

# The Capability approach and design

## towards a practical approach based on lessons from Ethiopia

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### ABSTRACT

Technological solutions can play a vital part in promoting development. This article will discuss the relevance of using capability approach in the practical design work in humanitarian relief settings, based on a project conducted in the Kebribeyah refugee camp in eastern Ethiopia.

At the end of 2012 there were 15.4 million refugees in the world (UNHCR 2012). Even though the refugee camps are meant to be temporary installations, a refugee spends in average 17 years there (UNHCR et al. 2005). This brings great operational challenges, moving from the mechanisms of immediate assistance to a more permanent model.

Extensive literature discusses capability approach in disciplines ranging from philosophy to economics. In technological studies research is conducted in a totally different manner. This article is a contribution to the understanding of how the capability approach can benefit designers in their practical work.

**KEYWORDS:** Capability approach, Social design, Design methodology, Design for development

### 1. INTRODUCTION

The starting point of this article was Ilse Oosterlaken's article Design for Development: A Capability Approach, which was published in the journal Design Issues in the autumn of 2009. In this article Oosterlaken points to a lack of focus on development and global justice within the field of design. She argues that there are well-developed theories around designing for a market, but little on the field of social design. For this purpose she suggests the capability approach as an alternative theoretical framework.

The capability approach was first introduced by the economist and philosopher Amartya Sen in 1985. It is a theoretical framework for assessing well-being without imposing one's own notions about what a good life should contain. Sen's

motivation to develop this approach was dissatisfaction with the existing methods in this area (Robeyns 2011). Applications of the approach have so far ranged from assessing small-scale development projects to gender inequalities (Robeyns 2005). There has however been considerable discussion around the applicability.

Oosterlaken sees technological development and industrial design as an expansion of human capabilities, and thinks that the details in design should be considered in this perspective (Oosterlaken 2009). She leaves the development of a methodology for further research, which might prove challenging given the existing discussion.

In this article I will first take a look at the background for the capability approach to clarify

the motivation and idea behind it. I will then look at the critique directed towards the approach and translate it into a design context, to see if any of the problems can be solved in a practical design context. Finally I will use a case study from a design project in Ethiopia to look at the practical application of the approach for a design purpose.

## 2. HISTORY OF THE CAPABILITY APPROACH

The capability approach is a framework pioneered and advocated primarily by Amartya Sen and Martha Nussbaum. It arose from the need to measure progress in development, and the dissatisfaction with existing methods in the field of economy (Robeyns 2011).

Many existing methods in economy measures progress by looking at hard facts like the income level in a country or the amount of resources accessible to its inhabitants. The GDP is a number often used to compare countries' levels of development. This however says nothing about how the resources are distributed within the population. Discrimination on the basis of gender, ethnicity or disabilities is hence not accounted for. One can for instance see that South Africa had a quite high GDP during the apartheid years (Nussbaum 2011).

Other approaches like the Gini coefficient (Yitzhaki 1979) are based on economic growth while also accounting for the distribution of resources. However Amartya Sen and Jean Dreze has found evidence that economic growth does not directly lead to better health care or education systems, elements that must be considered central in a development context (Sen and Dréze 2002).

The goal of developmental work may be seen as giving everyone a good life. So why not measure happiness? This is the aim of the utility approach. It is based on quantifying people's satisfaction with different aspects of their lives (Nussbaum 1997). Happiness is however a relative and abstract quality that is hard to convey in words,

much less numbers. If you are happy with your life it is because you find it satisfying from your personal frame of reference. If you have lived your whole life inside walls, you might be happy with it because you know no better alternative. Does this mean that it is fair that you live that way, while my requirements for happiness are much higher?

This phenomenon is called adaptive preference and is by Sen and Nussbaum pointed out as a central weakness of the utility approach (Nussbaum 2011). According to Sen (1995) it is quite typical around the world that women show adaptive preference. They adapt to the life they have, and adjust their expectations to a second-class status in society. When asked if they are happy, they consider this from a perspective of the opportunities they have in society, and the result is biased toward the current state.

Since the ultimate goal in the utility approach is a state of happiness, it is the conditions at the current that is important in the assessment. That people have a say in these conditions is hence not valued. In the extreme one can say that with a government that make people happy, democracy is no longer important (Nussbaum 2011).

