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**A Decade of Applying the Capability Approach via the Choice Framework:
Practical Tools and Critical Reflections**

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1. Introduction

The capability approach offers great conceptual richness and the very existence of the HDCA demonstrates its relevance across disciplines. Hundreds of scholars have taken on the challenge of translating this conceptual richness into methodological approaches practiced in their disciplines and relevant to their field of enquiry. As a researcher I work on the use of information and communication technologies for development (ICT4D), which is a highly interdisciplinary field. Due to the nature of its focus it is frequently action-orientated and can be techno-centric, techno-optimistic, ahistorical and often lacking in theoretical reflection. I have worked in this area for 17 years and still remain inspired by the potential the ever-evolving technical tools offer for the achievement of a variety of human development goals, including better access to information, better education, better health care, better communication with loved ones, better opportunities to offer specialized goods and services to more extensive markets, gathering environmental data, spreading ideas globally and organizing for social change. It is hard to disagree today, in 2019, with Kofi Annan's 1997 statement that "Communications and information technology have enormous potential [...] in furthering sustainable development" (UN 1997).

ICTs are never neutral, they amplify human intent (Toyama 2015). Societal optimism about new digital technologies has given way to an increased recognition that the internet itself can be seen not just as a peaceful space of cooperation, but also as a battle ground in which the increased geopolitical tensions, increased technical sophistication of repressive regimes, oligopolistic commercial interests of large technology companies, and new economic models based on data harvesting are being acted out. In addition, political polarization, hate speech and online election manipulation are intersecting with social media in toxic ways.

And yet, amidst all this, digital tools also represent great opportunities for amplifying intent towards human development, and sustainable development.

Even a decade ago, the degree to which the big trends of digitization and datafication would transform humanitarian, international, and indeed social development at national level was not fully recognized by many practitioners. Today it is less the size of the change that is contentious, but the direction.

The very obvious ambivalence of digital tools being used in the service of creating more dangerous and unequal or more peaceful and just futures has brought to the fore the normative dimension of discussions about digital technologies, including in the field of ICT4D. It is my view that the capability approach, with its focus on human flourishing, wellbeing and agency freedom, and respect for the diversity of what people themselves have reason to value, offers an important normative position in these discussions. It further needs to be developed to better incorporate a concern for the environment to ensure not just human, but all species flourishing in a shared future (Rauschmayer et al. 2011).

Just over ten years ago I was inspired by the capability approach and yet daunted by the prospect of applying it in practice in mixed method social science research. I proposed the Choice Framework (CF) as a way of applying the CA in ICT4D. The framework will be briefly explained later on in this paper. It has since been cited over 680 times and applied in a multitude of studies in various countries. This short paper is not a systemic review of these studies. Instead, it will focus specifically on the challenge of applying the CF, or aspects of it, in practical and participatory action research. It will present three research situations where complementary methodologies have been developed to enable the use of the CF in a concrete fieldwork context. Each of these will be presented before a cross-cutting conclusion will be offered.

2. The original Choice Framework

The interdisciplinary area of information and communication technologies for development (ICT4D) has traditionally been accused of lacking in theory (Heeks 2006). In response, scholars offered key framings, including for instance Actor-Network-Theory, the sustainable livelihoods approach, and the capability approach. Over the last decade, the capability approach has become a key theoretical influence in this field, with early interventions from e.g. Garnham 1999, Mansell 2002, Gigler 2004, 2008, Madon 2005, Johnstone 2007, Kleine 2007, 2010, 2011, Zheng 2007, Oosterlaken 2008, Zheng and Walsham 2008, Fernandez-Baldor, Hueso & Boni 2009, Smith & Seward 2009, Buskens 2010 etc.

These, and many other later contributions introducing the capabilities approach, were enthusiastically taken up for two main reasons: Firstly, ICT4D was originally a field in which techno-optimist modernization discourses and related approaches to development were rife, indeed were dominant among computer scientists and other technical disciplines. This then created the need, the target, and the arena, for a theoretical counter-current which was strongly inspired by the capability approach, expounding the fundamental notion that development should be focused on the lives people themselves have reason to value (Sen 1999). Such a people-centred approach to ICT4D stresses the importance of individual and collective choices of local people. It poses a strong counter-challenge to the technocratic dystopian phantasies and increasingly, realities, of the digitalized future.

