustainability: Intragenerational Equity and Conceptions of Justice in Multilateral Environmental Regimes.” *Geoforum* 37(5):725–38.

Olive, James L. 2014. “Reflecting on the Tensions between Emic and Etic Perspectives in Life History Research: Lessons Learned.” *Forum Qualitative Sozialforschung/Forum: Qualitative Social Research* 15(2):1–19.

de Oliveira Braga, Heitor, Miguel Ângelo Pardal, and Ulisses Miranda Azeiteiro. 2017. “Sharing Fishers Ethnoecological Knowledge of the European Pilchard (Sardina Pilchardus) in the Westernmost Fishing Community in Europe.” *Journal of Ethnobiology and Ethnomedicine* 13(1):52.

Olsson, P., and Carl Folke. 2001. “Local Ecological Knowledge and Institutional Dynamics for Ecosystem Management: A Study of Lake Racken Watershed, Sweden.” *Ecosystems* 4(2):85–104.

Orlove, Benjamin. 2007. “Editorial: Current Approaches to Hybridity.” *Current Anthropology* 48(5):631–32.

Orozco, David, and Latha Poonamallee. 2014. “The Role of Ethics in the Commercialization of Indigenous Knowledge.” *Journal of Business Ethics* 119(2):275–86.

Osbeck, Lisa. 2001. “Direct Apprehension and Social Construction: Revisiting the Concept of Intuition.” *Journal of Theoretical and Philosophical Psychology* 21:118–31.

Ostrom, Elinor. 1990. *Governing the Commons: The Evolution of Institutions for Collective Action*. Cambridge, UK: Cambridge University Press.

Ostrom, Elinor et al. 2002. *The Drama of the Commons*. Washington, DC: National Academy Press.

Ott, Konrad. 2003. “The Case for Strong Sustainability.” *Greifswald’s environmental ethics* 59–64.

Ott, Konrad, and Ralf Döring. 2008. *Theorie und Praxis starker Nachhaltigkeit*. Marburg: Metropolis.

Otten, Matthias, and Judith Geppert. 2009. “Mapping the Landscape of Qualitative Research on Intercultural Communication. A Hitchhiker’s Guide to the Methodological Galaxy.” *Forum Qualitative Sozialforschung/Forum: Qualitative Social Research* 10(1).

Overgaard, Søren, and Dan Zahavi. 2009. “Phenomenological Sociology - The Subjectivity of Everyday Life.” Pp. 93–115 in *Encountering the Everyday: An Introduction to the Sociologies of the Unnoticed*, edited by M.H. Jacobsen. Basingstoke/New York: Palgrave Macmillan.

Oxford Online Dictionaries. 2016. “Multilocality.” English Oxford Dictionaires - Online Edition. Retrieved April 23, 2016 (https://en.oxforddictionaries.com/definition/multilocality).

Palladino, Paolo. 1993. “Between Craft and Science: Plant Breeding, Mendelian Genetics, and British Universities, 1900-1920.” *Technology and Culture* 34(2):300–323.

Paniagua-Zambrana, Narel, Rodrigo Camara-Lerét, Rainer Bussmann, and Manuel Macía. 2014. “The Influence of Socioeconomic Factors on Traditional Knowledge: A Cross Scale Comparison of Palm Use in Northwestern South America.” *Ecology and Society* 19(4).

Panyadee, Prateep, Henrik Balslev, Prasit Wangpakapattanawong, and Angkhana Inta. 2019. “Medicinal Plants in Homegardens of Four Ethnic Groups in Thailand.” *Journal of Ethnopharmacology* 239:111927.

Pappas, George. 2013. “Internalist vs. Externalist Conceptions of Epistemic Justification.” The Stanford Encyclopedia of Philosophy edited by E.N. Zalta. Retrieved November 13, 2013 (http://plato.stanford.edu/archives/fall2013/entries/justep-intext/).

Parkes, Peter. 2000. “Enclaved Knowledge: Indigent and Indignant Representation of Environmental Management and Development among the Kalasha of Pakistan.” Pp. 253–91 in *Indigenous Environmental Knowledge and its Transformations. Critical Anthropological Perspectives*, edited by R. Ellen, P. Parkes, and A. Bicker. Amsterdam: Harwood Academic.

Patton, M. Q. 2010. *Qualitative Research & Evaluation Methods*. Thousand Oaks, CA: Sage Publications.

Pearce, David William, Anil Markandya, and Edward Barbier. 1989. *Blueprint for a Green Economy*. London: Routledge.

Pérez-Llantada, Carmen, and Gibson R. Ferguson. 2006. *English as a GloCalization Phenomenon. Observations from a Linguistic Microcosm*. València: Universitat de València.

Pérez, Flor Edilma Osorio. 1997. “Conflicts for Land and Territory: An Analysis of Internal Migration in the Rural Areas of Colombia.” *Refuge: Canada’s Journal on Refugees* 16(6).

Peters, Sue. 2004. “Information Mobility: The Behavioural Technoscape.” *Alternative Mobility Futures Conference* 24.

Peterson, Jenny H. 2012. “A Conceptual Unpacking of Hybridity: Accounting for Notions of Power, Politics and Progress in Analyses of Aid-Driven Interfaces.” *Journal of Peacebuilding & Development* 7(2):9–22.

Philander, Lisa E. Aston. 2012. “Hunting Knowledge and Gathering Herbs: Rastafari Bush Doctors in the Western Cape, South Africa.” *Journal of Ethnobiology* 32(2):134–56.

Pierce, Alan R., and Marla R. Emery. 2005. “The Use of Forests in Times of Crisis: Ecological Literacy as a Safety Net.” *Forests, Trees and Livelihoods* 15(3):249–52.

Pierides, Dean. 2010. “Multi-Sited Ethnography and the Field of Educational Research.” *Critical Studies in Education* 51(2):179–95.

Pieroni, Andrea, H. Muenz, M. Akbulut, K. H. C. Baser, and C. Durmuskahya. 2005. “Traditional Phytotherapy and Trans-Cultural Pharmacy among Turkish Migrants Living in Cologne, Germany.” *Journal of Ethnopharmacology* 102(1):69–88.

Pieterse, Jan Nederveen. 2001. “Hybridity, so What? The Anti-Hybridity Backlash and the Riddles of Recognition.” *Theory, Culture & Society* 18(2–3):219–45.

Pike, Kenneth L. 1967. *Language in Relation to a Unified Theory of the Structure of Human Behavior*. Berlin/Boston: Mouton.

Pilgrim, Sarah E., L. C. Cullen, David J. Smith, and J. Pretty. 2008. “Ecological Knowledge Is Lost in Wealthier Communities and Countries.” *Environmental Science & Technology* 42(4):1004–9.

Du Pisani, Jacobus A. 2006. “Sustainable Development – Historical Roots of the Concept.” *Environmental Sciences* 3(2):83–96.

Polanyi, Michael. 1958. *Personal Knowledge - towards a Post-Critical Philosophy*. Chicago: University of Chicago Press.

Posey, Darrell A. et al. 1984. “Ethnoecology as Applied Anthropology in Amazonian Development.” *Human Organization* 43(2):95–107.

Posey, Darrell A. 2002. “Commodification of the Sacred through Intellectual Property Rights.” *Journal of Ethnopharmacology* 83(1):3–12.

Posey, Darrell A., and Graham Dutfield. 1996. *Beyond Intellectual Property: Toward Traditional Resource Rights for Indigenous Peoples and Local Communities*. Ottawa/Cairo: IDRC.

Posey, Darrell A., and United Nations Environment Programme. 1999. *Cultural and Spiritual Values of Biodiversity*. London: Intermediate Technology.

Poston, Ted. 2014. “Internalism and Externalism in Epistemology.” Internet Encyclopedia of Philosophy edited by J. Fieser and B. Dowden. Retrieved March 20, 2014 (http://www.iep.utm.edu/int-ext/).