The Human Rights approaches come closer to the philosophy behind the capability approach. They aim to secure the freedoms that are central for human beings (Alexander 2004). The Universal Declaration of Human Rights is a good example of this approach in practice. There is however a central weakness in these approaches, pointed out by Nussbaum. In her opinion the term "right" can be understood in many different ways, meaning that this approach lacks clarity. To illustrate, I will give an example. One of the central rights is the right to vote. How far does the responsibility of the state extend in these matters? In a neoliberal view to give people the right to vote could be that the constitution does not state a law that keeps someone from voting (Nussbaum 2003). This does not necessarily give you the possibility to vote. To be able to vote I

am for instance dependent on getting to the polling station, which might be affected by the hours I have to work, the transport available and the distance I need to travel. And when I am there, I need to understand how the process works and who I am voting for. To ensure this I might be dependent on written information in a minority language, or I might be blind or illiterate and have different needs. So having the right to vote stated in the constitution is not the same as having the actual possibility of voting.

Through this reasoning we have come to the center of the capability approach. What Sen and Nussbaum suggest as a solution is looking at “what people are effectively able to do and be” (Alkire 2005). There are three main terms discussed in this context; functionings, capabilities and agencies. The functionings of a human being describes what the person does, has and is, in other words the realized aspects of his or her life. The capabilities on the other hand are the functionings that are effectively realizable for this human being, meaning the opportunities that in reality exist. This distinction is made to avoid cultural bias, because there is no need to define good and bad choices if one focuses on capabilities. The term agency is closely related to that of capability. Capability can be seen as the freedom to enjoy various functionings (Alkire and Deneulin 2009) while agency is a person’s ability to pursue and realize those functionings. Agency hence accounts for the individual differences in the choices people make.

Up to this point in the discussion Sen and Nussbaum agree. The capability approach is still a very vague framework, which is also the

background for their debate. Sen advocates keeping the approach at this level, because its strength lies in the fact that it is not biased. Any evaluations of which capabilities that are important to a human being would be to ascribe the target group values they might not share. Relevant capabilities are subject to both purpose and context and should in his opinion not be decided by theorists (Sen 2004). Nussbaum argues that by keeping the approach this vague, one cannot exploit its full potential. In her opinion the approach in this form can only be applied comparatively, comparing regions or nations on a certain aspect, but that the approach also has a potential for normative use (Nussbaum 2011).

A normative use of the approach means that it inflicts a judgement between right and wrong. Nussbaum sees the potential for evaluating social justice in a country without comparisons, and hence the use in processes like constitution making (Ibid.). She goes on to define a list of ten basic capabilities that she finds universal on philosophical grounds. The list is developed with a basis in what human dignity depends on, and consists in her opinion of the most basic elements. The capabilities are mutually supportive, but cannot replace each other.

When this list was originally published in the book “Women and Human Development” in 2000 Nussbaum emphasized that it was an early suggestion and urged others to develop it further. When she promoted the list again in “Creating capabilities” in 2011 however, only minor phrasing changes had been done.

The Central Human Capabilities		
1	Life	Being able to live to the end of a human life of normal length; not dying prematurely, or before one's life is so reduced as to be not worth living.
2	Bodily Health	Being able to have good health, including reproductive health; to be adequately nourished; to have adequate shelter.
3	Bodily Integrity	Being able to move freely from place to place; to be secure against violent assault, including sexual assault and domestic violence; having opportunities for sexual satisfaction and for choice in matters of reproduction.

4	Senses, Imagination, and Thought.	Being able to use the senses, to imagine, think, and reason - and to do these things in a "truly human" way, a way informed and cultivated by an adequate education, including, but by no means limited to, literacy and basic mathematical and scientific training. Being able to use imagination and thought in connection with experiencing and producing works and events of one's own choice, religious, literary, musical, and so forth. Being able to use one's mind in ways protected by guarantees of freedom of expression with respect to both political and artistic speech, and freedom of religious exercise. Being able to have pleasurable experiences and to avoid non-beneficial pain.
5	Emotions	Being able to have attachments to things and people outside ourselves; to love those who love and care for us, to grieve at their absence; in general, to love, to grieve, to experience longing, gratitude, and justified anger. Not having one's emotional development blighted by fear and anxiety. (Supporting this capability means supporting forms of human association that can be shown to be crucial in their development.)
6	Practical reason	Being able to form a conception of the good and to engage in critical reflection about the planning of one's life. (This entails protection for the liberty of conscience and religious observance.)
7	Affiliation	A. Being able to live with and toward others, to recognize and show concern for other human beings, to engage in various forms of social interaction; to be able to imagine the situation of another. (Protecting this capability means protecting institutions that constitute and nourish such forms of affiliation, and also protecting the freedom of assembly and political speech.) B. Having the social bases of self-respect and non-humiliation; being able to be treated as a dignified being whose worth is equal to that of others. This entails provisions of non-discrimination on the basis of race, sex, sexual orientation, ethnicity, caste, religion, national origin.
8	Other Species	Being able to live with concern for and in relation to animals, plants, and the world of nature.
9	Play	Being able to laugh, to play, to enjoy recreational activities.
10	Control over one's Environment.	A. Political. Being able to participate effectively in political choices that govern one's life; having the right of political participation, protections of free speech and association. B. Material. Being able to hold property (both land and movable goods), and having property rights on an equal basis with others; having the right to seek employment on an equal basis with others; having the freedom from unwarranted search and seizure. In work, being able to work as a human being, exercising practical reason and entering into meaningful relationships of mutual recognition with other workers.