Secondly, the capability approach was rendered applicable, even “user-friendly” by a number of tools which were taken up by researchers from different disciplines in their information and communication needs assessments, in their co-production and design processes, in their participatory monitoring and evaluation research. One of these tools has been the choice framework (Kleine 2007, 2011, 2013), a visual representation and framework tool which emerged from ICT4D research in rural Chile. The following section will explain each element in turn and is based on Kleine (2011, 2013). Together, these elements form a picture of a system (see Figure 1), a snapshot of an ongoing process which might give clues as to which elements of the system might be changed in order to affect positive change to the process.

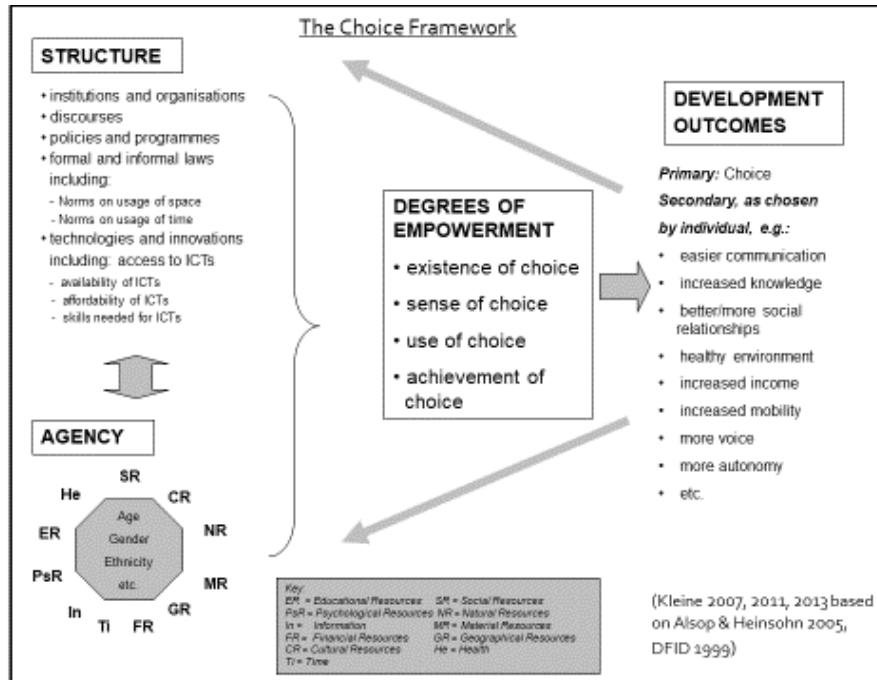


Figure 1: The Choice Framework (Kleine 2007, 2013)

Outcomes

There are primary and secondary outcomes. Sen (1999) explains how choice is both the aim and principal means of development and so choice is the primary development outcome. Secondary outcomes will vary from person to person, depending on what kind of life an individual values. True to Sen's approach, an analysis based on the Choice Framework would then work backwards: Starting from the desired outcomes as proxy for an individual's choices, it will map the systemic relationships between agency, structure and choice which have led to these outcomes or may still lead to outcomes. In addition, the qualitative data may also include mention of the hoped-for, but not achieved outcomes, thus giving an indication of capabilities.

Agency

In the systemic analysis of the Choice Framework, individuals use their agency to navigate social structures which they have co-created and are constantly co-creating (Giddens 1984). In a given social context with certain axes of exclusion, an individual's personal characteristics such as age, gender, ethnicity etc. are forcefully aligned on these axes and this can affect the scale of their

resource portfolio. Extending Alsop & Heinsohn (2005), the resource portfolio which every individual has consists of eleven kinds of resources: material, financial, natural, geographical, psychological, cultural, social, and educational resources; health; time, and information—represent an attempt to capture the agency element of the systemic framework in a holistic way. For a full definition of each of these resources see Kleine (2013). The list of eleven resources also recognises that it is not just ‘social capital’ which can be seen as ‘the capital of the poor’. There are a variety of resources which co-occur unevenly with material and financial resources, in other words materially poor people are often rich in other resources.