Potthast, Jörg. 2010. “Science and Technology Studies.” Pp. 91–105 in *Handbuch Wissenschaftspolitik*, edited by D. Simon, A. Knie, and S. Hornbostel. Wiesbaden: Springer.

Pottier, Johan, Alan Bicker, and Paul Sillitoe. 2003. *Negotiating Local Knowledge: Power and Identity in Development*. London: Pluto Press.

Poudel, Diwakar, Bhuwon Sthapit, and Pratap Shrestha. 2015. “An Analysis of Social Seed Network and Its Contribution to On-Farm Conservation of Crop Genetic Diversity in Nepal.” *International Journal of Biodiversity* 312621.

Powell, Jason L. 2012. “Financescapes.” The Wiley-Blackwell Encyclopedia of Globalization edited by G. Ritzer. Retrieved December 10, 2016 (http://dx.doi.org/10.1002/9780470670590.wbeog205).

Powell, Jason L., and Rebecca Steel. 2011. “Revisiting Appadurai: Globalizing Scapes in a Global World - the Pervasiveness of Economic and Cultural Power.” *International Journal of Innovative Interdisciplinary Research* (1):74–80.

Prabhu, Anjali. 2007. *Hybridity: Limits, Transformations, Prospects*. Albany: State University of New York Press.

Prescott-Allen, Robert, and Christine Prescott-Allen. 1990. “How Many Plants Feed the World?” *Conservation Biology* 4(4):365–74.

Pretty, Jules N., Irene Guijt, John Thompson, and Ian Scoones. 2002. *Participatory Learning and Action. A Trainer’s Guide*. London: International Institute for Environment and Development.

Price, L. 2006. “Wild Food Plants in Farming Environments with Special Reference to Northeast Thailand, Food as Functional and Medicinal, and the Social Roles of Women.” Pp. 65–99

in *Eating and Healing: Traditional food as medicine*, edited by A. Pieroni and Lisa Price. Binghampton: The Haworth Press.

Pritchard, Duncan. 2004. “The Epistemology of Testimony.” *Philosophical Issues* 14(1):326–48.

Pulido, Juan S., and Gerardo Bocco. 2003. “The Traditional Farming System of a Mexican Indigenous Community: The Case of Nuevo San Juan Parangaricutiro, Michoacán, Mexico.” *Geoderma* 111(3–4):249–65.

Pullman, Madeleine E., Michael J. Maloni, and Craig R. Carter. 2009. “Food for Thought: Social versus Environmental Sustainability Practices and Performance Outcomes.” *Journal of Supply Chain Management* 45(4):38–54.

Pust, Joel. 2012. “Intuition.” The Stanford Encyclopedia of Philosophy edited by E.N. Zalta. Retrieved May 6, 2013 (http://plato.stanford.edu/archives/win2012/entries/intuition/).

Quartey, Samuel Howard. 2017. “An Exploration of the Influence of Local Knowledge on Industry Sustainability towards Regional Sustainable Development: A Case Study of the Fishing Industry in the Eyre Peninsula Region.” University of Adelaide.

Quinlan, Marsha B., and Robert J. Quinlan. 2007. “Modernization and Medicinal Plant Knowledge in a Caribbean Horticultural Village.” *Medical Anthropology Quarterly* 21(2):169–92.

Randeria, Shalini. 2003. “Glocalization of Law: Environmental Justice, World Bank, NGOs and the Cunning State in India.” *Current Sociology* 51(3–4):305–28.

Rapport, Nigel. 2014. *Social and Cultural Anthropology: The Key Concepts*. London/New York: Routledge.

Raymond, Hames. 2007. “The Ecologically Noble Savage Debate.” *Annual Review of Anthropology* 36:177–90.

Raynaut, Claude, Madga Zanoni, Angela Ferreira, and Paulo Lana. 2007. “Sustainability: Where, When, for Whom? Past, Present, and Future of a Local Rural Population in a Protected Natural Area (Guaraqueçaba, Brazil).” Pp. 21–40 in *Sustainability and Communities of Place*, edited by C.A. Maida. New York/Oxford: Berghahn Books.

Redclift, Michael. 2005. “Sustainable Development (1987–2005): An Oxymoron Comes of Age.” *Sustainable Development* 13(4):212–27.

Redclift, Michael, and Colin Sage. 1998. “Global Environmental Change and Global Inequality: North/South Perspectives.” *International Sociology* 13(4):499–516.

Rehbein, Boike. 2006. *Die Soziologie Pierre Bourdieus*. Konstanz: UVK.

Reid, David. 2013. *Sustainable Development: An Introductory Guide*. London: Routledge.

Reid, Walter. 2006. “Millennium Ecosystem Assessment: Survey of Initial Impacts.” Millennium Ecosystem Assessment. Retrieved July 20, 2011 (http://www.millenniumassessment.org/documents/document.798.aspx.pdf).

Reiff, M. et al. 2003. “Ethnomedicine in the Urban Environment: Dominican Healers in New York City.” *Human Organization* 62(1):12–26.

Rennie, J. Keith, and Naresh C. Singh. 1996. *Participatory Research for Sustainable Livelihoods: A Guidebook for Field Projects*. Winnipeg: International Institute for Sustainable Development.

Reyes-García, Victoria et al. 2006. “Measuring What People Know about the Environment: A Review of Quantitative Studies.” *Tsimane Amazonian Panel Study Working Paper* 21.

Reyes-García, Victoria et al. 2008. “Non-Market Returns to Traditional Human Capital: Nutritional Status and Traditional Knowledge in a Native Amazonian Society.” *The Journal of Development Studies* 44(2):217–32.

Reyes-García, Victoria et al. 2009. “Cultural Transmission of Ethnobotanical Knowledge and Skills: An Empirical Analysis from an Amerindian Society.” *Evolution and Human Behavior* 30(4):274–85.

Reyes-García, Victoria et al. 2010. “Schooling and Local Environmental Knowledge: Do They Complement or Substitute Each Other?” *International Journal of Educational Development* 30(3):305–13.

Reyes-García, Victoria. 2010. “The Relevance of Traditional Knowledge Systems for Ethnopharmacological Research: Theoretical and Methodological Contributions.” *Journal of Ethnobiology and Ethnomedicine* 6:32.

Reyes-García, Victoria, Vincent Vadez, Tomas Huanca, William R. Leonard, and Thomas McDade. 2007. “Economic Development and Local Ecological Knowledge: A Deadlock? Quantitative Research from a Native Amazonian Society.” *Human Ecology* 35(3):371–77.

Riccio, Bruno. 2001. “From ‘ethnic Group’ to ‘Transnational Community’? Senegalese Migrants’ Ambivalent Experiences and Multiple Trajectories.” *Journal of Ethnic and Migration Studies* 27(4):583–99.

Richards, Paul. 1980. “Community Environmental Knowledge in African Rural Development.” Pp. 181–94 in *Indigenous Knowledge Systems and Development*, edited by D. Brokensha, D.M. Warren, and O. Werner. New York/London: University Press of America.

Richards, Paul. 1985. *Indigenous Agricultural Revolution: Ecology and Food Production in West Africa*. Washington D.C.: Hutchinson.

Richards, Paul. 1995. “Participatory Rural Appraisal: A Quick and Dirty Critique.” *PLA notes* 13–16.

Rist, Stephan. 2007. “Natural Resources, Sustainability and Social Learning Processes – Pathways towards Co-Production of Knowledge for Sustainable Development [Habilitation Thesis].” University of Berne.

Rist, Stephan, and Farid Dahdouh-Guebas. 2006. “Ethnosciences - A Step towards the Integration of Scientific and Indigenous Forms of Knowledge in the Management of Natural Resources for the Future.” *Environment Development and Sustainability* 8(4):467–93.