*Table 1: Nussbaum's list of capabilities (Nussbaum 2011)*

### 3. THE CAPABILITY APPROACH IN PRACTICE

The capability approach has since its development been discussed widely. The main points of the discussion are well summarized in Ingrid Robeyns article *The Capability Approach in Practice* (2006).

On one hand the capability approach has received critique for not bringing anything new to the table. Some say that the approach is too closely related to existing methods and

frameworks in the social sciences. An answer to this is that the approach is still quite revolutionary within the field of economics, where it has its origin. For the approach to be useful in economics however, it is necessary to translate the philosophical discussion presented in the previous section into concrete methods that provide the kind of quantitative input economics is built on.

This brings us to one of the other central points in the critique towards the approach. The multi-dimensionality of it brings great challenges in

application, and it has been said to be “an unworkable idea” (Rawls 1999). Ingrid Robeyns has worked on operationalizing the approach, and accuses the approach of being “radically underspecified” (Robeyns 2006). She points out these necessary specifications for practically applying the capability approach:

### **3.1 Deciding between functionings and capabilities**

Sen and Nussbaum have in their work paid greatest heed to capabilities. By looking at the possibilities people actually have, they see great potential for evaluating the quality of life. For other purposes it might be more relevant to look at functionings, what a person is, has and does, depending on the aim of the research. The latter option is more applicable in practice, simply because it is easier to observe what people do than to find out what they have the possibility to choose. However the main innovation with this approach lies in the capability dimension, which is what separates it from the existing approaches.

### **3.2 The selection of relevant capabilities**

That the capability approach needs to be adapted to the context is agreed upon by Nussbaum and Sen, but they disagree on the level of this adaptation. Even with the list Nussbaum provides, Robeyns sees the need for further specification for the approach to be applicable in practice (Ibid.). There have been extensive discussions around how this should be done, ranging from theoretical evaluations to survey based statistical methods. Sabina Alkire finds the necessary evaluation of dimensions an advantage, because it forces a thorough evaluation of the trade-offs that are being done (2002).

### **3.1 The weighting of different capabilities**

The importance of each capability is not necessarily equal. To use this approach in quantitative research one is dependent on quantifying the relative weights of capabilities. Three methods for doing this has been presented

in literature (Robeyns 2006). The first method is that the researcher chooses the relevant capabilities based on theory or contextual circumstances, a second applied method bases the weighting on statistical methods, derived from surveys or similar, and a third is based on letting the relevant group of people decide the weights. This could for instance involve participatory methods.

Since the birth of the capability approach in 1985 the empirical evidence is still very limited (Ibid.). Through a review of studies applying this approach Robeyns have found that nearly all applications have been quantitative. All the quantitative applications have been built on existing surveys, and all are mainly based on functionings. This gives little background for discussing the possible impact of using this approach.

## **4. THE CAPABILITY APPROACH IN DESIGN**

The starting point of this article was Ilse Oosterlaken’s article Design for Development: A Capability Approach, which was published in the journal Design Issues in the autumn of 2009. In this article Oosterlaken points to a lack of focus on development and global justice within the field of design. She argues that there are well-developed theories around designing for a market, but little on the field of social design. For this purpose she suggests the capability approach as an alternative theoretical framework.

The advantage of applying the capability approach in economics is said to be the shift in focus from variables like income level to more “soft” and human factors. In design however, like in the social sciences, focusing on the human being is not new. It was first introduced through the field of ergonomics. The word ergonomics was first used in England in 1949. The field expanded quickly in the sixties, when the first computer’s had also created a need to design for usability (Øritsland and Vavik 2008). Now the main focus of designers is a bottom-up approach to innovation, which in other words is human-

centred. How can a design be human centred if the effects it has on human lives are not considered? So in one way one might say that the capability approach is the underlying theoretical framework that separates design thinking from innovation as a general term.

One of the main arguments Oosterlaken gives for applying this approach in the field of design, is that the goal of technological development is to expand our capabilities as humans (2009). I find the statement a bit idealistic, but also interesting because it also implies that the capability approach could be relevant also outside design with a social aim.

That it is relevant does not however prove that the capability approach is valuable for the design process. This requires that it has a potential to expand on the existing methodology. I will investigate this at the practical level through a case study from Ethiopia as an example.