Sen points out that “the freedom of agency that we individually have is inescapably qualified and constrained by the social, political and economic opportunities that are available to us” (1999, xi–xii). This is an acceptance that both agency and structure matter, and we would go beyond this constraining view of structure to argue, with Giddens, that agency and structure are co-created and are constantly co-creating. As a result, both have a prominent space in the Choice Framework.

Structure

Building on Alsop and Heinsohn (2015) and the Sustainable Livelihood Framework (DFID 1999), the Choice Framework includes, under structure, institutions and organisations, policies and programmes, formal and informal norms. Since rules, laws, norms and policies are embedded in, and often emanate from discourses, discourses are included as part of the structure element. In many societies there are gendered informal norms which dictate how men and women make use of their time and which spaces they access. This can limit a person’s freedom to live the life she or he values. When analysing technologies and innovations as elements of the structure, uneven access to technology is a key obstacle. Dimensions of this access divide include availability, affordability, necessary skills and social norms.

Dimensions of choice

Individuals use their resource-based agency to negotiate the social structure, constantly making choices generally aimed at their notion of what kind of life they want to live. According to Sen, the aim of development is to expand this freedom to choose. The Choice Framework conceptualises choice in three dimensions: (a) the existence of choice—whether the different

possibilities exist and are, in principle, attainable for the individual if the combination of their resource portfolio and the structural conditions would allow it; (b) sense of choice – the subset of available choices an individual is aware of and believes that they have; (c) the use of choice— whether or not an individual actually makes the choice and (d) the achievement of choice— whether the outcome matches the choice expressed (Kleine 2007).

The choice framework expresses the capability approach by starting with people’s choices and then systematically evaluating elements of structural conditions and agency to trace through the existence, sense use, and achievement of choice. As a diagram, it has formed a kind of “boundary object” between disciplines, used for instance by ethnographers to structure their observations, by designers as somewhat of a checklist in their workshops, and by participatory researchers as a way to guide the action research. As a visual representation it has map-like qualities in helping interdisciplinary teams locate their observations and their hoped-for levers for change in the schematic representation of development processes. It has been criticized for being too complex (by some practitioners) and too simplistic (by some scholars, e.g. Tacchi 2013; Attwood & May 2015). The choice framework has been cited over 680 times and applied in over eight countries.

3. Examples of the further development of the Choice Framework

Having re-introduced the Choice Framework, this paper will now explain three further methodological innovations that built on it. They are all embedded in and emerging from concrete action research situations.

3.1 Poveda’s resource diagrams

In her boundary-pushing doctoral work, Sammia Poveda examined the effectiveness and impacts of digital literacy training courses in Brazil (2016). In this she combined a capability perspective with Freirean pedagogic approaches. Working in partnership with a local NGO, she chose two courses: Course A ran with a more traditional approach, training participants in the use of particular software, while Course B took a problem-solving approach inspired by Freirean

principles, starting by asking the participants to define problems that they felt the digital tools might help them solve, and then assisting them as active learners in using the tools to solve them.

The methodological challenge was this: How could the effectiveness of the courses be assessed from a people-centred perspective as required by the capability approach? The Choice Framework offered the framing of the 11 different resources of an individual which might increase or decrease as a result, at least in part, of the course. This allows for a comparatively holistic mapping of resources, and Poveda chose eight: material resources, geographical resources, information, time, psychological resources, educational resources, cultural resources and social resources. Each of these eight resources were operationalized through items on a questionnaire which was administered to each participant at the beginning and at the end of the course.

Poveda then used spiral web diagrams to demonstrate visually which resources had increased (or decreased) as a result, in part, of taking the course¹. The results showed that while both courses helped participants expand their educational resources, Course B performed better in terms of the increase in psychological and social resources.