Rist, Stephan, Anne Zimmermann, and Urs Wiesmann. 2004. “From Epistemic Monoculture to Cooperation between Epistemic Communities – Lessons Learnt from Development Research.” Pp. 1–21 in *Bridging Scales and Epistemologies: Linking Local Knowledge with Global Science in Multi-Scale Assessments*, edited by J. Salick et al. Alexandria.

Ritzer, George. 1993. *The McDonaldization of Society: An Investigation into the Changing Character of Contemporary Social Life*. Newbury Park, CA r: Pine Forge Press.

Ritzer, George. 2003. “Rethinking Globalization: Glocalization/Globalization and Something/Nothing.” *Sociological Theory* 21(3):193–209.

Ritzer, George. 2004. *The Globalization of Nothing*. Thousand Oaks, CA: Pine Forge Press.

Robèrt, Karl-Henrik. 2000. “Tools and Concepts for Sustainable Development, How Do They Relate to a General Framework for Sustainable Development, and to Each Other?” *Journal of Cleaner Production* 8(3):243–54.

Robertson, Roland. 1992. *Globalization: Social Theory and Global Culture*. London: Sage.

Robertson, Roland. 1995. “Glocalization: Time-Space and Homogeneity-Heterogeneity.” Pp. 25–44 in *Global Modernities*, edited by M. Featherstone, S. Lash, and R. Robertson. London: Sage.

Robertson, Roland. 1997. “Comments on the ‘Global Triad’ and Glocalisation.” Pp. 4–17 in *Globalisation and Indigenous Culture*, edited by N. Inoue. Institute for Japanese Studies: Kokugakuin University.

Robertson, Roland. 1998. “Glokalisierung: Homogenität und Heterogenität in Raum und Zeit.” Pp. 192–220 in *Perspektiven der Weltgesellschaft*, edited by U. Beck. Frankfurt a. M.: Suhrkamp.

Robertson, Zoe, Raelene Wilding, and Sandra Gifford. 2016. “Mediating the Family Imaginary: Young People Negotiating Absence in Transnational Refugee Families.” *Global Networks* 16(2):219–36.

Robinson, Andrew. 2011. “An A-Z of Theory Arjun Appadurai.” Retrieved April 21, 2016 (https://ceasefiremagazine.co.uk/in-theory-appadurai/).

Robinson, John. 2004. “Squaring the Circle? Some Thoughts on the Idea of Sustainable Development.” *Ecological Economics* 48(4):369–84.

Rodman, Margaret C. 1992. “Empowering Place: Multilocality and Multivocality.” *American Anthropologist* 640–56.

Rodseth, Lars. 1998. “Distributive Models of Culture: A Sapirian Alternative to Essentialism.” *American Anthropologist* 100(1):55–69.

Rohracher, Harald. 2015. “History of Science and Technology Studies.” International Encyclopedia of the Social & Behavioral Sciences (2nd). Retrieved November 24, 2014 (https://doi.org/10.1016/B978-0-08-097086-8.03064-6).

Roland, Jane. 1958. “On ‘Knowing How’ and ‘Knowing That.’” *The Philosophical Review* 67(3):379–388.

Rolshoven, Johanna. 2007. “The Temptations of the Provisional: Multilocality as a Way of Life.” *Ethnologia Europaea* 37(1–2):17–25.

Roskamm, Nikolai. 2016. “Das Reden vom Raum. Zur Aktualität des Spatial Turn–Programmatik, Determinismus und ‘sozial konstruierter Raum.’” *PERIPHERIE – Politik, Ökonomie, Kultur* 32(126–127).

Ross, Norbert. 2002. “Cognitive Aspects of Intergenerational Change: Mental Models, Cultural Change, and Environmental Behavior among the Lacandon Maya of Southern Mexico.” *Human Organization* 61(2):125–38.

Ross, Norbert, and Douglas L. Medin. 2016. “Culture and Cognition: The Role of Cognitive Anthropology in Anthropology and the Cognitive Sciences.” Pp. 357–75 in *A Companion to Cognitive Anthropology*, edited by D. Kronenfeld, G. Bennardo, V. De Munck, and M. Fischer. Chichester, UK: Wiley Blackwell.

Rotenberg, Robert. 2012. “Space, Place, Site and Locality. The Study of Landscape in Cultural Anthropology.” Pp. 233–58 in *Exploring the Boundaries of Landscape Architecture*, edited by S. Bell, I. Sarlöv Herlin, and R. Stiles. London/New York: Routledge.

Rothe, Annelie. 2012. “Cognitive Anthropologists: Who Needs Them?” *Topics in Cognitive Science* 4(3):387–95.

Roudometof, Victor. 2005. “Transnationalism, Cosmopolitanism and Glocalization.” *Current Sociology* 53(1):113–35.

Roudometof, Victor. 2015. “The Glocal and Global Studies.” *Globalizations* 12(5):774–87.

Roué, Marie, and Zsolt Molnár. 2017. *Knowing Our Lands and Resources: Indigenous and Local Knowledge of Biodiversity and Ecosystem Services in Europe and Central Asia*. Paris: UNESCO Publishing.

Royal Swedish Academy of Sciences. 2019. “The Prize in Economic Sciences 2019.” Retrieved December 19, 2019 (https://www.nobelprize.org/uploads/2019/10/press-economicsciences2019.pdf).

Ruotsala, Helena. 2008. “Does Sense of Place Still Exist?” *Journal of Ethnology and Folkloristics* (2 (1):43–54.

Russell, Bertrand. 1948. *Human Knowledge: Its Scope and Limits*. New York: Simon and Schuster.

Russell, Denise. 1983. “Anything Goes.” *Social Studies of Science* 13(3):437–64.

Russo, Kurt W. 1992. *Our People, Our Land - Reflections on Common Ground: 500 Years*. Seattle, WA: Florence R. Kluckhohn Center & Lummi Indian Tribe.

Russo, Kurt W. 2000. “A Sharing of Subjectivities: The Values Project Northwest.” Pp. 165–77 in *Finding the Middle Ground: Insight and Applications of the Value Orientations Method*, edited by K.W. Russo. Yarmouth, ME: Intercultural Press.

Russo, Kurt W., and Michael D. Hills. 1984. “Value Orientations in the Lummi Indian Community and Their Commercial Associates - Report to the Lummi Indian Council.”

Ryle, Gilbert. 1949. *The Concept of Mind*. London/New York: Hutchinson’s University Library.

Salam, Akram M., and Cassandra L. Quave. 2019. “Medicinal Plants as a Reservoir of New Structures for Anti-Infective Compounds.” Pp. 277–98 in *Antibacterial Drug Discovery to Combat MDR*, edited by I. Ahmad, S. Ahmad, and K.P. Rumbaugh. Singapore: Springer.

Salim, Muhammad Asad et al. 2019. “Regional Trade of Medicinal Plants Has Facilitated the Retention of Traditional Knowledge: Case Study in Gilgit-Baltistan Pakistan.” *Journal of Ethnobiology and Ethnomedicine* 15(1):6.

De Sardan, Jean-Pierre Olivier. 2005. *Anthropology and Development: Understanding Contemporary Social Change*. London/New York: Zed Books.

Sarkis, Joseph, Marilyn Michelle Helms, and Aref A. Hervani. 2010. “Reverse Logistics and Social Sustainability.” *Corporate Social Responsibility and Environmental Management* 17(6):337–54.

Saunders, Barbara. 2000. “Revisiting Basic Color Terms.” *Journal of the Royal Anthropological Institute* 6(1):81–99.

Saunders, Barbara, and Jaap Van Brakel. 1988. “Re-Evaluating Basic Colour Terms.” *Cultural Dynamics* 1(3):359–78.

Savage, Mike, Alan Warde, and Fiona Devine. 2005. “Capitals, Assets, and Resources: Some Critical Issues.” *The British Journal of Sociology* 56(1):31–47.

