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Ability and authority?

Studies on the constructedness and expansion of expertise in the contemporary public sphere

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DOCTORAL DISSERTATION

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ABSTRACT

This article-based dissertation investigates the constructedness and expansion of expertise in the contemporary public sphere. The dissertation is motivated by the phenomenon of salient public perplexity and competing claims to expertise in the contemporary public sphere around science-related public issues where expertise has relevance to the practice and actions of people. As this phenomenon has been notably salient regarding healthy eating as a public issue, empirically the dissertation especially deals with the constructedness of public expertise around this issue. Theoretically and methodologically, it provides new insights on the relationally constructed nature of expertise in the contemporary public sphere and how to investigate it. The dissertation especially makes explicit the ways in which new types of social actors claiming expertise, as well as established, credentialed experts, construct their authority in the contemporary public sphere in the context of issues where expertise touches upon everyday life. It also provides new perspective on the role of experts and the way in which journalism and public engagement with science activities, as cultural practices that centrally mediate expertise in the contemporary public sphere, come to construct public expertise.

The theoretical framework of the dissertation is grounded in the relational perspective on expertise as developed within a constellation of social studies of science literature. From this perspective, expertise and its recognition are approached as constituted by, and constructed in, social relations. In the empirical studies of the dissertation, concepts from the relational literature on expertise are put to analytical use. Furthermore, some novel concepts and typologies are developed that can be further utilised in the empirical study of public expertise. Methodological relativism, as developed within the sociology of scientific knowledge, methodologically underpins the symmetrical approach to investigating public expertise in the dissertation. The materials collected and analysed in the four articles consist of observational materials and a questionnaire collected from a public engagement with science event, blog posts by popular nutrition counselling bloggers and academic experts, and in-depth interviews with journalists and visible experts on healthy eating.

The four original, empirical articles analyse and illuminate the constructedness and expansion of expertise in the contemporary public sphere by focusing on the different, central arenas and social actors involved in claiming and mediating expertise in public. Article I provides an analysis of interactive framings and their negotiation in an informal public engagement with science event. It contributes to the understanding of the interactional dynamics and how these are negotiated between the expert panellists, lay people and event facilitators in these types of public events that commonly aim to dissolve epistemic hierarchy and authority. Article II investigates the rhetorical strategies and cultural resources drawn upon by six popular diet

bloggers in establishing credibility both for their claims and for themselves as providers of dietary advice, which are also compared to those utilised by institutional experts contributing to the blog of the National Institute of Health and Welfare. The findings of Article II especially illuminate the dialectical constructedness of public expertise in the case of healthy eating, which involves much struggle over expert credibility and authority in contemporary society. It also provides insights into how popular diet bloggers establish public authority on dietary issues. Article III investigates journalists' accounts on how they choose expert sources when covering healthy eating and how they judge the expertise of these sources. It identifies different repertoires, in which each journalistic judgement of dietetic expertise is interpreted and constructed in different terms. The findings of Article III illuminate the variety of the kinds of considerations that constitute journalists' judgement of expertise, and also how these exceed the issue of recognising and considering the sources' technical expertise. Article IV analyses visible scientists and scientifically trained practitioners' interview accounts of their role as public experts on healthy eating. It elaborates their different ethoses and boundary-work through which they come to construct different role identities as public experts. It identifies three different public expert role identities based on the analysis and highlights the enacted nature of these role identities, which reflect different views of expertise and of acting as an expert in the science-public boundary.

The concluding chapter discusses the constructedness and expansion of expertise in the contemporary public sphere, based on the findings of the four empirical articles, on a more theoretical plane. In doing so, the concluding discussion also critically engages with Collins and Evans' normative theory of expertise in social studies of science by further theoretically discussing how expertise in the contemporary public sphere is centrally tied to the establishment and recognition of expert authority, and not just to displaying and assessing technical expertise. It is argued that central to how expertise in the contemporary public sphere is relationally constructed is how knowledge drawn upon and advice provided are made tangible and considered to bear relevance in relation to the everyday experience and considerations of the intended public. The ways in which the related issues of individualisation and consumerism, as well as rationality and interests, relate to the constructedness of expertise in the contemporary public sphere are also highlighted. However, it is emphasised in the concluding discussion, based on the empirical findings, that there is not just one way, but a variety of ways, in which social actors actively establish expert authority by navigating these socio-cultural dynamics and positioning themselves as public experts.

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Helsinki, October 2019

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LIST OF ORIGINAL PUBLICATIONS

I Saikkonen, Sampsa & Väliverronen, Esa (2014). Framing engagement: expert-youth interaction in a PES event. *Journal of Science Communication,* 13(2).

II Huovila, Janne & Saikkonen, Sampsa (2016). Establishing credibility, constructing understanding: The epistemic struggle over healthy eating in the Finnish dietetic blogosphere. *Health: An Interdisciplinary Journal for the Social Study of Health, Illness and Medicine,* 20(4).

III Saikkonen, Sampsa (2017). Interpreting expertise: Finnish journalists' accounts on journalistic judgement of expertise on healthy eating. *Journalism,* E-pub ahead of print (OnlineFirst), DOI: 10.1177/1464884917708865.

IV Saikkonen, Sampsa (manuscript in submission). Navigating public expertise: Finnish scientists and scientifically trained practitioners' role identity construction as public experts on healthy eating.

The publications are referred to in the text by their roman numerals.

1 INTRODUCTION

"There is at least one problem: such a wide variety of experts from different fields have declared themselves as experts that it has not been possible to figure out what is the truth. The experts are often in a complete disagreement with each other." Paula Salovaara, Managing Editor, Helsingin Sanomat newspaper, 17.12.2011.

One of the characteristic features of many science-related debates in the contemporary public sphere has to do with the issue of who actually can, and should, provide the public with authoritative advice and what to make of claims to expertise. As the above quotation – extracted from an editorial note on how to deal with the issue of expertise during a simultaneous heightened debate on low-carbohydrate diets and dietary fats in Finland – illustrates, this issue sometimes even becomes explicitly part of the public discussion about the science-related issue at hand. That such issues concerning public authority emerge in relation to expertise in public discourse, and can even become highly pervasive, is intriguing. It can also be considered as somewhat puzzling in the sense that what constitutes authoritative, trustworthy advice on science-related public issues should, after all, be relatively straightforward from a commonsense perspective as "an obvious answer is that authority flows from expertise" (Shapin, 2004: 45), that is, from the technical ability to act and do things based on deep domain-specific understanding. This is also what has crucially motivated the writing of this dissertation, which is an inquiry focusing from various perspectives on *how expertise is constructed, negotiated and judged, and in what ways this relates to the expansion of expertise, in the contemporary public sphere*.

Of course public perplexity and disagreement about expertise do not pervade equally, if at all, all areas of social life, especially if expertise is mostly relevant in relation to fundamental esoteric scientific issues, such as "whether twice two equals four, or whether DNA is the genetic substance" (Shapin, 2004: 47). However, when these do emerge it is typically with respect to issues in which the practical and moral aspect of "what we should do" is characteristically involved (Ibid.: 47). Therefore, all of the empirical studies (Articles I–IV) in this dissertation were conducted with the idea that such an aspect is involved. Since, especially around healthy eating, the issue of expertise has recently been salient and continuously debated in the public sphere in Finland, and in many other countries, and is fundamentally intertwined with the issue of what to do (e.g. Shapin, 2003; 2007a), the empirics especially deal with this area (Articles II–IV). The findings and discussion of this dissertation, then, cannot be understood to provide any generalised theory about expertise in late-modern public life. However, they illuminate and contribute to the understanding of some of the socio-cultural dynamics of expertise and public authority, concerning empirically especially public dietary expertise. Theoretically and methodologically, this dissertation also advances our understanding of the relationally constructed nature of expertise in the contemporary public sphere and how to investigate this. As this is an article-based dissertation by publication, I find it important to note that although the central empirical work done for the dissertation is presented in a summarised form in the main part of the text of this thesis, for a more comprehensive view of the components of this work, and the detailed arguments involved in them, it is necessary to take a look at the actual research articles that essentially constitute the core of the dissertation and the findings made.

1.1 BACKGROUND OF THE STUDY AND CONTRIBUTIONS OF SUBSTUDIES

Notably, an influential normative approach in social studies on expertise (Collins & Evans, 2007; Collins & Evans, 2017) tends to point out the interrelatedness of the type of public discourse and sentiment about expertise conveyed in the beginning quote above to the decline of public trust in science and scientific experts, and argues that both scholars and citizens should, therefore, focus more on who the experts actually are, and how to recognise them, in terms of what kind of abilities the social actors really possess. Although it is empirically debatable whether, and to what extent, public trust in science has declined in recent decades (see e.g. Smith & Son, 2013; Castell et al., 2014), and would, therefore, influence public recognition and conceptions of expertise to begin with, modern societies and citizens are certainly very much dependent on and exposed to expertise, while expertise is, at the same time, widely contested and negotiated publicly (Nowotny, 2000; Turner, 2003; Boyce, 2006). The general rise in the education level of the population in many western democracies, such as in Finland, and the fact that it has become easier to communicate and take part in discussions in the public sphere due the pervasiveness of the internet and social media, conceivably affords us the opportunity to scrutinise and negotiate expert authority and propositions. As science exerts considerable authority in contemporary societies, especially the authority of institutionalised forms of scientific expert advice and expert “establishments” have been subject to contestation, for example in the cases of vaccines (e.g. Blume, 2006) and healthy eating (e.g. Gunnarson & Elam, 2012; Jauho, 2016), by social movements as well as ordinary laypeople, when institutional expertise has been perceived to be imposed on the public without sufficient scientific self-criticism, or to exclude other types of knowledge.

One-way, marketing oriented public communication that aims to “sell science” to the public has also, arguably, had an impact on the perceived public authority of science and scientific experts in the public sphere and society in general (e.g. Felt et al., 2007). Emphasising the importance of dialogue between scientists and laypeople has thus been a growing trend in the public communication of science, although this type of approach has not been without its practical difficulties (see Powell & Colin, 2008; Kurath & Gisler, 2009). Furthermore, the shift from measuring public understanding of science to emphasising dialogue and public engagement with science (PES), and the related policy shift to more generally democratise science and expertise, have also been paradigmatic and consciously supported by social scientists, especially by Science and Technology Studies (hereafter STS) scholars, as well as by policy-makers. The aim has been a broader, inclusive use of knowledge and expertise in society, which has, however, involved tensions with scientific and other professionalised forms of expertise (Nowotny, 2003; Maasen & Weingart, 2005; Lövbrand, Pielke & Beck, 2010). The theoretical repercussions of such tensions have also been widely debated by STS and the public communications of science scholars (Collins & Evans, 2002; Wynne, 2003; Jasanoff, 2003; Rip, 2003).

Moreover, for example, organised PES activities also involve constitutive issues having to do with power relations (e.g. Davies, 2013). Such issues pertain to tensions over public authority and the propositional rights of the participants, and characteristically emerge at the interactional level, as the fitting together of different perspectives and ways of knowing is usually difficult. It is common to maintain a certain hierarchy and to favour expert subject positions within such activities, as well as to colonise lay positions by expert speakers (Kerr, Cunningham-Burley & Tutton, 2007). Also, scientists often refrain from wider expert engagement and maintain a narrow role by falling back on their technical expertise in the face of difficult ethical or political questions, which necessitates considerations and efforts from facilitators of such events (Radstake et al., 2009). Article I investigates such aspects relating to public expertise in public engagement events by providing an analysis of interaction between expert speakers, young people as lay participants and event facilitators in an informal, facilitated PES event. It contributes specifically to the understanding of the interactional dynamics and negotiation of authority in these types of public events.

However, in addition to such more active, systematic attempts to expand and democratise expertise at the levels of policy and practice, the spectrum of types of social actors utilised as experts has also expanded in the media, and increasingly, for example, sources with practical experience on the issue at hand are attributed with expertise by journalists (Albæk, 2011). For example "field experts", such as dietitians, nutrition therapists and personal trainers, are increasingly endowed with epistemic authority and consulted for expert advice in the contemporary media and public sphere (Setälä & Väliverronen, 2014). Moreover, especially in many areas pertaining to the everyday life of people, such as in the case of healthy eating, there is also a variety of lay and semi-professional social actors who lack institutional expert status or credentials actively aiming to establish themselves as public authorities for example through popular literature (Shapin, 2007a) or the blogosphere (Article II). As Article II in this dissertation demonstrates, the ways in which such authors establish credibility for their claims and public authority for themselves builds characteristically on argumentation grounded in personal experience and personal measurements to establish a connection to commonsense thinking about healthy eating, and to construct the authors as relatable characters, rather than on displaying technical expertise and knowledge. Furthermore, it is also made explicit in Article II that these credibility strategies notably work in dialectical opposition to the kind of argumentation of scientific experts that builds on an understanding of probabilities and population-based causalities to compete for epistemic authority over public dietary understanding. Article II, then, contributes especially to the understanding of the rhetorical and dialectical constructedness of public expertise in the case of healthy eating, which involves considerable struggle over expert authority and credibility in the contemporary public sphere, and provides insights into what constitutes the emergence and proliferation of new types of actors as public authorities on dietary issues.