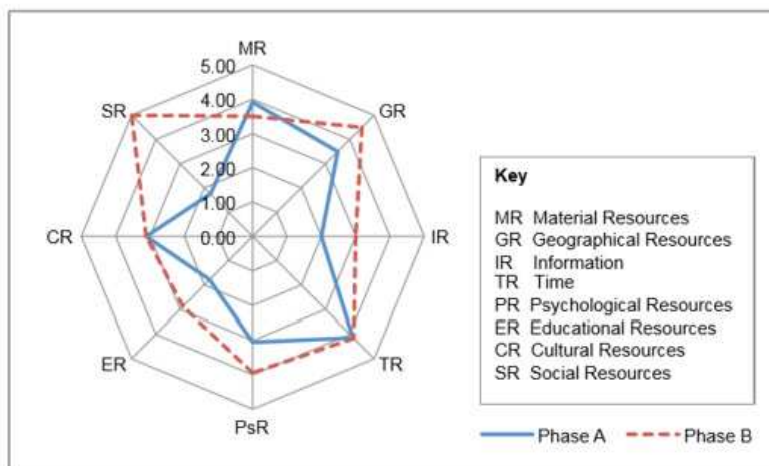


Figure 2: Spiral web mapping of resources (Poveda 2016 p.91)

¹ Changes in people's circumstances over time are rarely down to just one factor so it would not be appropriate to posit the course alone as the cause of any change.

The operationalization of the resources and their visual representation are important additions to the Choice Framework which could be useful in a variety of studies. In particular, holistic monitoring and evaluation processes which firstly, seek to include the non-material resources in the process and then secondly, seek to trace how two or more different interventions perform against their own baseline, will find these tools of great use.

For a detailed discussion of this work, see Poveda (2016)

(available for download at: <http://eprints.whiterose.ac.uk/123088/1/2015PovedaSCPhD.pdf>).

3.2. Zelezny-Green's pictograms of resources

In her highly innovative doctoral research, Ronda Zelezny-Green (2017) explored the possible use of open educational resources for girls growing up in informal settlements in Nairobi. In participatory action research with the girls and their teacher, and in partnership with a girls secondary school, she introduced interested girls to a free app which allowed them access to textbooks and other books on their simple mobile phones (feature phones). These proved useful to the girls as they were pressed for time between their commute to school (by foot or bus), time in school, extensive household chores expected of them (but not of their brothers), homework and sleep. Reading the books was possible for them for instance while they were stuck waiting for buses and in traffic jams, thus saving them time. Zelezny-Green took a capabilities perspective to the work and explored the aspirations the girls had and the doings and beings they valued. The study used the Choice Framework to explore, in ethnographic work guided by the framework, the life situation of the girls, the structural constraints they experienced, but also the resources (material and non-material) that they could draw upon.

The methodological challenge was this: The researcher intended to use the Choice Framework in a participatory action research workshop, hoping to discuss each in turn with the group of girls. So firstly, Zelezny-Green opted for a visualisation of the resources and aimed for a pictogram of each. However, resources like psychological resources were abstract and not easy to visualize. For others, such as cultural resources, the respect for cultural diversity inherent in the capabilities approach also called for a culturally specific interpretation of these. In the process, Zelezny-

Green asked the girls themselves to propose what images should be used to illustrate the resources (see figure 3).



Figure 3: Resource pictograms developed by the girl learners (Zelezny-Green 2017 p. 152)

This culturally sensitive visualisation of the resources is a very useful addition to the Choice Framework and will be of particular interest to action researchers hoping to include the participants in a systemic analysis of the status quo and possible routes towards positive change.

For a detailed discussion of the work, see Zelezny-Green (2017) (available to download at:

https://pure.royalholloway.ac.uk/portal/files/28084955/Zelezny_Green_Ronda_PhD_thesis_May_2017_Final.pdf).