Saxena, Lopamudra Patnaik. 2020. “Community Self-Organisation from a Social-Ecological Perspective: ‘Burlang Yatra’and Revival of Millets in Odisha (India).” *Sustainability* 12(5):1867.

Schareika, Nikolaus. 2004. “Lokales Wissen: ethnologische Perspektiven.” Pp. 9–40 in *Lokales Wissen - sozialwissenschaftliche Perspektiven*, edited by N. Schareika and T. Bierschenk. Münster: LIT-Verlag.

Schareika, Nikolaus, and Thomas Bierschenk. 2004. “Einführung.” Pp. 1–7 in *Lokales Wissen - sozialwissenschaftliche Perspektiven*, edited by N. Schareika and T. Bierschenk. Münster: LIT-Verlag.

Scheper-Hughes, Nancy. 2002. “The Ends of the Body - Commodity Fetishism and the Global Traffic in Organs.” *SAIS Review* 22(1):61–80.

Scheper-Hughes, Nancy. 2004. “Parts Unknown - Undercover Ethnography of the Organs-Trafficking Underworld.” *Ethnography* 5(1):29–73.

Scherrer, Yvonne M. 2009. “Environmental Conservation NGOs and the Concept of Sustainable Development.” *Journal of Business Ethics* 85(SUPPL. 3):555–71.

Schippmann, Uwe, Danna J. Leaman, and A. B. Cunningham. 2006. “A Comparison of Cultivation and Wild Collection of Medicinal and Aromatic Plants under Sustainability Aspects.” Pp. 75–95 in *Medicinal and Aromatic Plants: Agricultural, Commercial, Ecological, Legal, Pharmacological and Social Aspects*, edited by R.J. Bogers, L.E. Craker, and D. Lange. Dordrecht: Springer.

Schippmann, Uwe, Danna J. Leaman, A. B. Cunningham, and S. Walter. 2003. “Impact of Cultivation and Collection on the Conservation of Medicinal Plants: Global Trends and Issues.” Pp. 31–44 in *3rd World Congress on Medicinal and Aromatic Plants (WOCMAP-III)*, edited by A. Jatisatienr, T. Paratasilpin, S. Elliott, V. Anusarnsunthorn, and D. Wedge. Chiang Mai: International Society Horticultural Science.

Schlögel, Karl. 2006. *Im Raume lesen wir die Zeit: über Zivilisationsgeschichte und Geopolitik*. Frankfurt a. M.: Fischer.

Schmidt, Barbara M., David M. Ribnicky, Peter E. Lipsky, and Ilya Raskin. 2007. “Revisiting the Ancient Concept of Botanical Therapeutics.” *Nature Chemical Biology* 3(7):360.

Schmitz, Serge, and Lou Angeli Ocampo. 2019. “Bridging the Gap between Place Based and Global Knowledge on Socio-Natural Hazards. Some Geographical Insights Based on Fieldworks in the Philippines.” Pp. 12–20 in *International Conference on Disasters, Indigenous Knowledge, and Resilience*. Quezon City, Philippines: CARESS.

Schnettler, Bernt. 2007. “Alfred Schütz.” Pp. 102–17 in *Handbuch Wissenssoziologie und Wissensforschung*, edited by R. Schützeichel. Konstanz: UVK.

Schreiber, Waltraud. 2009. “Der ‘Spatial Turn’: Chance und Herausforderung für den Geschichtsunterricht.” Pp. 59–100 in *Raum und Zeit: Orientierung durch Geschichte*, edited by W. Schreiber and C. Gruner. Neuried: Ars una.

Schröder, Philipp, and Manja Stephan-Emmrich. 2014. “The Institutionalization of Mobility: Well-Being and Social Hierarchies in Central Asian Translocal Livelihoods.” *Mobilities* 1–24.

Schroer, Markus. 2006. “Raum, Macht und soziale Ungleichheit.” *Leviathan* 34(1):105–23.

Schuerkens, Ulrike. 2003a. “Social Transformations between Global Forces and Local Life-Worlds: Introduction.” *Current Sociology* 51(3–4):195–208.

Schuerkens, Ulrike. 2003b. “The Sociological and Anthropological Study of Globalization and Localization.” *Current Sociology* 51(3–4):209–22.

Schultz, Julia, Fridolin Brand, Jurgen Kopfmuller, and Konrad Ott. 2008. “Building a ‘Theory of Sustainable Development’: Two Salient Conceptions within the German Discourse.” *International Journal of Environment and Sustainable Development* 7(4):465–82.

Schultze, Uta. 1998. “Lokales Wissen und Entwicklungszusammenarbeit - eine Einführung.” Pp. 1–56 in *Lokales Wissen für nachhaltige Entwicklung: ein Praxisführer*, edited by S. Pasquale, P. Schröder, and U. Schultze. Saarbrücken: Verlag für Entwicklungspolitik.

Schunko, Christoph, Susanne Grasser, and Christian R. Vogl. 2012. “Intracultural Variation of Knowledge about Wild Plant Uses in the Biosphere Reserve Grosses Walsertal (Austria).” *Journal of Ethnobiology and Ethnomedicine* 8.

Schutz, Alfred. 1962a. “Choosing among Projects of Action.” Pp. 67–96 in *Collected Papers I - The Problem of Social Reality*, edited by M. Natanson. The Hague: Martinus Nijhoff.

Schutz, Alfred. 1962b. “Common-Sense and Scientific Interpretation of Human Action.” Pp. 3–47 in *Collected Papers I - The Problem of Social Reality*, edited by M. Natanson. The Hague: Martinus Nijhoff.

Schutz, Alfred. 1962c. “Concept and Theory Formation in the Social Sciences.” Pp. 48–66 in *Collected Papers I - The Problem of Social Reality*, edited by M. Natanson. The Hague: Martinus Nijhoff.

Schutz, Alfred. 1962d. “On Multiple Realities.” Pp. 207–59 in *Collected Papers I - The Problem of Social Reality*, edited by M. Natanson. The Hague: Martinus Nijhoff.

Schutz, Alfred. 1962e. “Scheler’s Theory of Intersubjectivity and the General Thesis of the Alter Ego.” Pp. 174–206 in *Collected Papers I - The Problem of Social Reality*, edited by M. Natanson. The Hague: Martinus Nijhoff.

Schutz, Alfred. 1962f. “Symbol, Reality and Society.” Pp. 287–356 in *Collected Papers I - The Problem of Social Reality*, edited by M. Natanson. The Hague: Martinus Nijhoff.

Schutz, Alfred. 1964a. “The Well-Informed Citizen: An Essay on the Social Distribution of Knowledge.” Pp. 120–34 in *Collected Papers II - Studies in Social Theory*, edited by A. Brodersen. The Hague: Martinus Nijhoff.

Schutz, Alfred. 1964b. “Tiresias, or Our Knowledge of Future Events.” Pp. 277–94 in *Collected Papers II - Studies in Social Theory*, edited by A. Broderson. The Hague: Martinus Nijhoff.

Schutz, Alfred. 1967. *The Phenomenology of the Social World*. Evanston IL: Northwestern University Press.

Schutz, Alfred. 1975a. “Some Structures of the Life-World.” Pp. 116–32 in *Collected Papers III - Studies in Phenomenological Philosophy*, edited by I. Schütz. The Hague: Martinus Nijhoff.

Schutz, Alfred. 1975b. “The Problem of Transcendental Intersubjectivity in Husserl.” Pp. 51–91 in *Collected Papers III - Studies in Phenomenological Philosophy*, edited by I. Schutz. The Hague: Martinus Nijhoff.

Schütz, Alfred. 1971a. “Strukturen der Lebenswelt.” Pp. 153–70 in *Gesammelte Aufsätze III - Studien zur phänomenologischen Philisophie*, edited by I. Schütz. Den Haag: Martinus Nijhoff.