The proliferation of new types of agents claiming to be and passing as epistemic authorities also has effects on the status and authority of scientists and scientifically trained professionals as public experts, that is, when they provide advice and commentary on practical problems (Peters, 2008). It is important to note that science as a social institution, and scientific experts as agents representing this institution, have also become more dependent on public legitimation due to macrosocial structural changes related to the institutional interlocking of science and the media as the media has begun to have a more pervasive influence in society (Weingart, 1998; Rödder & Schäfer, 2010). However, the contemporary public sphere, on a more cultural level, has also become an important arena where struggles over the symbolic legitimacy of expert authority take place in modern societies, and where scientific experts have to increasingly compete over the public recognition of expertise as well as public authority and credibility (Arnoldi, 2007; Shapin, 2007a; Penders, 2014). This exerts pressure on scientific experts to consider how to construct and communicate the content of their advice to the public in order for it to be influential. In addition, this competitive cultural and communicative environment also inevitably influences considerations of how and what it is to be an expert authority in the public sphere. Article IV focuses on this based on interviews with scientists and scientifically trained professionals (e.g. dietitians) who are experienced in acting as public experts on dietary issues. It analyses how these experts perceive and come to construct different public expert role identities, by focusing especially on their ethos and identity- and boundary-work through which they construct these role identities. This study contributes to a better understanding of the multiplicity of expert role identities and what constitutes expertise in the contemporary public sphere, as well as the normative orientation of these enacted role identities, which reflect different views of expertise in society.

Arguably, new types of mechanisms for gaining and attributing authority have also emerged – to the extent that the term “media-derived authority” has been coined (Herbst, 2003; cf. Weber´s [1921–22]1978: 212–301 classical typology of legitimate authority). In the context of public expertise, this means that it has become easier to be recognised as an expert authority by gaining public visibility, and especially by accommodating to the ways the media operates. The judgement of expertise itself has, then, become more crucial in order to consider the credibility and authoritativeness of claims made from expert subject positions. Especially journalists, who commonly use expert sources in order to increase objectivity, add credibility and provide facts necessarily face the task of making continuous judgements about expertise. However, research investigating the role and use of expert sources in the media, and especially how journalists assess and judge the expertise of sources, is scarce, although some studies do exist (e.g. Boyce, 2006). Article III contributes to this gap in understanding journalistic judgement of expertise in the contemporary public sphere by investigating the kinds of considerations that constitute journalists’ judgement in attributing an authoritative, expert voice to sources in the area of diet, which arguably centrally influences the social shaping and public recognition of expertise in regard to healthy eating. It also elucidates the value and relevance of other types of knowledge and understanding in relation to scientific knowledge when considering expert sources, especially when dealing with health issues.

2 THEORY AND METHODOLOGY

This chapter centres on theory in the social study of expertise by focusing especially on those aspects in the existing literature that bear relevance in the context of this work. The theoretical framework, central concepts and analytical tools that I put to use in this dissertation to investigate the constructedness of public expertise derive from relational theory in the social study of expertise, to which this dissertation theoretically contributes, and these are therefore introduced hand-in-hand with elaborating this approach. Methodological relativism, as formulated in the sociology of scientific knowledge (hereafter SSK), is also introduced as it grounds the way in which public expertise is methodologically approached in this thesis.

2.1 THE SOCIAL STUDY OF EXPERTISE

In psychological and educational literature, the standard approach to expertise is commonly one of skill acquisition, that is, what does it take for an (adult) individual to become an expert in terms of skill development through practice, and what does this tell us about the nature of expertise and especially how it is acquired (e.g. Dreyfus, 2004). This type of approach to expertise is constitutively both individualist and realist by nature. Expertise is investigated from this perspective as something that an individual comes to possess as a skill through concentrated practice, and it is important to understand how this happens and what stages it involves.

Social studies of science and expertise literature, introduced and surveyed in this chapter, are characteristically more collectivist by nature in that communities and social and cultural processes are viewed as constitutive of expertise and the emergence of expert social actors. However, there is no single, unified understanding of expertise and experts in this literature, but rather the different theoretical approaches that do exist vary from normative-realist to more relational approaches. Therefore, it is crucial to survey these different approaches that centrally touch upon the socio-cultural and societal aspects of expertise to provide an understanding of how expertise is approached in them, and to position this dissertation theoretically and epistemologically in the field of the social study of expertise. Although the theory and methodology in this dissertation are grounded in the relational perspective, the normative-realist approach is introduced and surveyed in this chapter as it aims to provide a theoretical counterpoint to the relational approach to expertise. This dissertation also critically engages with the normative-realist approach in discussing the constructedness and expansion of expertise in the contemporary public sphere. The normative-realist perspective involves a distinctive understanding in which the essence of expertise is viewed in terms of the technical ability possessed by social actors, and through which such matters as recognition and judgement of expertise are also viewed, as explained further below.

2.2 THE REALIST PERSPECTIVE: THE NORMATIVE THEORY OF EXPERTISE

An influential realist perspective in the social study of expertise emerges from the work of STS scholars Harry Collins and Robert Evans (comprehensively presented in e.g. Collins & Evans, 2007) and their colleagues. Based on their investigations, they outline a vast, programmatic approach to the social study of expertise which is neither possible nor purposeful to introduce here in full detail, but which has central aspects that are important to introduce briefly as their "normative theory of expertise" saliently touches upon such social dimensions as recognition and judgement of expertise, in both specialist and public settings. Their approach fundamentally aims to overcome the issue that expertise, and reliance on experts, should have to do with expert authority and credibility by offering an alternative to this based on their theory. To be clear, it is important to note here that while the theory and conceptual tools of the normative theory of expertise are not utilised in this dissertation to investigate expertise, an elaboration of these is crucial to provide an understanding and to discuss how Collins and Evans' normative theory aims to provide this alternative, and to be able to situate relational theorising about expertise with respect to this.

Collins and Evans (e.g. 2002; 2007) describe their theory as normative because one of the central aims of their theory is to provide *a priori* guidance on how to recognise, consider and make judgements concerning expertise based on their "periodic table of expertises" which is an empirically grounded typology of the kinds of expert ability that social actors can come to possess by gaining experience through immersion into expert communities. Therefore, notably, the approach of Collins and Evans rather explicitly indicates that expertise is fundamentally not something that can be acquired merely through theoretical immersion, by reading and learning a lot about things, but what importantly constitutes expertise is tacit knowledge and experience gained through socialisation to expert communities.

The theory notes that there is ubiquitous expertise, such as mastery of language and societal norms, which is globally possessed by people because such abilities are central to life in society. Of central interest in the approach are, however, forms of specialist expertise. With respect to specialist expertise, the typology of expertise makes explicit that the ability to fully contribute to a domain is a form of specialist expertise, contributory expertise, which is acquired through socialisation to both the practice and language of the community. However, the theory also importantly points out that linguistic socialisation, in particular, is crucial for developing a distinct kind of specialist expertise, interactional expertise, which involves the ability to sufficiently interact with other competent, expert actors in the specific domain in question (Collins & Evans, 2007; Collins, 2011).[1] Kinds of meta-expertise – expertise about expertise – are also explicated as a category of expertise, which also involves more ubiquitous, but also specialist forms of meta-expertise, of which especially referred expertise is explicated as a kind of specialist meta-expertise where a social actor, for example, a manager in a project, has gained expertise in one field and is able to utilise this expertise in another field (Collins & Evans, 2007: 64–67). In addition "sociological discrimination" is also later introduced in the framework of normative theory of expertise as a kind of meta-expertise, a specialist social expertise that can be used to make judgements concerning experts and expert propositions as it is "expertise in respect of social behaviour in the sciences that can be transmuted into technical judgments" (Collins & Weinel, 2011: 411).

As the short summary of the typologisation of expertise in the theory above makes explicit, expertise is treated in this approach as socially constituted but strictly in terms of kinds of actual *technical* abilities and competence that are involved in different types of expertise. Notably, the rationale for aiming to treat and typologise expertise in these terms is fundamentally linked to Collins and Evans' discontent for expertise to be approached in terms of attributable social status and authority, and with talk about lay expertise, which, for them, is a problematic oxymoron (e.g. Collins & Evans, 2002; Collins & Evans, 2007). According to Collins and Evans such issues also increasingly emerge due to the legitimacy problems of science and scientific expertise in contemporary societies – that have been publicly salient especially in the context of issues involving risk and controversy – which have been aimed to tackle by means of extending expertise through public participation in techno-scientific decision-making and discussion. Collins and Evans claim that the problem of legitimacy is therefore replaced by the problem of extension, that is, how far can expertise extend in dealing with techno-scientific public issues, and on what basis social actors should be included as experts in technical decision-making. In relation to this, it is also argued that the technical phase in dealing with such issues should be distinguished from a distinct political phase in which citizens should have a say as political actors in a democracy (Collins & Evans, 2007; see also Collins, Weinel & Evans, 2010), although the rationale and practical possibility of making such distinction has been contested by other STS scholars (e.g. Wynne, 2003; Jasanoff, 2003).

While not delving further into the political underpinnings of the normative theory of expertise, it is important to draw attention to how the kind of typology of expertise that Collins and Evans introduce is related to this issue of expansion of expertise in that it (1) makes explicit that expertise should be understood to be possessed more broadly than just by those with formal credentials because social actors can possess different types of expertise acquired through experience and socialisation despite of credentials, but also (2) simultaneously strives to demonstrate where the limits of who should be able to claim some sort of expertise can be drawn if expertise is understood in terms of technical ability, as in their theory. Therefore, Collins and Evans (e.g. 2007) also (re)consider influential case studies within STS literature, especially Brian Wynne's studies (1992; 1996) concerning Cumbrian sheep farmers after the Chernobyl fallout and Steven Epstein's studies (e.g. 1995; 1996) of AIDS activists in which the notion of lay expertise figures centrally, to argue that in fact the people talked about in these studies should not be understood as lay experts, but as highly competent experience-based experts. In describing Epstein's case studies the account of AIDS activists is also especially focused on how they came to acquire interactional expertise which Collins and Evans link to these activists being recognised as expert social actors with relevant claims (Collins & Evans, 2007: 52–54), although notably in Epstein's original work (see e.g. 1995) specific emphasis is on the mechanisms and tactics through which the activists gained credibility and an authoritative voice as expert actors. It is therefore not evident that this recognition had merely to do with the activists' acquisition of expert ability through linguistic socialisation to the biomedical culture, but rather necessitated forms of credibility work from them in which the moral and political issues were very much intertwined with the epistemic issues (Epstein, 2011). Article II in this dissertation also makes explicit how public recognition and authority are practically achieved by focusing on the strategies through which popular lay- and semi-professional actors establish credibility for their claims and themselves in the dietetic blogosphere.

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[1] Notably, there is a definitive autobiographical element as a source of developing the concept of interactional expertise as this theorising centrally stems from Collins' decades-long immersion into the gravitational wave physicists community as a sociologist of science during which he acquired interactional expertise in this domain (see e.g. Collins, 2004).

Such downplaying of the argumentative and cultural aspects concerning the public recognition of expertise and its achievement in the context of science-related issues of public relevance – that the supplanting of these aspects with the issue of acquisition of technical ability in considering other scholars' case studies indicates – also raises a broader question. This is that while the normative theory of expertise can prescribe types of expertise to be recognised on the basis of technical ability these involve, can constitutive issues related to recognition and judgement of expertise be detached from the issues of authority and credibility in the way that the approach aspires to. Collins and Evans eagerly point out that their theory should not be conceived as having to do with issues of how scientific experts relate to society, or at least "is only indirectly about them" (2002: 236), and that status acquisition and similar "attribution" issues related to expertise in society are not their concern. Indeed, insofar as the normative theory of expertise is applied to some of its core issues, such as the important notion of interactional expertise and its acquisition and uses in different domains, the theory can certainly function in isolation from science, expertise and society issues to point out how such types of expert ability can be recognised and put to use. However, its direct and explicit oppositional positioning to all kinds of relational and constructionist theories of expertise, and argumentation and different examples about unwarranted and dubious claims to expertise also outside of the domain of science, such as in the public sphere, indicate that while the theory is not about status and authority acquisition it certainly does touch upon the issue of expertise in society (Collins & Evans, 2002; Collins & Evans, 2007; Collins, Weinel & Evans, 2010; Collins & Weinel, 2011; Collins, 2014; Collins & Evans, 2017). It is just that the issue of recognition and judgement of expertise is made in the approach to be strictly about expertise as technical ability as a way to supplant the issue of expert authority and credibility, and basing trust and judgement on these. A way to do so is offered by pointing out how judgements about technical ability in the face of claims to expertise can, and should, be made based on the normative theory of expertise.

The societal usefulness of viewing expertise more in terms of the normative theory of expertise is also notably discussed within the approach through examples, such as the case of the American actress Jenny McCarthy's status and authority (as a vaccine critic) in public discussion on vaccines, where the aim is to point out how certain social actors have become attributed with expertise on knowledge-intensive issues because of having already established media status and having made persuasive claims based on anecdotal evidence while lacking in technical ability and proper scientific understanding with respect to the issue at hand, and therefore not actually possessing any expertise in the way explained by the normative theory (Collins, 2014). For one thing, however, the exact role and function of the normative theory of expertise for this kind of exercise of considering expertise is perhaps not completely obvious as the point can be made that it is "not much of a challenge to show that Jenny McCarthy is not an expert on scientific issues related to vaccination" (Ylikoski, 2016: 463). However, as the theory disavows consideration of what the recognition of expertise in cases like these might have to do with issues of public authority and credibility, and how these are established and judged, it can also only account for and offer a framework for investigating expertise in such cases by referring back to the theory's own principles on how expertise should be recognised and judged in terms of the technical ability possessed by social actors involved in such cases based on the prescribed typological categories in the theory. In other words, fundamentally, the issues of recognition and judgement of expertise are strictly fixed in the approach to understanding expertise as a technical ability.