4. Developing a simplified Choice Framework tool

After the publication of the book discussing the Choice Framework (*Technologies of Choice?* published in 2013 by MIT Press) I was approached by the South African Council for Scientific and Industrial Research (CSIR). They found the Choice Framework highly pertinent to their work in ICT4D, in e-agriculture and in digital literacy training, and invited me to come as a Scientific Advisor and collaborate on a project to try and implement, in some form, the Choice Framework in their ICT4D work. During a month-long field visit it became clear that there were opportunities in firstly, applying the CF as a tool in the planning phase of projects and secondly,

in the evaluation phase of projects. The ambition was to, wherever possible, include local people and intermediaries in the planning and the evaluation work.

The specific case was a secondary school in a poor rural area of South Africa where there had been a project in which selected students had been offered training in agricultural entrepreneurship based on blended learning in both online and offline formats. This included digital literacy training. The project had been a pilot and it was to be evaluated for its strengths, weaknesses and impacts before there could be any extension or scaling up.²

It soon became clear that while in interactions with other academics, with designers and with engineers, the CF in my experience is understandable to the right level of conceptual sophistication, for busy practitioners locally (the CSIR employees implementing the project, the local project manager, teachers and local leaders) the CF needed to be simplified.

In the following participatory reflection workshops with first teachers and local leaders and secondly CSIR employees and consultants, a much simplified tool, based on the CF was developed and tested (see Figure 4).

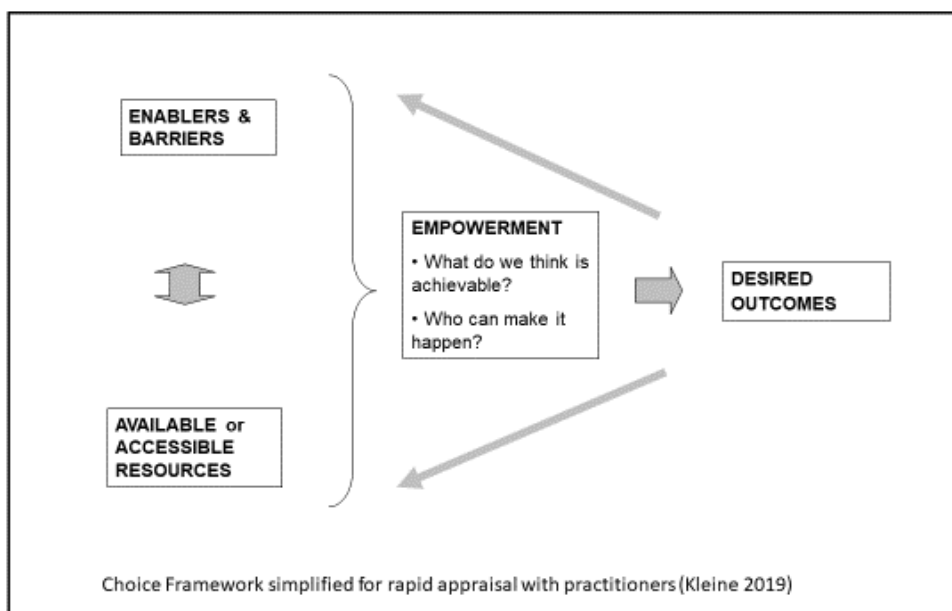


Figure 4: Simplified Choice Framework tool

² While the conceptual work on the tool was the author's own, I would like to extend a big thank you to Mario Marais, Sifiso Dlamini, Marlien Herselmann and their colleagues at CSIR for the many valuable discussions in the process of piloting and refining it.

One of the workshops took place at the end of a project intervention as a form of participatory evaluation of the work and a stock-take for next steps. The second took place as part of the design phase of a project. The tool was applied as a way of building and visualizing on a wall, step-by-step, a picture of a desired change process.



Figure 5: At the workshop with teachers and local leaders which used the simplified Choice Framework tool

Step 1: Desired Outcomes

Like the original CF the simplified CF tool asks, as a starting point, what the desired development outcomes of the local “beneficiaries”/participants themselves are. This is of course fully aligned with the CA, and consequently with the CF focus on development as expansion of people’s substantive choices to lead the lives that people themselves have reason to value (Sen 1999). This important step is much easier to do in the design phase of a project rather than in retrospective, when it may in some cases highlight the discrepancy between the priorities of local people and what the project objectives were.