Schütz, Alfred. 1971b. “Über die mannigfaltigen Wirklichkeiten.” Pp. 237–98 in *Gesammelte Aufsätze: Das Problem der sozialen Wirklichkeit, Band 1*. Den Haag: Martinus Nijhoff.

Schütz, Alfred. 2004. *Der sinnhafte Aufbau der sozialen Welt. Eine Einleitung in die verstehende Soziologie*. Konstanz: UVK.

Schutz, Alfred, and Thomas Luckmann. 1973. *The Structures of the Life-World*. Evanston IL: Northwestern University Press.

Schütz, Alfred, and Thomas Luckmann. 1975. *Strukturen der Lebenswelt*. Neuwied/Darmstadt: Luchterhand.

Schwartz, Shalom H. 1992. “Cultural Dimensions of Values - Towards an Understanding of National Differences.” *International Journal of Psychology* 27(3–4):540.

Schwartz, Shalom H., and Lilach Sagiv. 1995. “Identifying Culture-Specifics in the Content and Structure of Values.” *Journal of Cross-Cultural Psychology* 26(1):92–116.

Schwingel, Markus. 1993. *Analytik der Kämpfe. Macht und Herrschaft in der Soziologie Bourdieus*. Hamburg: Argument-Verlag.

Schwingel, Markus. 2000. *Pierre Bourdieu zur Einführung*. Hamburg: Junius.

Scoones, Ian, and John Thompson. 1994. *Beyond Farmer First. Rural People’s Knowledge, Agricultural Research and Extension Practice*. London: Intermediate Technology Publications.

Scott, Michael. 2005. “Hybridity, Vacuity, and Blockage: Visions of Chaos from Anthropological Theory, Island Melanesia, and Central Africa.” *Comparative Studies in Society and History* 47(1):190–216.

Sen, Amartya Kumar. 2003. “Development as Capability Expansion.” Pp. 3–16 in *Readings in Human Development*, edited by S. Fukuda-Parr and UNDP. New Delhi/New York: Oxford University Press.

Sen, Amartya Kumar. 2009. *The Idea of Justice*. London: Allen Lane.

Senor, Thomas D. 2014. “Epistemological Problems of Memory.” The Stanford Encyclopedia of Philosophy (Spr 2014) edited by E.N. Zalta. Retrieved June 3, 2014 (http://plato.stanford.edu/archives/spr2014/entries/memory-episprob/).

Shanley, Patricia, and Leda Luz. 2003. “The Impacts of Forest Degradation on Medicinal Plant Use and Implications for Health Care in Eastern Amazonia.” *BioScience* 53(6):573–84.

Shiva, Vandana. 1997. *Biopiracy: The Plunder of the Nature and Knowledge*. Boston, MA: South End Press.

Shiva, Vandana. 2007. “Bioprospecting as Sophisticated Biopiracy.” *Signs: Journal of Women in Culture and Society* 32(2):307–13.

Shope, Robert K. 2002. “Conditions and Analyses of Knowing.” Pp. 25–70 in *The Oxford Handbook of Epistemology*, edited by P.K. Moser. Oxford/New York: Oxford University Press.

Shukla, Shailesh, and James Gardner. 2006. “Local Knowledge in Community-Based Approaches to Medicinal Plant Conservation: Lessons from India.” *Journal of Ethnobiology and Ethnomedicine* 2(1):1–9.

Sian, Katy Pal. 2013. “Losing My Religion: Sikhs in the UK.” *Sikh Formations* 9(1):39–50.

Sillitoe, Paul. 1998a. “Knowing the Land: Soil and Land Resource Evaluation and Indigenous Knowledge.” *Soil Use and Management* 14(4):188–93.

Sillitoe, Paul. 1998b. “The Development of Indigenous Knowledge: A New Applied Anthropology.” *Current Anthropology* 39(2):223–52.

Sillitoe, Paul. 1998c. “What, Know Natives? Local Knowledge in Development.” *Social Anthropology* 2:203–20.

Sillitoe, Paul. 2002a. “Contested Knowledge, Contingent Classification: Animals in the Highlands of Papua New Guinea.” *American Anthropologist* 104(4):1162–71.

Sillitoe, Paul. 2002b. “Participant Observation to Participatory Development.” Pp. 1–23 in *Participating in Development. Approaches to Indigenous Knowledge*, edited by P. Sillitoe, A. Bicker, and J. Pottier. London/New York: Routledge.

Sillitoe, Paul. 2007a. “Anthropologists Only Need Apply: Challenges of Applied Anthropology.” *Journal of the Royal Anthropological Institute* 13(1):147–65.

Sillitoe, Paul. 2007b. *Local Science vs. Global Science: Approaches to Indigenous Knowledge in International Development*. New York: Berghahn.

Sillitoe, Paul. 2010. “Trust in Development: Some Implications of Knowing in Indigenous Knowledge.” *Journal of the Royal Anthropological Institute* 16(1):12–30.

Sillitoe, Paul, and Julian Barr. 2004. “A Decision Model for the Incorporation of Indigenous Knowledge into Development Projects.” Pp. 59–87 in *Investigating Local Knowledge. New Directions, New Approaches*, edited by A. Bicker, P. Sillitoe, and J. Pottier. Aldershot: Ashgate.

Sillitoe, Paul, and Alan Bicker. 2004. “Introduction. Hunting for Theory, Gathering Ideology.” Pp. 1–18 in *Development and Local Knowledge - New approaches to issues in natural resources management, conservation and agriculture*, edited by A. Bicker, P. Sillitoe, and J. Pottier. London/New York: Routledge.

Sillitoe, Paul, and Mariella Marzano. 2009. “Future of Indigenous Knowledge Research in Development.” *Futures* 41(1):13–23.

da Silva, Noelia Ferreira et al. 2019. “Local Knowledge and Conservation Priorities of Medicinal Plants near a Protected Area in Brazil.” *Evidence-Based Complementary and Alternative Medicine* 2019:18.

Simmel, Georg. 1903. “Die Grossstädte und das Geistesleben.” Pp. 185–206 in *Die Grossstadt. Vorträge und Aufsätze zur Städteausstellung*, edited by T. Petermann. Dresden: Jahrbuch der Gehe-Stiftung.

Sinclair, Fergus L., and Daniel H. Walker. 1999. “A Utilitarian Approach to the Incorporation of Local Knowledge in Agroforestry Research and Extension.” Pp. 245–75 in *Agroforestry in sustainable agricultural systems*, edited by L.E. Buck, J.P. Lassoie, and C.M. Fernandes. Boca Raton, FL: CRC Press.

Singh, Ranjay K., Jules Pretty, and Sarah Pilgrim. 2010. “Traditional Knowledge and Biocultural Diversity: Learning from Tribal Communities for Sustainable Development in Northeast India.” *Journal of Environmental Planning and Management* 53(4):511–33.

Siqueira, Clarissa Fernanda de Queiroz et al. 2012. “Levels of Tannins and Flavonoids in Medicinal Plants: Evaluating Bioprospecting Strategies.” *Evidence-Based Complementary and Alternative Medicine* 2012:1–7.

Slikkerveer, L. Jan. 1999. “Ethnoscience, ‘TEK’ and Its Application to Conservation.” Pp. 169–259 in *Cultural and Spiritual Values of Biodiversity*, edited by D.A. Posey. London: Intermediate Technology Publications.

Snodgrass, Jeffrey G. et al. 2008. “Witch Hunts, Herbal Healing, and Discourses of Indigenous Ecodevelopment in North India: Theory and Method in the Anthropology of Environmentality.” *American Anthropologist* 110(3):299–312.

Soldati, Gustavo Taboada, and Ulysses Paulino de Albuquerque. 2012. “Ethnobotany in Intermedical Spaces: The Case of the Fulni-ô Indians (Northeastern Brazil).” *Evidence-Based Complementary and Alternative Medicine* 2012:13.