While the normative theory of expertise, then, provides an operationable basis for recognising and judging expertise as kinds of technical ability, arguably this way of approaching expertise does not pervade universally, or as a standard, in societies and in everyday life. People strive to recognise and make judgements concerning expertise regardless of whether they have a grasp of this theory, or any other theory of expertise for that matter. Therefore it remains a crucial empirical question to investigate these issues beyond the framework of the normative theory of expertise that focuses on expertise as a technical ability. How is it possible that social actors such as Jenny McCarthy, for instance, get recognised as something like expert speakers on crucial public health issues such as vaccines? How is this recognition achieved by such social actors? What constitutes judgements about expertise in areas where different claims to expertise and knowledge exist and compete?

Notably, the focus in the normative theory of expertise on technical ability can also guide social inquiry methodologically in a way that can lead to rather restricted things to say about the basis of how, for example, journalists, who importantly mediate and influence the public recognition of expertise, judge expertise – other than having recourse to the normative argument that it would be good if journalists would focus more on the technical ability of sources who are utilised as experts (see Boyce, 2006). However, as Article III in this dissertation demonstrates, journalists who report on healthy eating make sense of the journalistic judgement of expertise through a variety of repertoires, which exceed the specific issue of expert sources' technical ability and involve tensions, but together illuminate what for journalists themselves constitutes the everyday framework of their judgement and use of expertise. Arguably, making this explicit is of importance for a comprehensive understanding of how expertise is judged by journalists as mediators of expertise in the contemporary public sphere, and how their judgement exceeds the issue of the technical ability of their expert sources. For this purpose, for example, the kind of empirically grounded typology offered on the basis of investigating journalists' repertoires in Article III importantly also provides methodological support to uncover and analyse journalistic judgement of expertise.

The issue of authority and expertise also figures somewhat paradoxically in Collins and Evans' normative-realist approach in the sense that it is underpinned by concern over scientific authority and the status of scientific expertise in democratic societies, while at the same time exactly aiming to offer a theoretical alternative to approaching expertise in terms of authority and status. Especially noteworthy in relation to this is that the approach insists that focus is directed strictly to actual technical ability possessed by social actors in cases in which non-scientists seem to have gained expert status and authority on problematic grounds, as in the Jenny McCarthy case. In contrast, when it comes to discussion of scientists as experts, the issue of authority is elevated as it is extensively argued by Collins and Evans that the authoritative standing of science and scientists in democratic societies should, by default, be embraced not on technical, but on moral grounds. The crux of their argumentation regarding this is that it is important to recognise and take into account that scientists aspire to act based on values ideally involved in science, such as ideal Mertonian norms (e.g. Merton, 1973). Therefore, Collins and Evans assert that it is important to *choose* to place confidence in expertise morally constituted by such scientific values, although the choice cannot be rationally justified (e.g. Collins, Weinel & Evans, 2010; Collins & Evans, 2017).[2] As a consequence of the fact that the authority of scientific expertise is in this way understood as a matter of ethical choice, the approach is also detached from concerns over the ways in which scientific experts achieve and maintain their authority in society and in the public sphere, or face problems in doing so, although expressing normative concern over the issue.

2.3 THE RELATIONAL PERSPECTIVE AS THE THEORETICAL FRAMEWORK: EXPERTISE AS RELATIONALLY CONSTITUTED AND CONSTRUCTED

In contrast to the programmatic normative-realist approach, the relational perspective in the social study of expertise emerges more from a constellation of studies within STS, empirically especially from within its historically central subfield of SSK. These studies have demonstrated and theorised different aspects of how expertise and its recognition are constituted by, and constructed in, social relations (e.g. Jasanoff, 1990; Wynne, 1992; Shapin, 1994; Epstein, 1995; Jasanoff, 1995; Epstein, 1996; Wynne, 1996; Gieryn, 1999; Turner, 2003; Lynch et al., 2008). There are also investigations on expertise that are situated more within the rhetoric of science and communication studies that in a similar vein argue and demonstrate how expertise is relational by explicating it as a discursive rhetorical achievement that depends on establishing and maintaining an expert position in relation to an audience through rhetorical work and the construction of an ethos (e.g. Lyne & Howe; 1990; Taylor, 1992; Miller, 2003; Hartelius, 2008).

While the normative theory of expertise rather views the issue of authority as problematic in relation to expertise, and therefore aims to theoretically tackle it, characteristic of these relational studies on expertise is that authority and the related issue of credibility are approached exactly as the central issues to be *empirically* investigated, as well as theorised based on empirically well-informed grounds, in order to understand expertise in society and culture. As this dissertation approaches expertise from the relational perspective, it is important to first explicate authority and credibility as central theoretical concepts in investigating the constructedness of expertise in the contemporary public sphere. It is important to note that, while these concepts are especially relevant when studying knowledge and expertise in public domains, the utility of these concepts also extends beyond the public dimension, to such areas as analysing authority and credibility in intrascientific settings, or governance or policy settings where scientific expertise counters other forms of knowledge and expertise (e.g. Shapin, 1995a; Turner, 2003). Therefore, it is especially such relational literature on expertise that has previously scrutinised how expert authority and credibility are constructed in public that is surveyed here. The central notions and analytical tools utilised in this dissertation are also elaborated (in section 2.3.2.). However, notably, issues of authority and credibility also figure in seminal studies that have elaborated how expertise is relationally constituted and constructed in the policy domain (see e.g. Jasanoff, 1990) and in the judicial domain (see e.g. Jasanoff, 1995; Lynch et al. 2008).

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[2] A question can therefore also be raised concerning how symmetrical the normative theory (Bloor, 1976) is as a sociological theory of expertise, if this type of difference in explanation and argumentation are involved.

2.3.1 AUTHORITY, CREDIBILITY AND APPROACHING EXPERTISE AS RELATIONAL

As authority is primarily a political concept, commonly understood in political theory especially in terms of legitimate domination of kinds as described for example by Max Weber ([1921–22]1978: 212–301), what is its relation to expertise as the characteristically knowledge-based capacity to act in social life? For one thing, the issue of authoritative expert steering of society without experts being directly accountable in a democratic society (Turner, 2003) has been a central concern and topic in social theory (e.g. Habermas, 1984; 1987; Giddens, 1991; Beck, 1992). However, as Stephen Turner (2003) points out, there is also the further, separate issue of the "cognitive authority" of experts, that Robert Merton (1976) initially raises, that concerns itself with experts as providers of authoritative advice in society, which is a conceptually relevant relational notion in the context of this thesis. Turner, usefully, further elaborates cognitive authority, or cognately *epistemic authority*, as a kind of authority by noting that while, in political theory terms, authority would contrast to knowledge: "the term makes sense as an analogue to 'moral authority'. And there is of course an earlier, and perhaps more fundamental, notion of *auctoritas* as authorship. In all of these cases is the notion that 'authority' has at first hand something that others – subjects or listeners – get at second hand by way of authority." (Turner, 2003: 24, [cursivation of auctoritas in original]).

This makes explicit the basic relation of how knowledge is embedded in, and mediated through, authority in society. As Steven Shapin notes, despite the rationalist-individualist tradition of contemporary western societies: "almost all of our stock of knowledge [...] is held by courtesy, through reliance on others, on the basis of authority and trust." (Shapin, 2004: 46). Moreover, Shapin also importantly notes that despite the considerable historical effort especially of scientists aiming to detach themselves from moral "ought" questions, the kind of epistemic authority often sought after through reliance on scientific, or other forms of, expertise in late-modern culture is indeed moral authority, which could provide knowledgeable guidance not so much on how things are, but what to do (e.g. Shapin, 1995b; Shapin, 2004; Shapin, 2007a; Shapin, 2007b).

To a considerable extent, it is indeed expertise in contemporary societies that figures as a source of authoritative advice, and in which public trust is placed (Turner, 2003; Shapin, 2004). However, characteristically, that expertise is also "almost always external: it belongs to someone else and our problem is how to recognise it, access it, and mobilise it" (Shapin, 2004: 46). However, regarding this, there is also the issue with expertise that it "cannot be known directly" (Shapin, 2004: 46). Therefore, while other experts with similar technical training may recognise expert claims as valid, the public needs to recognise and accept expert claims on some other grounds, fundamentally on the authority of the experts making the claims (Turner, 2003: 25). This makes it crucial in understanding the relation of experts and expertise to public to grasp what indeed constitutes expert authority – how is it established and maintained – as Turner (2003: 25) also further points out, and also how is it negotiated and judged.

Turner (2003: 25–46) also provides a general typology of expert-audience relations in society based on paying theoretical attention to the kind of audience for which each type of expert is an epistemic authority. Turner's typology consists of five types of experts as epistemic authorities, which can be roughly summarised as follows. Type I experts are scientific experts, such as physicists, whose epistemic authority as experts is basically generally recognised in contemporary societies as their expertise is understood to be the kind of constitutive expertise that enables, for example, the development of advanced technologies. Type II experts, such as theological experts, have a specific, restricted audience in society for whom they are epistemic authorities. Type III experts, such as therapists and popular authors, create their own following by providing expert advice that their audience finds useful. This can also allow a broader claim to expertise through appeal to the testimony of people who have benefitted from their advice. Type IV experts are promoting a cause and are subsidised to claim expertise to persuade the public about some specific choice or action based on these experts' views. Type V experts have an audience that is primarily not the public but rather professionals with discretionary powers, such as professionals in public administration. Importantly, this typology makes explicit, on a general, ideal-typical level, the different kinds of epistemic authority relations between experts and audiences, as well as how some experts and their expertise can be understood to have more established and general audiences than others in society. The notion that experts are epistemic authorities with respect to audiences also draws attention to how expertise in society is not so much about providing technical knowledge and understanding, but about providing expert *advice* that is of use and actionable. This is especially the case when it comes to expertise in the public sphere in that public expertise crucially relates to the explanation of practical problems that are of public relevance and to providing advice for the affected public to deal with the issue at hand (Peters, 2008; Rip, 1985).

However, although Turner's typology draws attention to the importance of paying attention to the relation of epistemic authority in thinking about expertise and gives a structural overview of the kinds of expert-audience authority relations, especially much of SSK literature (e.g. Barnes & Shapin, 1979; Gieryn, 1983; Wynne, 1992; Wynne, 1996; Shapin, 1995a; Barnes, Bloor & Henry, 1996; Gieryn, 1999) has made theoretically and empirically explicit how the epistemic authority of even the most paradigmatic kind of scientific expertise in society and in public life is by no means static, but rather is contingent and subject to consideration and negotiation. As the sociologist of science Thomas Gieryn, who was a student of Merton, points out: "Epistemic authority does not exist as an omnipresent, but rather is enacted as people debate (and ultimately decide) where to locate the legitimate jurisdiction over natural facts" (Gieryn 1999: 15). In this dissertation, the focus is in this vein also on investigating expertise as something that is actively constructed, shaped and maintained in public life.

SSK scholarship has especially theorised and demonstrated how achieving *credibility* is central for social actors and their claims to be recognised and accepted as epistemically authoritative, and how achieving credibility necessitates active work from social actors (e.g. Wynne, 1992; 1996; Shapin, 1995a; Epstein, 1995; 1996; Gieryn, 1999). In this view, as elaborated well by Shapin (1995a), it is acknowledged that, as validity is not necessarily a guarantee of credibility when it comes to knowledge and expertise in society, it is important to empirically scrutinise the grounds and ways in which credibility for these is achieved. Furthermore, credibility is defined rather as the "outcome of contingent social and cultural practice" (Shapin, 1995a: 257) than as any measurable, predefined variables. In this dissertation, credibility is also understood in these terms with respect to epistemic authority, and is especially conceptually drawn upon in Article II to demonstrate how public credibility is constructed in the dietetic blogosphere.

2.3.2 RELATIONALITY AND THE CONSTRUCTEDNESS OF EXPERTISE IN PUBLIC LIFE: THEORETICAL NOTIONS AND ANALYTICAL TOOLS

In the previous section, I provided an elaboration of how the concepts of authority and credibility, and the advice-giving nature of expertise, are defined and understood in the relational approach to expertise in which this dissertation is grounded. The purpose of this section is to elaborate the specific notions and analytical tools that are utilised and built upon in this study to investigate the constructedness of expertise in the contemporary public sphere.

Boundary-work and the relational construction of public expert role identities

The epistemic authority of science and scientific experts is by no means self-evident in society and is subject to contestation. Scientists themselves indeed also often engage in active efforts to sustain, or expand, their epistemic authority through *boundary-work*, that is, by attributing "selected characteristics to the institution of science [...] for purposes of constructing a social boundary that distinguishes some intellectual activities as 'non-science'" (Gieryn, 1983: 782). Gieryn, who coined the concept, further notes that boundary-work is essentially a practical rhetorical activity of demarcating science and scientific expertise by contrasting these in relation to other forms of knowledge and expertise. It is especially common in public science to describe what science is for the public in order to sustain its public authority (Gieryn, 1983; 1999; cf. Collins and Evans, 2007 emphasis on *a priori* demarcation of what counts as expertise based on their normative theory, as described in section 2.2.). However, Gieryn notes that the attribution of characteristics to science and scientific expertise in such demarcation work is contingent and flexible, dependent on, and in relation to, which other kind of knowledge or expertise the contrast is drawn. Gieryn (e.g. 1999: 37–64; also concisely in 1983) demonstrates this especially in his historical case study of the double boundary-work of the physicist John Tyndall who, as a prominent public figure speaking for science in Victorian England, flexibly attributed different characteristics to science and scientific expertise to demarcate it, on one hand, from religion, and on the other, from engineering. Both aspects presented a different type of overall challenge for the public authority of science and scientists in the era; religion as a more established, ancient authority (also on the natural world), and engineering knowledge and expertise as the contemporary competition of which practical achievements were easy for the public to recognise. By way of a rough summary, and to convey Gieryn's point about the flexibility of the demarcation work, Tyndall contrasted science favourably to religion by describing science and scientific expertise as practically useful, empirical, sceptical and objective; whereas in contrast to engineering Tyndall emphasised science basically as more fundamental than engineering and its associated expertise by attributing to science that it is: theoretical, produces the knowledge on which engineering also depends, works through systemic experimentation, seeks to discover things as an end in itself, and is intellectually important in human culture (Gieryn, 1983: 785–787).