Step 2: Enablers and Barriers

The language of “structure” and “agency” may have a long tradition in the social sciences, but it did not mean much to the teachers and local leaders in a secondary school in rural South Africa. So for the purpose of this exercise, structural factors were translated as “enablers” (favourable structural factors) and “barriers” (inhibiting structural factors). The teachers and local leaders identified several for each category.

Step 3: Available and accessible resources

As seen in Poveda (2016) and Zelezny-Green (2017) the resources element of the CF are among the most easily and intuitively understood. So the language of resources was kept and the words “available and accessible” were used to make clear that what was needed was access to these resources, not necessarily ownership. For instance, access to a computer in the local community centre or school might mean that a teacher or learner would have access to such material resources (the computer) which would allow drawing on information online, even if they did not own it.

Step 4: Empowerment

In the CF, empowerment is theorized with the help of different dimensions of choice (availability, sense of, use of, and achievement of). This is a conceptually rich area and for instance many gender empowerment questions hinge not just on the availability of choice for a woman but also on her sense of choice.

However, in this project, the tool was speaking directly to an audience of potential change makers (local leaders and teachers) who were examining the potential of the intervention they had co-designed/ were to co-design. So here the questions of dimensions of choice were radically focused and translated into two key questions: What do we think is achievable? (addressing a collective and exploring both availability and sense of choice) and Who can make it happen? (as a way of concentrating collective desires into specific demands to a clear addressee).

From here the feedback circle would then lead back to the achievement of the desired development outcomes (Step 1).

Experiences with the tool

Feedback from the workshop participants was that that the simplified CF tool helped them structure their thinking and also show the interconnectedness between different elements. The tool worked well in the rapid appraisal format and in action research planning with practitioners. Guided by the tool, a lot could be achieved and analysed in the space of 90-120 minutes. The significant simplifications from the original CF were clearly necessary for working with this set of participants in a participatory way. In some areas, such simplifications were particularly painful, and there are many situations, especially instances of academic researchers applying the CF in analysis, where clearly the CF is much more powerful in its explanatory value than the simplified tool. The theoretical richness lies not just in its own theorizing but in the theoretical connectivity to different academic literatures that the language and concepts in the original CF offer.

Nevertheless, as a tool in a rapid appraisal situation for either project planning or participatory project evaluation, the simplified CF tool has real strengths. Further, it retains the pluralistic normative spirit of the capability approach throughout with a strong focus on diverse doings and beings that might be desired by the people themselves. Further, the way that the different elements are visually and logically replicating the overall pattern of the CF allows the researcher who has applied the simplified CF tool in a participatory appraisal situation to take data from this exercise and transpose it only the original, more complex CF for further analysis by the researcher. The researcher(s) can then incorporate this bottom-up, more inductively sourced data in a more strongly pre-framed theoretical analysis with a framework which is more sophisticated, but more complex to communicate.

5. Conclusion

More than a decade since the first publication of the Choice Framework there have been many scholars and researchers who have critiqued, adopted and developed it. In the ICT4D community and beyond it has proven its worth as a conceptual tool which allows for the application of the capabilities approach in the design, implementation, analysis and evaluation of development projects. In several cases, applying the CF in action research with less academically trained or

more practice-focused stakeholders has required further complementary tools to deliver the necessary translation.

In some cases this is also a question of time available for a particular participatory exercise. The amount of conceptual input to any given participatory exercise should be proportionate. The capabilities approach in its conceptual richness is already a strong conceptual framing, and the full Choice Framework is then a sophisticated and logically unified systemic translation of the CA. However it is not always necessary or proportionate to introduce the CA or the CF, or both, into a discussion with practitioners or participants. The tools showcased in this short paper however can be used to immediate effect, systematizing the analysis while being open to bottom-up knowledge production.

There are many more tools which successfully operationalize capabilities approach thinking for action research. This short paper is a contribution to this wider collection. Each of the tools presented emerged from collaborations with local partners and in real-life fieldwork and action research situations. The next chapters in the collective story of capabilities approach research will not just be written in university offices and lecture halls but out in the field, in schools, health centres, community halls etc and in dialogue with local partners.

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