Sosa, Ernest. 2007. “Experimental Philosophy and Philosophical Intuition.” *Philosophical Studies* 132(1):99–107.

Speich, Daniel. 2009. “Der Blick von Lake Success: Das Entwicklungsdenken der frühen UNO als ‘lokales Wissen.’” Pp. 143–74 in *Entwicklungswelten. Globalgeschichte der Entwicklungszusammenarbeit*, edited by H. Büschel and D. Speich. Frankfurt a.M.: Campus.

van Staden, Cobus. 2015. “Chewing on Japan: Consumption, Diplomacy and Kenny Kunene’s Nyotaimori Scandal.” *Critical Arts* 29(2):107–25.

Stanley, Jason, and Timothy Williamson. 2001. “Knowing How.” *The Journal of Philosophy* 98(8):411–44.

Stanley, Liam. 2012. “The Difference Between an Analytical Framework and a Theoretical Claim: A Reply to Martin Carstensen.” *Political Studies* 60:474–82.

Steedman, Philip. 1991. “On the Relations between Seeing, Interpreting and Knowing.” Pp. 53–62 in *Research and Reflexivity*, edited by F. Steier. Thousand Oaks, CA: Sage.

Steger, Manfred B., and Paul James. 2010. “Introduction: Ideologies of Globalism.” Pp. ix–xxxi in *Globalization and Culture. Volume IV, Ideologies of Globalism*, edited by P. Janes and M.B. Steger. Los Angeles: Sage.

Steiner, Pascale. 2001. “Bourdieu lesen und verstehen.” *Arbeitsblätter des Instituts für Ethnologie der Universität Bern* 19:1–52.

Stepp, John R., and Daniel E. Moerman. 2001. “The Importance of Weeds in Ethnopharmacology.” *Journal of Ethnopharmacology* 75(1):19–23.

Steup, Matthias. 2012. “Epistemology.” The Stanford Encyclopedia of Philosophy (Fall 2012) edited by E.N. Zalta. Retrieved February 4, 2014 (http://plato.stanford.edu/archives/fall2012/entries/epistemology/).

Stevens, Casey, and Norichika Kanie. 2016. “The Transformative Potential of the Sustainable Development Goals (SDGs).” *International Environmental Agreements* 16:393–96.

Stoffle, Brent W., and Richard W. Stoffle. 2007. “At the Sea’s Edge: Elders and Children in the Littorals of Barbados and the Bahamas.” *Human Ecology* 35(5):547–58.

Strassoldo, Raimondo. 1992. “Globalism and Localism: Theoretical Reflections and Some Evidence.” Pp. 35–59 in *Globalisation and Territorial Identities*, edited by Z. Mlinar. Avebury: Aldershot.

Streeten, Paul. 1979. “A Basic-Needs Approach to Economic Development.” *Directions in Economic Development* 73–129.

Suffice, Pauline, Hugo Asselin, Louis Imbeau, Marianne Cheveau, and Pierre Drapeau. 2017. “More Fishers and Fewer Martens Due to Cumulative Effects of Forest Management and Climate Change as Evidenced from Local Knowledge.” *Journal of Ethnobiology and Ethnomedicine* 13(1):51.

Sullivan, LaShandra. 2013. “Identity, Territory and Land Conflict in Brazil.” *Development and Change* 44(2):451–71.

Sutton, John. 2012. “Memory.” The Stanford Encyclopedia of Philosophy (Win 2012) edited by E.N. Zalta. Retrieved December 20, 2013 (http://plato.stanford.edu/archives/win2012/entries/memory/).

Swain, Stacey, Joshua Alexander, and Jonathan M. Weinberg. 2006. “The Instability of Philosophical Intuitions: Running Hot and Cold on Truetemp.” *The 32nd Annual Meeting of the Society for Philosophy and Psychology* 76(1):138–55.

Swyngedouw, Erik. 1997. “Neither Global nor Local: ‘Glocalization’ and the Politics of Scale.” Pp. 137–66 in *Spaces of globalization: Reasserting the power of the local*, edited by K.R. Cox. New York: Guilford.

Swyngedouw, Erik. 2004. “Globalisation or ‘Glocalisation’? Networks, Territories and Rescaling.” *Cambridge Review of International Affairs* 17(1):25–48.

Symons, John. 2008. “Intuition and Philosophical Methodology.” *Axiomathes* 18(1):67–89.

Szeman, Imre. 1997. “Review of Appadurai’s ‘Modernity at Large.’” 1–8.

Tanikella, Leela. 2003. “The Politics of Hybridity Race, Gender, and Nationalism in Trinidad.” *Cultural Dynamics* 15(2):153–81.

Taylor, Peter Charles. 2006. “Cultural Hybridity and Third Space Science Classrooms.” *Cultural Studies of Science Education* 1(1):189–208.

TEDx Talks/Juan Pablo Sarmiento Barletti. 2013. “Taking Indigenous World-Views Seriously [Video Auf Youtube].” Retrieved May 27, 2017 (https://www.youtube.com/watch?v=7pP0tPAEm6E&ab_channel=TEDxTalks).

Tesfahunegn, Gebreyesus Brhane, Lulseged Tamene, and Paul L. G. Vlek. 2011. “A Participatory Soil Quality Assessment in Northern Ethiopia’s Mai-Negus Catchment.” *CATENA* 86(1):1–13.

The Ecologist. 1972. “A Blueprint for Survival.” *The Ecologist* 2(1):1–43.

Thomas, David C. 2008. *Cross-Cultural Management - Essential Concepts*. Los Angeles: Sage.

Thomas, W. H. 2003. “One Last Chance: Tapping Indigenous Knowledge to Produce Sustainable Conservation Policies.” *Futures* 35(9):989–98.

Thrift, Nigel. 2006. “Space.” *Theory, Society and Culture* 23(2–3):139–55.

Thussu, Daya Kishan. 2006. *Media on the Move: Global Flow and Contra-Flow*. London/New York: Routledge.

Tickamyer, Ann R. 2000. “Space Matters! Spatial Inequality in Future Sociology.” *Contemporary Sociology* 29(6):805–13.

Tomasini, Sabrina, and Ida Theilade. 2019. “Local Knowledge of Past and Present Uses of Medicinal Plants in Prespa National Park, Albania.” *Economic Botany* 73(2):217–32.

Torri, Maria C. 2014. “Linking Local Plants with Small Handicraft Enterprises among Indigenous Mapuche Communities: Towards a Combined Approach of Local Development and Enhancement of Ethnobotanical Knowledge?” *Bulletin of Latin American Research* 33(4):419–35.

Trager, Lillian. 1995. “Women Migrants and Rural-Urban Linkages in South-Western Nigeria.” Pp. 269–88 in *The Migration Experience in Africa*, edited by J. Baker and T. Akin Aida. Uppsala: Nordiska Afrikainstitutet.

Traoré, L. et al. 2020. “Indigenous Knowledge of Veterinary Medicinal Plant Use in Cattle Treatment in Southwestern Burkina Faso (West Africa).” *South African Journal of Botany* 128:189–99.

Trompenaars, Alfons, and Charles Hampden-Turner. 1993. *Riding the Waves of Culture: Understanding Cultural Diversity in Business*. London: Nicholas Brealey Publishing.

Trubek, David M., M. Patrick Cottrell, and Mark Nance. 2005. “‘Soft Law’, ‘Hard Law’, and European Integration: Toward a Theory of Hybridity.” *Legal Studies Research Paper* 1002:1–42.

Truncellito, David. 2007. “Epistemology.” Internet Encyclopedia of Philosophy edited by J. Fieser and B. Dowden. Retrieved December 17, 2013 (http://www.iep.utm.edu/epistemo/).

Tsing, Anna Lowenhaupt. 1994. “From the Margins.” *Cultural Anthropology* 9(3):279–97.