The concept of boundary-work is, then, useful in investigating how scientific experts construct and maintain their authority in public life, where their epistemic authority especially is fundamentally open to contestation and competition from different directions. It can be used to make explicit how and what kind of demarcations are actually drawn in contrast to other forms of knowledge and expertise to sustain their public authority (Gieryn, 1983; 1999; also e.g. Cassidy, 2006; Parry, 2009; Moore & Stilgoe, 2009). However, while boundary-work is mostly used in the Gierynian vein to scrutinise the external aspects of how scientists demarcate their activities and expertise from something else in public, Article IV in this dissertation acknowledges the notion of, and focuses on, identity construction through boundary-work and sensemaking (Lam, 2010; Rijswoud, 2012; Rijswoud, 2014) in interviews with scientists and scientifically trained professionals (e.g. dietitians) who are experienced in acting as public experts on dietary issues to make explicit their different role identities as public experts and how these are relationally constructed.

The notion of boundary-work can, indeed, be usefully theoretically appropriated to illuminate how science-based experts actively construct their role identities when they need to navigate the boundary between science and another domain as for example Alice Lam (2010) does with respect to how scientists construct and negotiate different role identities in the university-industry boundary (in the academic-entrepreneurial axis). Similarly, navigating the science-public boundary involves active identity construction (Rijswoud, 2012; 2014; Davies & Horst, 2016). And as Erwin van Rijswoud (2012; 2014), and Article IV here later, demonstrate experts crucially construct their role as public experts relationally by orienting themselves in relation to the public, to other social actors, and also to other ways of being and acting as a public expert, as outlined in Article IV. Ethos, or moral character, is also a central component of public expert identities, and experts need to consider what kind of expert ethos to maintain when acting in public life (Rijswoud, 2012). Therefore, Article IV also draws on the notion of the constructed nature of expert ethos (Hartelius, 2008) and shows how different *public expert role identities* involve constructing and displaying different ethoses. Moreover, while Rijswoud (2012; 2014) relies on what he terms as a biographical-narrative approach – that works methodologically in a rather specific way to provide an in-depth, longitudinal insight to the relational identity construction and boundary drawing of specific individual scientists as public experts – the analytical identification and elaboration of different role identities specifically (as in Lam, 2010) in how experts navigate the science-public boundary is of theoretical relevance as public expert role identities differ as to how the position of epistemic authority in public life is constructed and negotiated, as Article IV conveys. In regard to this, it is also made explicit in Article IV that while science-based experts, who are more oriented to openly engage with the public, display a move away from the position of distant epistemic authorities in public life, they still actively construct and negotiate their public authority despite the dialogical, egalitarian orientation to public communication as such.

Credibility strategies and the constructed nature of public credibility

The relational nature of achieving, or failing to achieve, public authority and credibility is also especially salient in studies within STS that reflexively deal with the expert-lay interface (e.g. Wynne, 1992; 1996; Epstein, 1995; 1996). These empirical studies have problematised any simple, categorical expert-lay division, and demonstrate how the recognition of expertise fundamentally has to do with whether knowledge and advice of the social actors claiming expertise is found credible and authoritative by those who should perceive them as such. Moreover, these studies make the important notion that, at the practical level, this crucially depends on culturally competent communication that taps into the lifeworld and understanding of the clientele of expertise. For example, one of the central points made by Wynne (1992; 1996) in his studies on the interaction between UK government scientists and Cumbrian sheep farmers after the Chernobyl fallout is how the scientists failed in exactly this as they did not acknowledge the relevance of the sheep farmers' local knowledge for understanding the effects of the fallout in the specific environment of Cumbria. They rather authoritatively imposed expert advice, some of which later turned out to be considerably erroneous, that they expected the farmers to follow. As a result, the scientists lost their credibility as experts in relation to the farmers. Epstein's (1995; 1996) studies of AIDS activists also centrally make the same theoretical observation but, in turn, show how the activists did manage to construct themselves as credible in relation to biomedical culture and scientists, and also more broadly in discussion about AIDS research in society and public life, through the credibility tactic of communicating their knowledge in a way that tapped into the discourse and culture of biomedicine, and also through the tactics of: establishing themselves as political representatives, combining epistemological and moral arguments, and taking sides in pre-existing methodology debates about clinical research.

Conceptually key is the notion of the social actors' different ways to aim to establish credibility through practical and argumentative activities as *credibility tactics* (Epstein, 1995)*, or strategies* (Penders, 2014; Article II in this thesis),[3] which crucially are "key mechanisms" (Epstein, 1995: 410) in constructing credibility (see also Shapin, 1995a: 261), and therefore need be analysed and made explicit to better understand how credibility is established by social actors for their knowledge and testimony to be taken as authoritative in society and in public life. What kind of strategies get devised and utilised has to do with for whom social actors want themselves and their propositions to appear as credible. Constructing credibility as a knowledgeable, competent social actor in relation to biomedical culture necessitates some rather specific and different moves than those used for establishing credibility primarily in relation to the lay public. Getting recognised as a public authority on healthy eating is saliently a matter for which basically all social actors, also nutrition scientists and professionals, need to engage in active credibility work because healthy eating is an issue of relevance in everyday life over which a wide variety of actors claim expertise. It is also an area where "the laity assert their freedom to pick and choose which expertise is credible, while giving few signs that they find the whole domain of dietary expertise wanting." (Shapin, 2007a: 176). Healthy eating as a public issue is therefore a fruitful site for investigating social actors' strategies for establishing public credibility as providers of authoritative advice for laypeople (Shapin, 2007a; Penders, 2014).[4]

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[3] As some more specific argumentative and rhetorical manoeuvres can also be involved.

Shapin (2007a) observes two key differences in how nutrition scientists and best-selling popular diet authors (such as Dr. Atkins and Dr. Agatston) address lay readers, and aim to establish their claims and themselves credible and authoritative. First, the popular diet authors make efforts to engage with the emotional and social meanings of eating, while nutrition scientists' popular writing tends to address readers rather as something like rational maximisers who only look for advice on how to make the right eating choices to maximise health and to live longer. Second, nutrition scientists' advice is rather crafted for a population and its members, whereas popular authors saliently address their readers as unique individuals and provide descriptions of how other individuals have overcome dietary predicaments. Penders (2014) observes how, in their popular books, three prominent Dutch nutrition scientists aim to establish public credibility by drawing to a large extent on some of the central credibility strategies and techniques of popular diet authors, such as making use of narratives, by explicating norms and by providing concrete lifestyle counsel, although their aim is rather to debunk dietary "myths" and "diet gurus" and to replace them with nutritional facts. However, Penders also observes that, although by drawing on such credibility strategies of popular diet authors these scientists move beyond mere one-way dissemination of nutritional knowledge and actively aim to establish a close relationship with the lay reader, they still remain as rather distant scientists as they merely pick these strategies from the toolbox of popular diet authors, but "continue to be scientists, assuming that their readers share a very specific world view in which in all things nutritional, science has a preferred access to reality" (Penders, 2014: 908–909). This importantly makes explicit how public credibility cannot be simply achieved by adopting the communicative strategies and tricks of other social actors claiming expertise. As Article II in this dissertation further points out and demonstrates, the *epistemic stance*, that is, what is constructed as epistemically valuable and commonsensical in the argumentation of social actors, importantly has to do with constructing public credibility, and not just how the actors claiming expertise argue and rhetorically persuade the lay public to accept their claims, and themselves, as authoritative.

Important in establishing public credibility are also the specific *rhetorical resources*, which are culturally bounded and available resources that can be put to use to guide people to perceive and recognise arguments and claims as authoritative, but can also be employed differently by social actors (Billig, 1996; Potter, 1996; also Shapin & Barnes, 1976). In investigating the relational construction of public credibility, paying detailed attention to how specific rhetorical resources are employed is arguably important as, for example, responsibility or quantification can be rhetorically employed in argumentation in very different ways by social actors claiming and struggling for public authority, as Article II makes explicit. Moreover, in Article II, Michael Billig's (1991; 1996) notion of the dialectical nature of argumentation is drawn upon to illuminate how public expertise is also relationally constructed in that social actors construct public credibility *dialectically* by arguing against opposing claims about the public issue at hand, and against opposing claims to expertise.

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[4] Of course, credibility strategies are not universal, or necessarily transferable between different contexts, that is, that there would be something like *the* credibility strategies that can be discovered and applied (Shapin, 1995a) in a business consulting kind of way. Also, credibility strategies are not necessarily strictly hyper-contextual, so that for example the kinds of strategies identified by Epstein would apply solely and be completely situated in the highly specific context that he studied, although some specific manoeuvres and resources drawn upon within the strategies would be more context specific. Conceivably, for example, strategies for establishing public credibility identified within the dietary context could also be similar within other health contexts, and perhaps also more broadly when it comes to social actors' attempts to act as public authorities and to provide authoritative public advice on matters relevant to everyday life.

Interactive framing and expert authority

Public engagement with science activities is an area of public life where the issue of interaction between experts and the public is salient, but which also involve elements of organised interaction (arrangements of sites of interaction, possibly invited speakers, etc.) and typically facilitators who mediate between the participants. Moreover, the intended aim is commonly to avoid the formation of hierarchical, authoritative roles or positions between participants and rather to keep the discussion participatory and deliberative so that categorical "expert" positions based on technical competence or credentials can be avoided. However, in practice, it is by recourse to science and technical understanding that authority and propositional rights are often also claimed by participants other than the invited expert speakers (Kerr et al., 2007; Davies, 2013) and expert participants, such as scientists, can also easily fall back on their technical expertise and answer related questions (Radstake et al., 2009), thus maintaining a detached but authoritative position in the discussions.

It has, however, also been observed that the dynamics of expertise and hierarchies of authority are negotiated in the interaction between the participants and facilitators by flexibly adopting different subject positions in the expert-lay axis, as Kerr et al. (2007) observe. There can also be more disruptive actions that break or resist such interactional arrangements and "rules" of engagement that build up a hierarchy among expert speakers and other participants (e.g. Davies, 2013). Article I draws on Erving Goffman's (1974) notion of interactive frames and framing to analyse how the relation of authority and the propositional rights of participants also notably have to do with different frames that can coexist in PES events. The Goffmanian notion of interactive frames posits that frames constitute the organisation of experience and what is going on in social interaction (Goffman, 1974; Tannen & Wallat, 1987). The notion of interactive frames is a useful tool as it helps to draw attention to the dynamics between more hierarchical and egalitarian framings of relations between the participants, and how shifts in interactive framing can also be a way to negotiate the relation of authority between the social actors involved.

Journalists' role as mediators and interpreters of expertise

Much of STS research that touches upon experts and expertise in the public sphere has tended to approach and conceptualise the expert-public relation as somewhat direct. Although the issue of a categorical division between "experts" and "the public" has certainly been discussed reflexively and in-depth, the role and influence of the agents who mediate expertise in the public sphere has been considerably less theorised within STS. While it is important to understand the terms and ways in which experts aim to communicate and establish a relation to the public, and vice versa, and while there are indeed better than ever possibilities for direct expert-public communication via the internet and social media, expertise in the contemporary public sphere is arguably also socially shaped as it becomes mediated for the public. As elaborated above, public engagement with science activities and events are one area of public life in which mediation and interactional organisation of the expert-public relation are involved, and which has gathered STS interest. However, of relevance to better understand how expertise is socially shaped as it is mediated is also to scrutinise how journalists judge and make use of expertise, an issue that is chronically under-researched, especially within STS scholarship. In addition to being central professionals mediating the expert-public relationship, journalists also mediate between different social actors claiming expertise in the public sphere.

By taking an attentive glance at the daily news stream it is hard not to spot how permeated contemporary media reporting is by expert commentary (Turner, 2003 also on this). It is noteworthy that the same can be said for the most mundane issues pertaining to everyday life, and often even especially for such issues. Healthy eating, in particular, is a topic where expert sources are constantly utilised by journalists and they need to consider what to make of different claims to expertise. Therefore, Article III scrutinises how the journalistic judgement of expertise is constituted around this issue. Journalists as professionals certainly do rely on experts to provide knowledge and contextual understanding, as well to enact journalists' own interpretations and narratives as knowledgeable (Conrad, 1999; Tanner, 2004; Boyce, 2006; Albæk, 2011). Therefore, journalists have an interest in utilising knowledgeable sources, especially sources who can assert their claims with authority and who are regularly relied upon by journalists (Gans, 1979; Hallin, 1986; Schudson, 2003; Reich, 2009). However, journalism is also essentially a social institution with workings that are fundamentally guided by the active and collective interpretative practice of the agents, the journalists (Zelizer, 1993). Therefore, journalism does not merely make passive use of expertise, but rather actively interprets and articulates its meaning and relevance through discourse, as do other social institutions in which the active interpretative work of social actors is central, such as the courts of law (Lynch, 2014).

Whereas the normative theory of expertise can rather be utilised to scrutinise journalists' assessment of their sources' expertise in light of the theoretical categories of technical expert ability (Boyce, 2006), to understand in journalists' own terms how they judge and utilise expertise, it is crucial to get an analytical grasp of journalists' shared discourse and interpretations on this. For this purpose, the notion of *interpretative repertoire*, the culturally shared ways of sensemaking within an interpretive community (Gilbert & Mulkay, 1984; Potter & Wetherell, 1987), is methodologically utilised to elicit the different ways in which journalists account for their judgement of expertise, and Article III shows how expertise is interpreted and constructed within the different repertoires identified. The notion was originally developed by the sociologists of science Nigel Gilbert and Michael Mulkay (1984) to make explicit how scientists variably draw in their discourse on an empiricists repertoire (where science is empirical and rational) and on a contingent repertoire (where science is fallible and involves social factors),[5] and also to point out how variability in social actors' accounts can be approached as analytically interesting, rather than as problematic, as analysing such variability can also help to uncover contradictions and tensions between repertoires. Article III does this in regard to repertoires drawn upon by journalists to account for their judgement of dietetic expertise. This makes intelligible how for journalists, as central mediators who exert influence on the public recognition and understanding of expertise, different considerations are related in how they judge and utilise expertise.

2.4 SSK METHODOLOGICAL RELATIVISM AND THE STUDY OF PUBLIC EXPERTISE

In this section, I elaborate on how SSK methodological relativism underpins the way in which the constructedness of expertise in the contemporary public sphere is approached in this dissertation. This is important in clarifying that approaching and analysing expertise in public life from a relational perspective does not mean denying the possibility of social actors possessing real expertise in the form of technical competence, or that expertise should be understood as a mere linguistic construct as such. Regarding this, this study concurs with Wynne's view in his commentary on Collins and Evans' (2002) normative theory of expertise that "of course we can agree that expertise is real, but its salience, validity and authority with respect to a public issue are still conditional: these conditions can be elicited with SSK

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[5] The study is situated in a context of a scientific controversy and debate between biochemical scientists working on oxidative phosphorylation. Gilbert and Mulkay demonstrate how the scientists especially draw on the empiricist repertoire to account for their own views, whereas the contingent repertoire was typically drawn upon to account for the views of scientists who held opposing views in the controversy.

'methodological relativism'" (Wynne 2003, 403). Moreover, it is also noteworthy that SSK methodological relativism directs to analytically approach social actors' claims to expertise in terms of being in need of impartial and symmetrical social explanation, and to bracket considerations regarding the erroneousness or truthfulness of the content of their statements.

In his 1976 book *Knowledge and Social Imagery* David Bloor, a scholar from the Edinburgh school of science studies, explicated the epistemological-methodological principles and laid the groundwork for the influential Strong Programme, which basically argued for the possibility of sociological investigation of scientific knowledge – alongside other types of knowledge – and how this type of sociological analysis could proceed in a naturalistic, non-normative fashion. As Bloor (1976: 2) puts it:

> *"The sociologist is concerned with knowledge, including scientific knowledge, purely as a natural phenomenon. His definition of knowledge will therefore be rather different from that of either the layman or the philosopher. Instead of defining it as true belief, knowledge for the sociologist is whatever men take to be knowledge. It consists of those beliefs which men confidently hold to and live by."*

The Strong Programme, then, wanted to include scientific knowledge under types of knowledge that can be analysed sociologically, so that the sociology of knowledge would not have to be just the sociology of error. More importantly, however, in *Knowledge and Social Imagery,* Bloor explicates the basic methodological tenets of SSK:

> *"1 It would be causal, that is, concerned with the conditions which bring about belief or states of knowledge. Naturally there will be other types of causes apart from social ones which will co-operate in bringing about belief.*
> *2 It would be impartial with respect to truth and falsity, rationality or irrationality, success or failure. Both sides of these dichotomies will require explanation.*
> *3 It would be symmetrical in its style of explanation. The same types of cause would explain, say, true and false beliefs.*
> *4 It would be reflexive. In principle its patterns of explanation would have to be applicable to sociology itself. Like the requirement of symmetry this is a response to the need to seek for general explanations. It is an obvious requirement of principle because otherwise sociology would be a standing refutation of its own theories."* (Bloor, 1976: 4–5.)

The basic point of symmetrical explanation in SSK methodological relativism is, then, that "all beliefs are to be explained in the same way regardless of how they are evaluated" (Bloor, 1976: 142). Methodological relativism was also a key stance adopted and developed by Harry Collins, in his earlier SSK work under his so-called empirical programme of relativism (EPOR), and is summarised by Collins (2001: 184) as “an attitude of mind recommended to the social-scientist investigator: the sociologist or historian should act as though the beliefs about reality of any competing groups being investigated are not caused by the reality itself.” Thus, Collins emphasises, methodological relativism is very distinct from philosophical relativism as “methodological relativism is a technical matter” (Collins, 2001: 187).

The main purpose to purchase to SSK methodological relativism in investigating the constructedness of expertise in the public sphere is, then, that it gives a useful starting point for a symmetrical social explanation of the studied social actors’ stances, views and practices. In Article II, for example, the credibility work of the popular bloggers and institutional experts was analysed in symmetrical terms and considerations regarding the erroneousness or truthfulness of the contents of any social actors’ statements were bracketed. Similarly, in Article III, it was analytically possible to elicit the journalists’ shared discourse and various interpretative repertoires concerning the journalistic judgement of dietary expertise because the journalists’ views about what constitutes their judgement and considerations were not weighed or discarded based on any presupposed idea of what might be a valid or rational consideration by journalists when it comes to considering expert sources and judging their expertise.

There is also a very practical point to methodological relativism in general that is especially familiar to anthropologists doing fieldwork because it is a practice “with the greatest professional self-interest. Fieldwork would be impossible to accomplish if anthropologists felt free to voice dismay whenever confronted by practices that struck them as illogical or repugnant.” (Brown, 2008: 367). Similarly as in anthropology, SSK methodological relativism, as a research attitude, enables the analyst to be sensitive to treating all kinds of views and claims to expertise respectfully, and with genuine sociological interest in the studied social actors’ views and the origins of these views.

3 RESEARCH MATERIALS AND ANALYTICAL PROCEDURES

This chapter gives a description of the empirical research materials of this dissertation, which were analysed with the help of the analytical tools elaborated in the previous chapter. Overall, the research materials basically consist of different types of text and talk from a variety of social actors. However, these materials were not used in this dissertation just to talk about talking and write about writing (Halfpenny, 1988), but were subject to interpretation, which is necessary in order to say something about social and cultural aspects through the analysis of the texts and talk of social actors (Collins, 1983; Shapin, 1984; Fuhrman & Oehler, 1986; Halfpenny, 1988). The use of text and talk data in this dissertation stems from the notion that expertise in public life was not approached an observable “thing” or merely a descriptive matter. Therefore, analysing social actors’ talk and writing is important in grasping how expertise becomes relationally constructed, defined and negotiated in social life. Moreover, to gather data concerning sensemaking, boundary-work, identity construction, interactive framing, and credibility strategies, for example only conducting standardised quantitative surveys, or observing the daily, situated actions of people, would be insufficient. This is because social actors’ active use of language needs to be analysed in order to access and investigate such processes, which are relational and have causative effects with respect to social life. Therefore, text and talk data gained by doing interviews, or by gathering and analysing pieces of written discourse, are especially useful (Lamont & Swidler, 2014; Orbuch, 1997; Miller & Glassner, 1997).

The research materials do not consist of text and talk of just one group of social actors concerning one, specific domain in the contemporary public sphere, such as research interviews only with scientists during which they would be asked to talk about public expertise in social media specifically. Rather, the research materials consist of text and talk from a variety of social actors: (1) who primarily write and speak from an expert subject position (scientists, professional practitioners, popular blog authors), (2) who mediate expertise for audiences (journalists, public engagement with science event facilitators), and (3) members of an audience at a public engagement with science event (who also actively negotiate expertise). All of these groups of social actors can be considered to have a role in the social shaping of expertise in the contemporary public sphere. Furthermore, the materials also touch upon a variety of public arenas, such as editorial media (journalism), the blogosphere, and PES events. Such different arenas can be considered to be central sites in which expertise gets constructed and negotiated in public life, but also involve different communicative logic and afford different relational dynamics.

The next subsections provide a description of the sets of empirical research materials that constitute the data of the four original articles. In addition to describing the kinds of data collected and analysed, the next subsections give a concise overview of the procedures and rationales of data collection and analysis in the articles.

3.1 MATERIALS COLLECTED FROM A PUBLIC ENGAGEMENT WITH SCIENCE EVENT

The materials of Article I, co-authored with Esa Väliverronen, consisted of observational materials and a questionnaire gathered during a PES event at the 2011 Science Forum (Tieteen päivät) in Helsinki where four panellists discussed climate change with the audience. Three of the panellists were experts in climate change issues: a researcher from the Finnish Meteorological Institute, a researcher from the Finnish Environment Institute and a representative from the Demos Helsinki think tank. There was also one non-expert panellist, a girl from an upper secondary school. The panel was held in the cafeteria of the main building at the University of Helsinki and lasted about an hour and a half. There were also two hosts present at the café, an online host and a face-to-face host. Young people were the target audience for the event. An Internet Relay Chat (IRC) with two moderators was also integrated into the event. This multimodality of interaction — the combination of face-to-face and virtual discussion within one event — also enabled the analysis in Article I of how different modes of interaction relate to each other, and how communication and social relations differed between the various modes of interaction.

The data for Article I were collected in two types of ways: through observation and by using a questionnaire. The methods of observation included direct observation of the event – based on which a field report was written and analysed – and observing both the video tape of the event and the internet chat after the event had concluded, which were also transcribed/collated for the analysis. We, the authors of Article I, had no participatory role in the actual event, and we were also not involved in planning or organising the event. The purpose of the questionnaire was to provide background information about the panellists and the audience, as well as their opinions regarding the event and PES activities in general. The questionnaire form had questions and statements about communication, engagement and learning during the event. The questionnaire data was, however, used in Article I only as background material, as the focus was on qualitative analysis. The analysis focused on the interactive framings and their negotiation in such a setting that ideally aimed at egalitarian, non-hierarchical public discourse between the expert panellists and the lay public. The analysis in Article I first explored the staging of the event, that is, the setting of the physical location, as well as other crucial material and organisational arrangements. After this, the interactive frames employed in the event were analysed in terms of how they related to each other and consideration was given to what this means in terms of the social interaction and negotiation of relations between the actors involved: the expert panellists, the non-expert panellist, the audience members (both at the café and online), and the facilitators as mediators.

3.2 BLOG POSTS OF POPULAR NUTRITION COUNSELLING BLOGGERS AND ACADEMIC EXPERTS

The materials for Article II, co-authored with Janne Huovila, consisted of blog posts by six Finnish popular nutrition counselling bloggers (PNC bloggers) and by two academic experts contributing to the National Institute for Health and Welfare's blog (NIHW bloggers). Cision's top 10 health blogs in Finland list from March 2011 (Cision, 2011), together with a broad reading of the Finnish dietetic blogosphere, was used to identify the six PNC bloggers. Most of these six bloggers have appeared in Finnish media, and five of them mentioned that they had published one or more books after beginning to write their blog. All of these bloggers aimed to provide dietetic advice and concepts, such as how much and what kind of nutrients and foods one should eat and why, and how one should overall think about food and eating in order to stay healthy. However, none of these bloggers mentioned having a university degree in nutrition or medicine, or working in health care organisations, but rather defined themselves as nutrition professionals who have some education. Five blog posts by each of these six bloggers (altogether 30 posts), that exemplified all of these authors' particularistic and individualistic stance in giving authoritative advice on healthy eating, were chosen for detailed analysis out of all of these bloggers' posts (n = 169) from the period from the beginning of October 2012 up to the end of October 2013. The PNC bloggers' approach to providing dietary advice was compared to that of two academic experts who had written about healthy eating in the NIHW blog: a senior nutrition researcher, Marja-Leena Ovaskainen, and the Head of the Health Department, Dr Erkki Vartiainen. All seven blog entries related to healthy eating written by Ovaskainen and Vartiainen, from 2012 up to November 201,4 were chosen for analysis. Altogether, then, the material chosen for analysis in Article II consisted of 37 blog posts by the PNC and NIHW bloggers.

The posts were analysed with a focus on how these authors aimed to establish public credibility for their claims and themselves, a practice which increasingly takes places in the blogosphere that lacks many of the social controls that govern the conduct of professional journalists and experts

(Turner, 2013). The analysis in Article II proceeded by first focusing on identifying explicit normative advice and claims about healthy eating in the posts, after which we analysed what kind of expressions and rhetoric were used to justify the advice given and the claims made. Attention was also paid in the analysis to justifications of claims through criticism of competing claims. A specific focus was on what kind of rhetorical resources (Billig, 1996; Potter, 1996) the bloggers drew upon and how they appropriated these in different ways in establishing dietetic credibility. As the bloggers' texts were approached as argumentative accounts (Billig, 1996) in an ongoing public dispute about healthy eating, central to the analysis was the examination of the wider rhetorical strategies used by the authors. In analysing these, the focus was on how different rhetorical resources were strategically utilised by the authors to establish a certain viewpoint on healthy eating as being credible and to counter alternative views. Based on these analytical grounds, three dominant rhetorical strategies used by the PNC bloggers were identified in the analysis of Article II: (1) appealing to personal experience, (2) indicating cultural struggle, and (3) redefining authority. The NIHW bloggers' posts were subsequently analysed to investigate how their credibility construction compares to that of the PNC bloggers and to the three strategies.