Tsoukas, Haridimos. 2011. “How Should We Understand Tacit Knowledge? A Phenomenological View.” Pp. 453–76 in *Handbook of Organizational Learning and Knowledge Management*, edited by M. Easterby-Smith and M.A. Lyles. Chichester: Wiley.

Tully, Claus J. 2009. “Multilokalität und Vernetzung: Beiträge zur technikbasierten Gestaltung jugendlicher Sozialräume.” Weinheim: Juventa.

Tumenjargal, Sukh et al. 2020. “Variability and Change of Climate Extremes from Indigenous Herder Knowledge and at Meteorological Stations across Central Mongolia.” *Frontiers of Earth Science* 1–12.

Tyler, N. J. C. et al. 2007. “Saami Reindeer Pastoralism under Climate Change: Applying a Generalized Framework for Vulnerability Studies to a Sub-Arctic Social-Ecological System.” *Global Environmental Change-Human and Policy Dimensions* 17(2):191–206.

UNCSD. 2012. *The Future We Want: Rio+20: United Nations Conference on Sustainable Development, 20-22 June 2012, Rio de Janeiro, Brazil*. Bangkok: Amarin Printing and Publishing.

UNCTAD. 2007. *BioTrade Principles and Criteria*. New York/Genf: United Nations Publications.

United Nations. 1992. *Convention on Biological Diversity, Text and Annexes*. Geneva: Secretariat of the Convention on Biological Diversity. Retrieved (http://www.cbd.int/doc/legal/cbd-en.pdf).

United Nations. 2007. *United Nations Declaration on the Rights of Indigenous Peoples*. New York: UN General Assembly.

United Nations. 2012. “Road to Rio - ‘A Common Future’ to ‘The Future We Want.’” Resolutions. Retrieved July 26, 2018 (https://rio20.un.org/resolutions-more).

Uusküla, Mari. 2009. “Basic Colour Terms in Finno-Ugric and Slavonic Languages: Myths and Facts.” Tartu University.

Vandebroek, Ina et al. 2004. “Use of Medicinal Plants and Pharmaceuticals by Indigenous Communities in the Bolivian Andes and Amazon.” *Bulletin of the World Health Organization* 82(4):243–50.

Vandebroek, Ina. 2010. “The Dual Intracultural and Intercultural Relationship between Medicinal Plant Knowledge and Consensus.” *Economic Botany* 64(4):303–17.

Vandebroek, Ina, and Michael J. Balick. 2012. “Globalization and Loss of Plant Knowledge: Challenging the Paradigm.” *Plos One* 7(5).

Vandebroek, Ina, and Daniel E. Moerman. 2015. “The Anthropology of Ethnopharmacology.” Pp. 17–28 in *Ethnopharmacology*, edited by M. Heinrich and A.K. Jäger. Oxford: John Wiley & Sons.

Vandebroek, Ina, Victoria Reyes-García, Ulysses Paulino de Albuquerque, Rainer W. Bussmann, and Andrea Pieroni. 2011. “Local Knowledge: Who Cares?” *Journal of Ethnobiology and Ethnomedicine* 7:1–7.

Vandebroek, Ina, and Sabino Sanca. 2006. “Food Medicines in the Bolivian Andes (Apillapampa, Cochabamba Department).” Pp. 273–95 in *Eating and Healing: Traditional Food as Medicine*, edited by A. Pieroni and L.L. Price. Boca Raton/London/New York: CRC Press.

Vermeulen, Sonja, and Lorenzo Cotula. 2010. “Over the Heads of Local People: Consultation, Consent, and Recompense in Large-Scale Land Deals for Biofuels Projects in Africa.” *The Journal of Peasant Studies* 37(4):899–916.

Vermeylen, Saskia. 2007. “Contextualizing ‘Fair’ and ‘Equitable’: The San’s Reflections on the Hoodia Benefit-Sharing Agreement.” *Local Environment* 12(4):423–36.

Vermeylen, Saskia, George Martin, and Roland Clift. 2008. “Intellectual Property Rights Systems and the Assemblage of Local Knowledge Systems.” *International Journal of Cultural Property* 15(02):201–21.

Vickers, John. 2013. “The Problem of Induction.” The Stanford Encyclopedia of Philosophy (Spr 2013) edited by E.N. Zalta. Retrieved March 19, 2013 (http://plato.stanford.edu/archives/spr2013/entries/induction-problem/).

Vierros, Marjo, and Yoshitaka Ota. 2019. “Integration of Traditional Knowledge in Policy for Climate Adaptation, Displacement and Migration in the Pacific.” Pp. 305–16 in *Predicting Future Oceans*, edited by A.M. Cisneros-Montemayor, W.W.L. Cheung, and Y. Ota. Amsterdam: Elsevier.

Vigiak, Olga, Barrack O. Okoba, Geert Sterk, and Leo Stroosnijder. 2005. “Water Erosion Assessment Using Farmers’ Indicators in the West Usambara Mountains, Tanzania.” *CATENA* 64(2–3):307–20.

Vizureanu, Viorel. 2013. “Some Remarks Concerning the Concept of Glocalization.” *Public Reason* 5(1):69–86.

Vogl, Christian R., L. Kilcher, and H. Schmidt. 2005. “Are Standards and Regulations of Organic Farming Moving Away from Small Farmers’ Knowledge?” *Journal of Sustainable Agriculture* 26(1):5–26.

Vogt, Evan, and Ethel Albert. 1966. *People of Rimrock - a Study of Value of Five Cultures*. Cambridge, MA: Harvard University Press.

Vojnovic, Igor. 1995. “Intergenerational and Intragenerational Equity Requirements for Sustainability.” *Environmental Conservation* 22(3):223–28.

Vossoughi, Shirin, and Kris D. Gutiérrez. 2010. “Studying Movement, Hybridity, and Change: Toward a Multi-Sited Sensibility for Research on Learning across Contexts and Borders.” *National Society for the Study of Education* 113(2):603–32.

de Vries, Bert J. M., and Arthur C. Petersen. 2009. “Conceptualizing Sustainable Development: An Assessment Methodology Connecting Values, Knowledge, Worldviews and Scenarios.” *Ecological Economics* 68(4):1006–19.

Vuori, Hannu. 1982. “The World Health Organisation and Traditional Medicine.” *Community Medicine* 4:129–37.

Waas, Tom et al. 2014. “Sustainability Assessment and Indicators: Tools in a Decision-Making Strategy for Sustainable Development.” *Sustainability* 6(9):5512–34.

Waas, Tom, Jean Hugé, Aviel Verbruggen, and Tarah Wright. 2011. “Sustainable Development: A Bird’s Eye View.” *Sustainability* 3(10):1637–61.

Wackernagel, Mathis, and William Rees. 1996. *Our Ecological Footprint: Reducing Human Impact on the Earth*. Gabriola Island: New Society Publishers.

Wacquant, Loïc J. D. 1992. “Toward a Social Praxeology: The Structure and Logic of Bourdieu’s Sociology.” Pp. 1–59 in *An Invitation to Reflexive Sociology*, edited by P. Bourdieu and L.J.D. Wacquant. Chicago: University of Chicago Press.

Waitz, Theodor, and J. Frederick Collingwood. 1863. *Introduction to Anthropology*. London: Longman.

Waldenfels, Bernhard. 1985. *In den Netzen der Lebenswelt*. Frankfurt am Main: Suhrkamp.

Walshe, Rory A., and Patrick D. Nunn. 2012. “Integration of Indigenous Knowledge and Disaster Risk Reduction: A Case Study from Baie Martelli, Pentecost Island, Vanuatu.” *International Journal of Disaster Risk Science* 3(4):185–94.

Warde, Paul. 2011. “The Invention of Sustainability.” *Modern Intellectual History* 8(1):153–70.