3.3 IN-DEPTH QUALITATIVE INTERVIEWS WITH JOURNALISTS AND EXPERTS

The third set of research materials in this dissertation come from a broad qualitative interview study dealing with public dietary expertise in Finland that I conducted. This set of research materials consists in total of 26 qualitative, in-depth interviews with both journalists and experts. Article III deals with journalist interviews and Article IV with the expert interviews, so I describe these separately.

The materials for Article III consisted of ten in-depth, qualitative interviews with Finnish journalists reporting about health issues and about healthy eating for the news media. I did these interviews between June and December 2014. Each interview session lasted from 45 to 105 minutes approximately and was recorded. For the analysis, the recorded material was transcribed to text documents. The interviewed journalists' work experience in journalism varied from a couple of years to decades with an average experience of 14.25 years of reporting. The broad issues dealt with in the interviews were: (1) selection of expert sources when covering healthy eating topics, (2) judgement of the sources' expertise and (3) the role of the media in constructing an understanding of healthy eating and the expertise related to it. The guiding idea in the interviews was to encourage the interviewees to reflect about their actions, considerations and choices in dealing with expert sources for healthy eating topics, as well as to discuss more generally how journalism relates to expertise in this context. The analysis in Article III focused on the different but “relatively internally consistent” (Wetherell and Potter, 1988: 171) ways in which these journalists talked about journalism and dietetic expertise, based on which four interpretative repertoires were identified – routine, pluralistic, service and interest – in each of which the issue of journalistic judgement of dietetic expertise was constructed in different terms. Each of these repertoires involved the use of expressions, terms and style (Gilbert & Mulkay, 1984; Potter & Wetherell, 1987) to discuss dietetic expertise specific to that repertoire, which were attended to in analysing and classifying the statements of the journalists.

The materials for Article IV consisted of a set of sixteen in-depth, qualitative interviews with scientists and different types of practitioners. In order to investigate these experts’ views on public expertise in healthy eating, sixteen individuals were interviewed who all had several years’ experience of addressing people about healthy eating from an expert subject position in the public domain. Eight of these were academic researchers – six nutrition and food scientists, and two social scientists who perform nutrition and food related social scientific research. Eight of these actors could be labelled as “field experts” (Setälä & Väliverronen, 2014) who work in the field with laypeople as experts; in this case giving people practical advice concerning healthy eating. The field experts were not chosen to represent a certain occupational group, but on the grounds that they have experience in acting as public experts in matters related to healthy eating, and addressing people from such a subject position. Five of these field experts had an educational background in nutrition and food sciences, and worked as dietitians or as nutritionists. In addition, one medical doctor, one health coach and one personal trainer were interviewed. However, regarding the academic researchers’ accounts, the analysis focused on the accounts of the nutrition and food scientists. In the case of the field experts, the focus was on the accounts of the dietitians and nutritionists. This choice was purposefully made to focus on the public expert role identities of scientists and scientifically trained professionals with academic linkage of some sort to nutrition and food sciences specifically. It is noteworthy that both groups also speak in public from a position of established, credentialed experts and that they are centrally relied upon for science-based dietary advice when acting as public experts, although they differ as occupational expert groups.

The interviews were conducted between June 2014 and February 2015. The interviews lasted between 60 to 120 minutes, and were recorded and transcribed to text documents for analysis. These were semi-structured, in-depth interviews in which the interviewees were asked about their experiences of acting as public experts, and about their views of knowledge and expertise more generally in the context of healthy eating as a public issue. The guiding idea was to get the experts to reflect about their own role as public experts, to discuss their stance towards other actors who address the public from an expert subject position, and to reflect about the role of experts more generally in public discussions about healthy eating. The interviewees' responses were approached as accounts (Scott & Lyman, 1968), and therefore the views and definitions given by the interviewees were considered, not simply as descriptions of the specific public expert role identities of the individual experts interviewed but in terms of performative social action in which different types of public expert role identities are accounted for and are enacted. In analysing the interviewees' responses, the contingency of boundary drawing (Gieryn, 1999) – that is, that the actors' attribution of characteristics to their own practices and competences can vary and be flexible – was taken as an important heuristic notion. In the analysis, specific focus was on how the interviewees' carve role identities through boundary-work (Lam, 2010) as they navigate the science-public boundary. Based on this, three public expert role identities were identified: objectivity-oriented, explanation-oriented and engaged expert.

4 SUMMARY OF THE FINDINGS

In this chapter, I provide a summary of the findings of the four original articles that comprise this dissertation. All of these articles, for their part, tackle the research question presented in the Introduction: *how expertise is constructed, negotiated and judged, and in what ways this relates to the expansion of expertise, in the contemporary public sphere*. All of these articles are theoretically grounded in the relational approach in the social study of expertise (see section 2.3. and its subsections), and the findings of the articles further contribute to this literature by making explicit ways in which public expertise is relationally shaped from different perspectives. To be clear, this chapter focuses mainly on presenting each of the original studies' empirical findings and key insights in a concise manner so that these can be grasped clearly, whereas the discussion and the conclusion chapter move on to discuss the results of these articles on a more abstract, theoretical plane. Furthermore, the complete analyses are to be found in the original articles.

4.1 ARTICLE I: INTERACTIVE FRAMINGS AND THE CONSTRUCTION OF EXPERT-LAY INTERACTION IN A PUBLIC ENGAGEMENT WITH SCIENCE EVENT

Article I provides an insight into how expert-lay interaction is constructed and how the relation of authority is negotiated at the level of interaction (order) between the expert speakers, lay participants, event facilitators and moderators. The analysis focuses on the interactive framings at an informal PES event about climate change aimed at young (lay) people that was held during the 2011 Science Forum (Tieteen Päivät) in Finland.

As a central finding, Article I identifies four ideal-typical interactive frames within the event: theatre, education, participation and play. The theatrical frame had much to with the organisation and staging of the event with the invited panellists seated behind a desk speaking through a microphone. The lay audience did not have access to microphones. This resulted in rather monologic performances by expert speakers to the audience that upheld an interactional expert-lay divide and a role for the lay audience to participate primarily indirectly by reacting to what was said on the stage. In the education frame, expert knowledge was authoritatively communicated to the lay audience who were considered to be in need of more or of a new kind of expert knowledge, or who indicated that they wanted to learn more about the issue discussed at a given moment during the interaction. In the participatory frame, egalitarian discussion about the topic at hand – implications of climate change in everyday life – was encouraged between all the participants. This functioned in the event as a normative meta-frame of interaction as rational civic discussion. However, this also led the facilitators to sanitise audience efforts to take part in the discussion when their comments were not considered to fit as part of rational, civic deliberation. In contrast to the other interactive frames, the play frame was rather evoked by some of the lay participants in the online chat of the event by contributing playful and confrontational commentaries to a discussion on their own terms, and not just conforming and reacting to the expert-led discourse of the event. This was a way to negotiate the dominant structure of interaction favouring expert speakers and to resist the control imposed by facilitators over commentary that did not fit the civic mode of the discussion.

Through the identification of these multiple interactive frames within the event, Article I shows that although PES events commonly aim to expand and “democratise” expertise, and to avoid attributing epistemic authority only to invited expert speakers, at the interactional level, some framings (theatre, education) can still involve a more hierarchical interaction order, which mainly maintains the epistemic authority of the expert speakers. Moreover, the article highlights that while the participatory interactive framing entails a normative ideal of egalitarian discussion and aims to overcome the expert-lay dichotomy, the interactional mode of rational discourse and civic deliberation in this framing rather contributes to maintaining an epistemic hierarchy as (lay) commentary unfit for this interactional mode is easily sanitised. The identification of the play frame in Article I makes especially explicit how this way of challenging and shifting the mode of interaction by participants in PES events works as a way of negotiating expert-lay dynamics and epistemic authority at this type of event.

4.2 ARTICLE II: EXPERTISE AND CREDIBILITY CONSTRUCTION IN THE DIETETIC BLOGOSPHERE

Article II demonstrates how six highly popular nutrition counselling (PNC) bloggers establish credibility for their claims and public authority for themselves as they advocate a more individualistic understanding of healthy eating. The article also shows how the rhetorical resources they draw upon differ and contrast with those of two experts who contribute to the blog of the National Institute for Health and Welfare (NIHW). Therefore the article crucially makes explicit the relational dynamics and dialectical construction of dietary understanding and authority in the Finnish dietetic blogosphere.

The central finding of Article II is the identification of three strategies of credibility construction by the PNC bloggers, and the rhetorical resources drawn upon within these strategies, as well as how the NIHW bloggers credibility construction compares and relates to these. The first strategy was that of appealing to personal experience in which personal dietary experiences were constructed as epistemically valuable. In this strategy, the PNC bloggers drew upon the rhetorical resource of the humble servant to position themselves as individuals who aim to discuss mundane dietary problems with other individuals and aim to solve these together with their readers. However, the PNC bloggers utilised their personal experiences in an exemplary way to construct dietary advice based on their experience authoritative for the readers. This was done especially by utilising the rhetorical resource of narratives of rebirth to convey how the PNC bloggers had themselves made mistakes in their eating practices, but, importantly, also learned important lessons about healthy eating and the body based on making such mistakes and having experienced problems. The NIHW bloggers also referred to personal experiences in their writing, but these were decoupled from knowledge claims made about healthy eating. By contrast, for the PNC bloggers, appealing to personal experiences was crucially epistemic. They were communicated as exemplars that convey and construct dietary knowledge, and show the bloggers as knowledgeable on healthy eating based on personal experience and growth.

The second strategy was to indicate a cultural struggle, which figured prominently both in the PNC bloggers' and NIHW bloggers' argumentation. For the PNC bloggers, indicating cultural struggles functioned as a way to support their argumentation and to enhance their public authority by positioning themselves in relation to traditional health promotion institutions as freedom fighters for dietetic individualism. Central to this relational argumentation was an appeal to common sense as a rhetorical resource. The PNC bloggers displayed their views and claims in terms of dietary common sense and thereby relevant for consideration in daily life, whereas opposing population-based understanding of healthy eating was implied to be abstract and alienated from mundane individual concerns, and thus it is better to rely on the kind of dietary common sense advocated than on traditional nutritional expertise. The PNC bloggers also utilised cultural narratives that introduced actors and ideas alternative to traditional nutritional authorities and understanding to the stage of cultural narratives about healthy eating, for example, by contrasting dietary common sense in French food culture with the nutritional understanding of registered dietitians. This also worked as a way of downplaying traditional nutritional expertise as abstract and opposed to dietary commonsense in food cultures, and to show the PNC blogger, by contrast, as a provider of public dietary advice acknowledging the value of such commonsense in considering healthy eating. In their argumentation, the NIHW bloggers also made reference to cultural struggles over healthy eating and maintained their authority by conveying such struggles as highly problematic. By drawing upon civic responsibility as a rhetorical resource, the NIHW bloggers appealed to the readers as health-conscious citizens who should see through opposing dietary claims in public debates over healthy eating and who realise the benefits of adhering to the advice provided in nutrition recommendations by traditional nutritional experts, such as themselves.

The third strategy was to redefine authority by which the PNC bloggers appropriated science and quantification as rhetorical resources to evoke the authority of science in constructing credibility for their individual-oriented argumentation and advice. Whereas the NIHW bloggers drew upon science and quantification as resources to support population-level claims concerning healthy eating, the PNC bloggers rather attributed authority to single scholars and studies that provided support to challenge population-level recommendations and nutrition institutions as authorities and for more particularistic arguments. The PNC bloggers also appropriated scientific terms and language in credibility construction to convincingly present advice concerning dietary changes and personal health. The authoritativeness of quantitative information was also linked by the PNC bloggers to information gained through personal health measurement devices and tests, which these bloggers portrayed as valuable in how they have used, and their readers can use, quantitative information to consider their individual diets. Such quantitative information was also often represented in critical relation to the authoritativeness of population-level nutrition advice (e.g. concerning recommended intakes) based on national nutrition recommendations.

Article II thus demonstrates how popular nutrition counselling bloggers, as social actors who are not traditional scientific experts, construct credibility for a more individualistic understanding of healthy eating and simultaneously construct public authority for themselves as authoritative figures who can provide advice for their readers based on such an understanding. The findings of the article make especially explicit how the PNC bloggers' credibility construction strategies crucially work in a dialectical relation to universalistic, population-based understanding, as well as how the NIHW bloggers argumentation and credibility construction, as institutional nutrition authorities, work and compare to the PNC bloggers' identified strategies. Article II notably highlights how, for the PNC bloggers, dietetic individualism is an encompassing epistemic stance in which personal experiences and other practical and particular knowledge are valued alongside scientific knowledge. Regarding this, it is also emphasised in the article how the PNC bloggers' individual-oriented communicative approach and tactics are thereby in line with this epistemic stance in their credibility construction, whereas when the NIHW bloggers made references to personal experiences, these were decoupled from epistemic issues concerning healthy eating.

4.3 ARTICLE III: JOURNALISTIC JUDGEMENT AND THE SOCIAL SHAPING OF EXPERTISE – FINNISH JOURNALISTS' ACCOUNTS ON JOURNALISTIC JUDGEMENT OF DIETARY EXPERTISE

Article III scrutinises Finnish journalists' accounts on how they judge expertise and use expert sources in the context of healthy eating, and thus come to socially shape dietary expertise, and its public recognition and understanding, in the contemporary public sphere.

In Article III, four different interpretative repertoires are identified, in which each journalistic judgement of expertise in the context of healthy eating is accounted for, and constructed, in different terms by the interviewed journalists. The routine repertoire conveyed a distancing stance in which the journalists attributed the judgement of expertise and expert source selection to sourcing routines and story construction conventions in crafting health news. Such routine journalistic work practices set out to prioritise nutrition scientists and credentialed nutrition professionals as types of official expert sources and to differentiate between lay and expert sources. However, on closer inspection, the journalists' descriptions and rhetoric, for example concerning differentiating between expert knowledge and lay experience of health, in this repertoire were indicative of how journalistic work routines do not simply dictate such prioritising and ordering of sources, but rather how deference to the cultural authority of science and biomedicine is inscribed into the routines of healthy eating news coverage and sourcing. In the pluralistic repertoire, the journalists accounted that, as healthy eating is a broad, multifaceted issue that touches upon the practical and the mundane, journalists commonly need to attend to other sources and ways of knowing alongside nutrition scientists, such as the different types of practitioners who work in the area of healthy eating who can often provide valuable advice based on practical experience. Therefore, this repertoire conveyed how considering and consulting different forms of dietary expertise and knowledge is not generally thought of as problematic in journalism.

In the service repertoire, the journalistic judgement and use of expertise was accounted for in a saliently commodified sense in how there is a need for the journalists to consider how the consulted sources' expertise serves, and can be made relevant to, the specific concerns of active seekers of health knowledge who aim to improve their dietary practices with the help of the expert advice provided. The interest repertoire essentially conveyed how interest considerations are involved as journalists choose expert sources and consider their expertise. This repertoire allowed the journalists to emphasise how all kinds of potential interests warrant journalistic attention when sources are consulted for expert commentary and advice. The interviewed journalists portrayed this as crucial because healthy eating is a topic permeated by commercial interests, but also by governmental and institutional health promotion interests, all of which journalists need to consider critically and keep in check when considering sources' claims to expertise and their propositions as expert sources.

Through the identification of these four repertoires, Article III makes explicit how expert source selection and consideration of the expertise of sources by journalists exceeds the issue of recognising and considering the sources' technical expertise in reporting about healthy eating. Regarding this, the article demonstrates how journalistic judgement of dietary expertise is influenced by routine deference to the cultural authority of science and medicine in health reporting, and by considerations over expert sources' interests, as well as how the expert sources' advice addresses the concerns of active seekers of health knowledge. Furthermore, Article III also highlights how the identification of the different repertoires elucidates tensions in the journalistic judgement of dietary expertise, and how such tensions can influence how journalists come to consult sources as experts and socially shape expertise in the public sphere. It is pointed out in the article how, for instance, the interest repertoire identified convey the importance of critical journalistic considerations over potential interests involved in sources' claims to expertise and in their advice. However, the article emphasises how in tension with this is how journalistic consideration of dietary expertise from a service perspective can effectively lead to eschewing such considerations and to rely on sources who are able and willing to address popular diet concerns, as well as to attribute responsibility for health outcomes from dietary advice provided to the sources consulted as experts and for the readers who attend to the advice provided. It is therefore posited in Article III that service considerations can also expand the spectrum of expert sources and expertise consulted, because whereas scientific experts, such as nutrition scientists, can easily question the relevance of some popular dietary concerns, practitioners and other social actors can be more willing to provide, and are accustomed to providing, advice addressing these concerns.

4.4 ARTICLE IV: CONSTRUCTION OF PUBLIC EXPERT ROLE IDENTITIES AND EXPERT AUTHORITY

Article IV illuminates scientists and scientifically trained professionals' construction of role identities as public experts on healthy eating through identity- and boundary-work by analysing their interview accounts. The multiplicity of public expert role identities and the normative orientation of these enacted role identities, which reflect different views of the role of experts and expertise in society, are made explicit. The findings point to the centrality of enacting and maintaining epistemic authority within the different public expert role identities identified.

In Article IV, three public expert role identities are identified, and it is elaborated how these are constructed based on an analysis of the interviewees' accounts. The objectivity-oriented public expert role identity entailed expressing an explicitly distanced, authoritative relation to the public as an epistemic authority who passively disseminates expert advice grounded in scientific evidence to the public. Central to the enactment of this role identity was especially displaying an ethos of disinterestedness in which passively providing research evidence or clinical guidelines, and neutrally evaluating claims presented as an expert, for the public were emphasised when describing oneself as a public expert and how experts should communicate in public. The appeal to disinterestedness in constructing this expert role identity was also saliently relational in boundary-work in which a strict contrast was drawn between political commentary, which was portrayed as subjective and opinion-based, and providing evidence-based expert advice to the public, which was portrayed as a non-subjective activity. Objectivity-orientedness was further conveyed by emphasising a lack of interest in seeking publicity as such, and rather being involved as an expert in commenting on healthy eating for the media and in other public arenas out of a sense of duty and to fulfil the external demands of public engagement. Characteristic in conveying this role identity was also the view that public expertise is continuous with professional expertise. What was described as important in acting as a public expert was the ability to communicate substantial expertise that one has developed on specific issues rather than any need to adapt to the requirements of the media or the expectations of the public. It was also highlighted how it is better to refrain from commenting on dietary issues falling outside the scope of one’s substantial expertise, which highlights adherence to commenting based strictly on substantial expert understanding by contrast to social actors who do not acknowledge the limits of their expertise in this manner when commenting on dietary issues in public. Epistemic authority to provide public advice concerning healthy eating was thus anchored to disinterestedness, professional competence and acknowledging the scope and limits of one’s competence.

By contrast to the objectivity-oriented role identity, experts who conveyed an explanation-oriented role identity expressed intrinsic motivation to act as a public expert. Emphasis was put on how it is enjoyable and rewarding to explain nutrition and diet related issues to the public, although an extrinsic sense of social duty, such as having received public funding as a scientist, was also expressed. An ethos of rationality – that is, a salient emphasis on upholding scientific rationality as a public expert – was also central in enacting this role identity. References to social and moral duty in conveying the explanation-oriented role identity were notably also linked to mentions of how public discussions about healthy eating are permeated by, what the experts conveying this role identity perceive as, distorted knowledge and contending expertise. Therefore, it was emphasised how, especially for this reason, it is important to take part in public discussion and to be available for the media to consult as an expert to counter these views. Such relational identity work crucially functions to construct an expert role identity as an active agent whose expert explanations ”balance” what they perceive as distorted knowledge claims or unfounded claims to dietary expertise in public discussions. Emphasis on exposing how one-sided special interests can be involved in some claims to dietary expertise in the public sphere, as well as on debunking dietary “myths” through corrective explaining as an expert, were also prominent in conveying and enacting the explanation-oriented public expert role identity. Although conveying this role identity involved expressing how it is not enough to merely communicate substantial expert knowledge to the public when acting as public expert, epistemic authority and capacity to act as a public expert was still anchored to mastery in the provision of science-based explanation and commentary to the public.

The third public expert role identity, the engaged expert, was characteristically constituted by an ethos of service, in which emphasis was put on engaging with common, practical dietetic issues brought to public discussion, and to providing people with practically useful expert advice to help people to deal with such issues. Intrinsic motivation was also signalled and coupled with the ethos of service, which involved expressing personal dedication and passion to communicate about healthy eating with the public to be of help as a public dietary expert. Narrative competence was also centrally emphasised as an important ability in enacting the engaged expert role identity, as narratives were portrayed as important in providing engaging and relatable expert advice. Furthermore, emphasis on narrative competence and the role of narratives in engaging with the public also importantly convey an expert persona who does not aim to delete or distance oneself from the expert advice provided, but rather who acknowledges the uses of the storytelling format in expert communication and strives to act as a relatable character whose advice the public can identify with. The engaged expert role identity was also enacted in relation to a public expert role in which the aim is merely to disinterestedly disseminate general advice grounded in research evidence and guidelines, which was portrayed to fail to lead to successful engagement with the public. Thus, the engaged expert role identity contrasted with the objectivity-oriented public expert role identity identified and involved relational identity work with respect to that kind of public expert role. Moreover, experts who conveyed the engaged expert role identity also engaged in relational boundary-work with respect to social actors who claim dietary expertise based on personal experience in public. In this boundary-work, emphasis was placed on one's cumulated and scientifically informed expert understanding, which social actors claiming expertise merely on grounds of personal experience were indicated to lack, in addition to them being portrayed as somewhat emotionally invested in their dietary experiences and claims. The enactment of the engaged expert role thus involved double boundary-work for purposes of identity construction and maintaining epistemic authority in which different characteristics were attributed to the engaged expert identity to demarcate it both from a distant, objectivity-oriented public expert position and from the position of experiential expertise grounded primarily in personal dietary experience.

Article IV highlights how different public expert role identities are relationally carved as experts situate and consider their role with respect to the public, and to other ways of acting as a public expert and having claims to expertise. It also points out how public expert role identities that entail a move away from the position of distant expert authorities in public – the explanation-oriented and engaged expert role identities – also involve upholding epistemic authority, despite the more public-oriented stance of acting as an expert in public. Furthermore, Article IV illuminates experts' active negotiation and management of what is the experts' role and how to act as an expert in public discussions over such issues as healthy eating which have relevance to everyday life, and where pressure is also exerted to established experts to take part in the discussions with the public and to provide expert advice.

5 DISCUSSION AND CONCLUSION

This dissertation investigated and provided insight to the constructedness and expansion of expertise in the contemporary public sphere through empirical inquiry. The four empirical articles approached this issue by focusing on the different areas of public engagement with science events (Article I), the blogosphere (Article II), journalism (Article III), and experts' own views and understanding of their role as public experts (Article IV). Having investigated the issue from such different vantage points, theoretically relevant common threads in the constructedness and expansion of expertise in the contemporary public sphere can be usefully identified and illuminated based on the results gained from the articles. This final chapter moves to discuss these common threads on a more theoretical plane and in relation to the literature presented in Chapter 2.

5.1 EXPERIENCE AND EXPERTISE IN THE CONTEMPORARY PUBLIC SPHERE

One of the key aspects in Collins and Evans' normative theory of expertise is the focus on experience as a constitutive feature of expertise – due to which they also often talk about their approach as "studies of expertise and experience" (e.g. Collins & Evans, 2002; 2007). Collins and Evans' emphasise experience as constitutive of expertise in the sense of technical ability and skills gained by social actors through experience within technical domains. The results of this dissertation also indicate that the issue of experience is crucially tied to expertise and its expansion in public arenas. However, based on the results, it is argued here that key to how expertise is established, and to how it is judged and negotiated in the contemporary public sphere, is how experience and knowledge grounded in it are made and assessed to bear practical relevance to the intended public and to daily life. This way of how experience is drawn upon by social actors claiming expertise, and considered by those mediating expertise and attending to expert advice, also contributes to the expansion of expertise in the contemporary public sphere in terms of the emergence of new types of social actors, such as popular bloggers, as public authorities on science-related issues of everyday relevance (Article II). Moreover, it also contributes to the use of such new and more various social actors as experts in providing expert advice to the public (Article III).

As demonstrated in Article II, for example highly popular diet bloggers construct their epistemic authority in relation to their readers by appealing and attributing epistemic value to their personal experiences of what kind of diet works in daily practice than by making reference to or by displaying technical competence, or lack of thereof, in nutrition. They actively establish themselves as authoritative by appealing to and sharing their personal dietary experiences, and the understanding they have gained through these, in an exemplary fashion and as something epistemically valuable for their readers to consider concerning their daily dietary practices and experiences. Article III makes explicit that journalists also tend to consider and utilise sources who can provide advice to readers concerning how to deal with actual dietary predicaments in daily life based on practical experience as useful expert sources on healthy eating alongside nutrition scientists who are commonly prioritised as medically authoritative sources. Therefore, if journalists consider sources to be able to provide practical advice on dietary issues based, for example, on counselling or personal experience such sources can get consulted for dietary advice regardless of whether they have expert credentials or demonstrable medical authority.

The findings (Article IV) also theoretically complement previous relational literature on the constructedness of public expert roles and identities (Rijswoud, 2012; Rijswoud, 2014; also Davies & Horst, 2016) by highlighting how situating and drawing connections to the public's everyday experience plays a role in the construction of public expert role identities of scientists and scientifically trained professionals who are more typically considered and consulted as epistemic authorities due to their scientific understanding and competence. As elaborated in Article IV, science-based experts who embrace an engaged expert role identity as public experts consider it important to be able to provide tangible expert advice with respect to the everyday experiences and concerns of public. Moreover, they also emphasise the importance of doing this in such a way, for example in narrative form, that both the content of the advice and the expert as a provider of the advice become relatable for the public. This highlights that whereas science-based experts who embrace an objectivity-oriented role identity as public experts conceive and construct their role in terms of acting as distant epistemic authorities by placing emphasis on passive dissemination of scientific evidence and guidelines, engaged experts do not seek to distance themselves from, but to rather to establish proximity to, the everyday experience of the public as a way of striving for public relevance and authority. Supporting a notion by Bart Penders (2014), Article IV similarly makes explicit that because engaged experts crucially ground their public expert role identity on the need to engage with the everyday experience and lifeworld of the public, they move on similar ground to various popular authors and bloggers who also place emphasis on the experiential. However, expanding on this notion, Article IV also demonstrates notably how the engaged experts also actively construct their role identity as public experts through protective boundary-work in relation to these kinds of social actors' who claim epistemic authority primarily by virtue of experiential understanding.