Warf, Barney, and Santa Arias. 2009a. “Introduction: The Reinsertion of Space into the Social Sciences and Humanities.” Pp. 1–10 in *The Spatial Turn. Interdisciplinary Perspectives*, edited by B. Warf and S. Arias. London/New York: Routledge.

Warf, Barney, and Santa Arias. 2009b. *The Spatial Turn: Interdisciplinary Perspectives*. London/New York: Routledge.

Warren, D. Michael, L. Jan Slikkerveer, and David Brokensha. 1995. *The Cultural Dimension of Development: Indigenous Knowledge Systems*. London: Intermediate Technology Publications.

Watson, Alan, Lilian Alessa, and Brian Glaspell. 2003. “The Relationship between Traditional Ecological Knowledge, Evolving Cultures, and Wilderness Protection in the Circumpolar North.” *Conservation Ecology* 8(1).

Watt, Paul, Gareth Millington, and Rupa Huq. 2014. “East London Mobilities: The ‘Cockney Diaspora’ and the Remaking of the Essex Ethnoscape.” Pp. 121–44 in *Mobilities and Neighbourhood Belonging in Cities and Suburbs*, edited by P. Watt and P. Smets. Hampshire, UK/New York: Palgrave Macmillan.

WCED. 1987. *Our Common Future*. Oxford: Oxford University Press.

Weber, Max. 1978. *Economy and Society: An Outline of Interpretative Sociology*. Berkeley: University of California Press.

Weinberg, Darin. 2009. “Social Constructionism.” Pp. 281–99 in *The New Blackwell Companion to Social Theory*, edited by B.S. Turner. Chichester, UK/Malden, MA: Wiley-Blackwell.

Weinberg, Jonathan M., Shaun Nichols, and Stephen Stich. 2001. “Normativity and Epistemic Intuitions.” *Philosophical Topics* 29(1&2):429–60.

Werbner, Pnina. 2001. “The Limits of Cultural Hybridity: On Ritual Monsters, Poetic Licence and Contested Postcolonial Purifications.” *Journal of the Royal Anthropological Institute* 7(1):133–52.

Werner, Oswald, G. Mark Schoepfle, and Julie Ahern. 1987. *Systematic Fieldwork*. Newbury Park, CA: Sage Publications.

WHO. 2003. *WHO Guidelines on Good Agricultural and Collection Practices (GACP) for Medicinal Plants*. Geneva: World Health Organization.

Wilderer, Peter A., and Michael von Hauff. 2014. “Nachhaltige Entwicklung durch Resilienz-Steigerung.” Pp. 17–40 in *Nachhaltige Entwicklung: aus der Perspektive verschiedener Disziplinen (Symposium im Frühjahr 2013 an der Technischen Universität Kaiserslautern)*, edited by M. von Hauff. Baden-Baden: Nomos.

Williams, Bronwyn T. 2003. “Speak for Yourself? Power and Hybridity in the Cross-Cultural Classroom.” *College Composition and Communication* 586–609.

Willis, Jerry W., and Muktha Jost. 2007. *Foundations of Qualitative Research: Interpretive and Critical Approaches*. Thousand Oaks, CA: Sage.

Willis, Paul E. 1977. *Learning to Labor: How Working Class Kids Get Working Class Jobs*. New York: Columbia University Press.

Wilms, Heinrich-Josef. 2005. “Leben mit der Überschwemmung im ländlichen Bangladesch. Die Vulnerabilität der betroffenen Menschen und Perspektiven für eine angepasste Entwicklung.” Rheinische Friedrich-Wilhelms-Universität Bonn, Bonn.

Wilson, Geoff A. et al. 2017. “Social Memory and the Resilience of Communities Affected by Land Degradation.” *Land Degradation & Development* 28(2):383–400.

Wimmer, Andreas, and Nina Glick Schiller. 2002. “Methodological Nationalism and beyond: Nation-State Building, Migration and the Social Sciences.” *Global Networks* 2(4):301–34.

Wippel, Stefan. 2013. “Conceptual Considerations of ‘Space’ and ‘Region’: Political, Economic and Social Dynamics of Region-Building.” Pp. 21–42 in *Regionalizing Oman. Political, Economic and Social Dynamics*, edited by S. Wippel. Dordrecht: Springer.

Withers, Charles W. J. 2009. “Place and the ‘Spatial Turn’ in Geography and in History.” *Journal of the History of Ideas* 70(4):637–58.

Witkowski, Stanley R. 1977. “Kinship.” *American Behavioral Scientist* 20(5):657–68.

Witkowski, Stanley R., and Cecil H. Brown. 1977. “An Explanation of Color Nomenclature Universals.” *American Anthropologist* 79(1):50–57.

Wonneberger, Astrid. 2011. “The End of Community? Concepts of Locality and Community before and after the Spatial Turn in Anthropology: A Case Study of the Dublin Docklands.” *Localities* 1:125–58.

Wood, William B. 1994. “Forced Migration: Local Conflicts and International Dilemmas.” *Annals of the Association of American Geographers* 84(4):607–34.

Woytek, R., and N. Gorjestani. 1998. *Indigenous Knowledge for Development - A Framework for Action*. New York: World Bank.

Wylie, Sara, and Len Albright. 2014. “WellWatch: Reflections on Designing Digital Media for Multi-Sited Para-Ethnography.” *Journal of Political Ecology* 21(321):116–26.

Xia, Jingfeng. 2011. “An Anthropological Emic-Etic Perspective on Open Access Practices.” *Journal of Documentation* 67(1):75–94.

Xu, Jianchu et al. 2005. “Integrating Sacred Knowledge for Conservation: Cultures and Landscapes in Southwest China.” *Ecology and Society* 10(2):7.

Yazdiha, Haj. 2010. “Conceptualizing Hybridity: Deconstructing Boundaries through the Hybrid.” *Formations* 1(1):31–38.

Yin, Robert K. 2015. *Qualitative Research from Start to Finish*. New York: Guilford Publications.

Yöney, Ahmet, José M. Prieto, Andreas Lardos, and Michael Heinrich. 2010. “Ethnopharmacy of Turkish-Speaking Cypriots in Greater London.” *Phytotherapy Research: An International Journal Devoted to Pharmacological and Toxicological Evaluation of Natural Product Derivatives* 24(5):731–40.

Young, James O. 2013. “The Coherence Theory of Truth.” The Stanford Encyclopedia of Philosophy (Sum 2013) edited by E.N. Zalta. Retrieved September 9, 2013 (http://plato.stanford.edu/archives/sum2013/entries/truth-coherence/).

Young, Robert J. C. 1995a. *Colonial Desire: Hybridity in Theory, Culture, and Race*. London/New York: Routledge.

Young, Robert J. C. 1995b. “Hybridity and Diaspora.” Pp. 1–26 in *Colonial Desire: Hybridity in Theory, Culture, and Race*, edited by R.J.C. Young. London/New York: Routledge.

Young, Robert J. C. 1995c. “White Power, White Desire: The Political Economy of Miscegenation.” Pp. 133–50 in *Colonial Desire: Hybridity in Theory, Culture, and Race*, edited by R.J.C. Young. London/New York: Routledge.

Zaner, Richard M. 1961. “Theory of Intersubjectivity: Alfred Schütz.” *Social Research* 28(1):71–93.

van Zeijl-Rozema, Annemarie, Ron Cörvers, René Kemp, and Pim Martens. 2008. “Governance for Sustainable Development: A Framework.” *Sustainable Development* 16(6):410–21.

Zhao, Shanyang. 2004. “Consociated Contemporaries as an Emergent Realm of the Lifeworld: Extending Schutz’s Phenomenological Analysis to Cyberspace.” *Human Studies* 27:91–105.

Zoomers, Annelies. 2010. “Globalisation and the Foreignisation of Space: Seven Processes Driving the Current Global Land Grab.” *The Journal of Peasant Studies* 37(2):429–47.