Therefore, the findings of this dissertation also contribute to and complement more general theoretical notions in previous relational literature on the uses and role of experience in how expertise is constructed in public contexts (e.g. Wynne, 1992; 1996; Epstein 1995, 1996). The findings add to theoretical notions concerning experience and expertise in this literature by highlighting how making knowledge grounded in practical and personal experience bear relevance to the everyday experience and considerations of the intended public is central to how expertise is relationally constructed in public. The findings testify to this relational aspect both in how the epistemic authority of new and more varied types of social actors, as well as the engaged expert role identity of established science-based experts as public experts, are constructed.

5.2 INDIVIDUALISATION, CONSUMERISM AND PUBLIC EXPERTISE

In addition to establishing relevance to the intended public's everyday experience and practices, the findings of this dissertation have also evidenced two other important ways in which individualisation, and how this relates to consumerism, relates to the constructedness and expansion of expertise in the contemporary public sphere.

First, the findings show how both new types of social actors who actively aim to establish themselves as authoritative in public, and established science-based experts who embrace an engaged expert role identity as public experts, centrally adhere to a more service-oriented ethos and approach as providers of expert advice to the public (Article II, Article IV). A way of striving for and constructing public authority, central to this service-orientation is not talking down to the public, but striving to be of help as an expert and to provide advice related to actual concerns of individuals. This shifts the dynamic from telling the public how things are to answering and solving together common concerns and predicaments raised by individuals. The findings (Article III) also demonstrate that, in the context of issues where expertise pertains to everyday life, such as healthy eating, journalists may also consider expertise in the clientelist terms of how the experts consulted can serve to provide advice directly addressing and being useful for active individuals seeking expert advice on making consumption choices. This, in turn, feeds into the social shaping and expansion of expertise in that, especially when journalists find it crucial to address the concerns of active consumers, social actors who are willing and oriented to provide actionable advice addressing such concerns can be favoured as expert sources instead of sources who are not willing to do so, or who come to question the relevance of such concerns.

Second, the findings also theoretically complement previous notions about the role of appealing to individuals in constructing expert authority in public (Shapin, 2007a; also Penders, 2014) by demonstrating the dialectical nature and dynamics of how appeals to individuals work in critical relation to the authority of expert institutions and institutional expert advice to the public (Article II). Article II especially makes explicit two important aspects regarding this dialectical dynamic. It shows how the popular diet bloggers studied in the article, as new types of actors striving for dietary authority, present quantitative information gained through personal health measurement tests as valuable for individual dietary considerations and in critical relation to the authoritativeness of abstract, population-level nutrition guidance by institutional expert authorities. Furthermore, it shows how these popular diet bloggers constructed a sense of a kind of moral community with their readers as individuals who take control of healthy eating and who think for themselves, instead of relying on institutional guidance, and, for whom the bloggers are seen as authoritative freedom fighters for the community to follow. However, in positional contrast, the institutional expert bloggers studied in Article II notably appealed to their readers as health-conscious citizens who should realise the benefits of adhering to institutional dietary guidance and should not be deceived by opposing claims and the authors presenting them. Identification of these aspects also further indicates how expertise in the contemporary public sphere extends beyond the issue of the technical expertise of social actors (Collins & Evans, 2007; Collins, 2014) in terms of how this kind of broader dialectical dynamic, that has to do with individualisation and the authority of expert institutions, figures in the struggle over, and construction of, expertise and public authority. Moreover, at a more general level, the identification of these ways in which expert authority is dialectically constructed arguably adds a new kind of theoretical and methodological perspective to the relational construction of expertise in the public sphere and how to study it.

5.3 THE ROLE OF RATIONALITY AND INTERESTS IN THE RELATIONAL CONSTRUCTION OF PUBLIC EXPERTISE

This dissertation also illuminates how rationality and interest considerations are involved in the construction and expansion of expertise in the contemporary public sphere. As for the role of rationality, the results make explicit two important aspects of how rationality, and the effort to uphold it, figure in the relational construction of public expertise.

First, Article I contributes to previous notions on how rationalist underpinnings influence interaction and participation in PES events, which function as one of the central contemporary public arenas that aim to actively bridge the expert-lay divide and expand expertise by engaging the public as knowledgeable participants (Kerr et al., 2007; Horst & Michael, 2011; Michael, 2012; Davies et al., 2012; Davies, 2013; Davies, 2014). Article I provides a further theoretical and methodological perspective on this by showing how rationality figures in the relational construction of epistemic authority and the dynamics of expertise in these types of events. Regarding this, it especially makes explicit how an effort to achieve rational discussion and deliberation in dominant, intended framings of social interaction in PES events constructs relations of epistemic authority between participants, although these events might otherwise actively aim to work on the basis of a more expansive notion of expertise and to dissolve epistemic hierarchy. However, Article I also shows how participants' efforts to engage through more agonistic and affective modes of discussion are a way of countering such rationalist interactional tendencies and framings, and to negotiate epistemic authority. Participants' playful and affective commentary can work to indicate the abstract nature of the rational expert discourse upheld by dominant interactive framings, and that expert commentary and propositions should instead be tangible with respect to the daily experience and concerns of the participants to gain authoritativeness and relevance. These notions make explicit how the negotiation of expert authority in PES events can centrally have to do with challenging the dominant rationalist stance on expertise and social interaction in these events, rather than with challenging the technical understanding or competence of the expert speakers, or scientific expertise in general.

Second, Article IV demonstrates how an ethos of rationality centrally constitutes how such visible scientists and scientifically trained professionals who embrace an explanation-oriented role identity as public experts centrally conceive and construct their role in terms of a need to uphold scientific rationality in public arenas and to counter unfounded or problematic knowledge claims and "myths", concerning, for example, diet in the context of healthy eating. Embracing the explanation-oriented role identity is, then, also a way to orient and position as a public expert in the contemporary socio-cultural climate – where a variety of knowledge claims circulate concurrently and are considered by individuals in relation to their experience – through attachment to scientific rationality as a response (see also Horst, 2013). This highlights the relational nature of how experts embracing this role identity consider public expertise in terms of upholding rationality in relation to knowledge claims perceived as irrational or unfounded, and to social actors claiming expert authority who make such claims in public. It also demonstrates one further aspect of how science-based experts' considerations over and approach to acting as public experts exceed the issue of merely tackling specific technical questions or substantial matters of relevance emerging from within science. At a more general level, Article IV thus provides a theoretical perspective on how idealistic considerations over the role of scientific knowledge and upholding scientific rationality in public regarding issues having relevance in everyday life can play a constitutive role in how established, science-based experts consider and come to construct their role as public experts.

Regarding the role of interests, this dissertation complements previous notions of moral aspects related to the constructedness and public recognition of expert authority (e.g. Shapin, 1994; Shapin, 1995b; Shapin, 2003; Shapin, 2004; Epstein, 1996; Epstein, 2011) especially by having demonstrated how the ethical and moral issue concerning expertise and special, or personal, interests is centrally involved in how journalists, as mediators of expertise and expert advice to the public, consider expertise (Article III). This dissertation also shows how this issue is involved in how some science-based experts conceive and construct their role identity as public experts (Article IV). As for the latter, the elaboration of the objectivity-oriented public expert role identity in Article IV supports the notion (see especially Shapin, 1994) of how appealing to and displaying disinterestedness, that is, that one is impartial and does not have any personal vested interest in the production and communication of knowledge, can work centrally as a way to establish and maintain epistemic authority in public. However, Article IV draws particular attention not only to the aspect of how disinterestedness is displayed to the public regarding specific issues but also to its role in the active enactment of the objectivity-oriented role identity in relation to other, more subjective ways of orienting and acting as a public expert by way of placing emphasis on passivity, neutrality and purely external motives when it comes to providing expert advice in public, and through boundary drawing in relation to forms of commentary and engagement that involve subjectivity by portraying that these belong to the sphere of the political.

Article III importantly shows how regardless of the credentials or knowledgeability of sources claiming expertise, consideration of special interests is central in the journalistic judgement of expertise. As elaborated in Article III, interest considerations are crucial for journalists to keep the advocacy of special interests under the neutral guise of expertise in critical check in mediating expert advice to the public. It is shown in the article that journalists take this as crucial because, in the context of issues such as healthy eating where expertise is relied upon by the public for guidance regarding what to do in everyday life, it is typical that various social actors aim to advance commercial interests by appealing to expertise. However, as institutional or governmental interests can also be advanced through expert propositions, and by claiming expert neutrality, interest considerations also apply to the propositions and advice of institutional experts. This is also true for individual scientists' claims that cannot be simply approached as neutral, definitive truth claims by default, especially if the issue at hand is subject to controversy. Article III, therefore, also indicates how journalists do not approach the issue of the interests and moral authority of scientific experts and their public advice as a straightforward matter of whether to in general choose to place confidence in scientists as moral actors (see Collins, Weinel & Evans, 2010; Collins & Evans, 2017) in the case of whom interest considerations and other moral evaluation are not relevant at all. Rather, journalists approach this in terms of that, although placing principled confidence in the moral integrity of scientists, active interest considerations are also of importance when consulting individual scientists and considering their propositions so as to avoid presenting as definitive and neutral advice that might be influenced by, and aimed at advancing, extra-scientific special interests. Or, to make such potential special interests involved visible to the public so that the public can take these into account when they consider the advice provided. Interest considerations are therefore of relevance in journalism regarding the matter as to which experts to consult and to attribute with public authority (see Shapin, 2004 also on this more generally), and whether and how the consulted experts' advice and views need to be situated in relation to those of other experts.

5.4 CONCLUDING REMARKS

Through four empirical studies and further theoretical discussion and elaboration, this dissertation has provided perspectives to how expertise in the contemporary public sphere is centrally tied to the establishment and recognition of expert authority, and not just to displaying and assessing technical expertise. The key findings discussed above make explicit some of the key aspects and ways in which expert authority of both new types of social actors claiming expertise and established experts is constructed in relation to the public, and to each other, in the contemporary public sphere in the context of issues where expertise touches upon everyday life. Moreover, the findings advance an empirically grounded understanding of the expansion of expertise in the context of such issues in public life, and in society more generally.

The results demonstrate especially that a central dynamic in how expertise in the contemporary public sphere is relationally constructed is how knowledge drawn upon and advice provided are made tangible, and considered to bear relevance, in relation to individual experience and actual daily practices and concerns. However, the results also make explicit that there is not just one way, but a variety of ways, in which social actors actively establish expert authority in relation to the public, and strive to maintain it in relation to other actors claiming expertise, by navigating this dynamic. In particular, new types of social actors, but also established science-based experts embracing an engaged expert role identity can centrally strive to construct their expert authority in the contemporary public sphere by attempting to draw connections to individual experience, and to serve to address concerns emerging from the daily life of active consumers. On the other hand, other visible scientists and scientifically trained experts respond rather oppositionally to this in order to manage and maintain their expert authority in the face of such external, socio-cultural pressures over public expertise. This happens, for example, by self-distancing to emphasise their objectivity as providers of expert advice in public, or through attachment to scientific rationality and the need to uphold it.

Moreover, this dissertation has also importantly demonstrated how these issues of experience, individualisation, rationality and interests (discussed above in sections 5.1.–5.3.), that exceed the issue of technical expertise, are also central to how expertise is considered, and becomes socially shaped, in such cultural practices as journalism and PES activities that centrally mediate expertise in the contemporary public sphere. In particular, the way in which journalists as mediators of expertise judge and make use of expertise is also a considerably understudied area of arguable relevance to understanding how expertise in the contemporary public sphere is constructed. This dissertation has provided new theoretical perspective on this through identification of the role of such broader considerations, as for example interest considerations, in the journalistic judgement of expertise. As well as by contributing to how the journalistic judgement of expertise can be methodologically approached by focusing on the ways in which journalists themselves account for this, rather than attempting to focus on how journalists assess expertise specifically in terms of the technical expertise of their sources as in the substantialist, normative approach (see Boyce, 2006).

Finally, based on the findings of this dissertation, it can also be more generally argued that, when it comes to public expertise, there is need to also problematise a view of expertise either as being "real", in the sense of possessing domain-specific technical abilities, or as "relational", in the sense of being something deriving from mere social attribution, in the way suggested by the normative theory of expertise (Collins & Evans, 2007). A central issue regarding this has to do with the issue of public expertise and competence because the achievement and recognition of expertise in public arenas do not merely derive from the domain-specific technical abilities already possessed by social actors, as the findings in this dissertation also indicate. Acting skilfully and gaining public recognition as an expert on science-related public issues is arguably also attributable to abilities that can also be considered to be real, but which are not reducible to technical abilities. These abilities cannot be developed within esoteric technical domains and by interacting with other experts within such domains. One does not come to develop competence as a public expert, for example, primarily through linguistic socialisation into expert cultures, which is the means of developing interactional expertise (Collins & Evans, 2007). Instead, developing competence as a public expert requires experience of acting and commenting on science-related issues in public in a certain socio-cultural setting as an expert for the media and more directly with the public. Crucially, this develops the ability to formulate one's expert advice in such a way that it appeals to and is intelligible by the public, as well as by social actors who mediate expertise to the public. Furthermore, a competence to recognise and take into consideration the moral and ethical aspects related to knowledge-intensive public issues, as well as to reflect on and possibly make visible one's moral stance, is arguably also an important, developable competence regarding acting as a public expert.

The above notions make explicit that while possessing technical competence and understanding is certainly a real ability of use to comment knowledgeably as a public expert, these kinds of relational competencies are in no sense less real or relevant when it comes to acting as a public expert, and to establishing and maintaining expert authority in public. Such relational competencies, however, are not a kind of universal skill set which one can come to possess and then universally apply to establish expert authority. This is because these are also necessarily socio-culturally conditioned competencies and inevitably they relate to being in touch with the public and their concerns, as well as with considering the stances and actions of other social actors striving for expert authority in public.

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