Though there are a diversity of disciplines within design, the classification of these is based on the outcome of the design process. Transformative design changes behaviour, product design results in a product and social design improves human well-being and livelihood. The process of getting there is not necessarily that different, and it has been created several models describing a general design process. I will use one of these models as a framework for the discussion of the use of the capability approach in the case study.

## 5. INTRODUCTION OF CASE STUDY

The starting point of the case study was an ethanol cookstove provided by Gaia Association in a refugee camp in eastern Ethiopia. The refugee camp is called Kebribeyah, and was set up to receive refugees from Somalia at the onset of the civil war in 1991. The research was done in the camp, interviewing refugees, in the nearby city Jijjiga and in Addis Ababa.

During the first trip to the refugee camps it became evident that the main challenge concerning the stove was the provision of

ethanol. This led the refugees to use the available alternatives firewood and coal. In the eastern part of Ethiopia the use of firewood has been banned, because the area has been deforested extensively the last years. Without the ethanol the refugees are forced to break this law to be able to cook the rice they are provided.

## 6. TRANSLATING THE DISCUSSION

The practical applicability of the approach has been central in its critique. I will translate the issues described by Ingrid Robeyns into a design context, to have a starting point for my analysis.

### 6.1 Deciding between functionings and capabilities

As I mentioned when introducing these issues, capabilities is what Sen and Nussbaum both ascribe value. In design I would say that the two dimensions are equally important. Their direct significance will depend on the nature of the design project at hand. To focus on capabilities would for instance be interesting within social design. Oosterlaken's idealistic idea of technology as capability expansion holds true for this discipline, where idealistic aim is at the center. Expanding capabilities might even serve as a definition of the field.

A focus on functionings on the other hand, what people are, do and have, would be most interesting in a more traditional part of industrial design. Functionings can be related to functionality of design and is a use-centered dimension rather than user-centered, meaning that it focuses on the actions of the user rather than directly at the user.

It is also interesting to look at the relationship between functionings and capabilities. Which realized functionings does a person have compared to the available set of capabilities? Looking at this on an individual level brings us to the third dimension agency, defined as the ability to convert functionings into capabilities. This is related to the factors affecting the choices people make, which explain why some

functionings are realised and some are not. This is a deep understanding of human behaviour, which could be especially interesting in transformative design. For to be able to change human behaviour, it is central to understand the underlying reasons for the choices people make. It could also be interesting in social design, where it could be used to make it easier for people to choose the most desired option, or choose the “right” option in a normative setting.

The design disciplines mentioned are not really separate. Through different phases one project can contain transformative design and use-centered design. In our project in Ethiopia, we started out with an aim to change the current behaviour, from collecting firewood to using alternative sources of energy. This is transformative design. Through our research we discovered that it was the actual provision of fuel that was lacking, due to little resources and bad infrastructure. We then had to design a system involving the process from the production of energy to the use of the fuel in the the refugee camp. This is system design. The system is based on certain products, that bring us to the product design part, and also the use-centered part.

So, in summary there is no clear answer to which dimension that should be chosen in design projects. This is a conclusion similar to the conclusion that has been reached in academic discussions, which also brings us to the problem of defining a specific method. In a design setting the choice of dimension is highly dependent on the aim of the project, and also the stage a project is in. Maybe by defining the different stages of a design project, similarities can be used to develop methodological tools.

## **6.2 The selection of relevant capabilities**

In a practical design project there is a greater liberty of defining what kind of information we are looking for, compared to academic research. The selection of relevant capabilities is still very dependent on the context, but the requirements for scientific accuracy in design project is not as strict as in academic research. The designer uses

a combination of creativity and analysis when planning a design process, and is a possible approach here as well.

Designers should of course strive towards scientific perfection in their methods, but in practice this is utopic. There will always be some practical constraints that lead to trade-offs. I can illustrate this with my case study from Ethiopia. Before doing interviews in the refugee camps, we worked on the interview guides to ensure that we did not use suggestive questions, that we asked the questions in the right order, and that we did not ask anything inappropriate in a refugee setting. When we got to the camp however, we often got answers to something different from what we asked, because our questions were misunderstood. To not be suggestive but at the same time be very clear and basic in your communication is not easy. Another source of misunderstanding was the culture. If we had known more about the context in advance this might have been easier, but it was not possible in our case. There is no other way to find this information than to be in the camp, and our permits to enter were for two days only, where over half a day was lost to bureaucratic processes. This was also something we did not know in advance, which made it difficult to plan a strategy for interviews and participatory processes.

What I am trying to show is that real life is complex, and therefore it is more important to ask why then to ask what a hundred times. It is more important understanding where the information you get is coming from, than to check if everybody agrees with it. How many that agree will not tell you why, but the *why* might give you an impression whether others think the same. It might be particularly helpful to use participatory processes for selecting capabilities. Especially when designing for and in another culture including users at this stage helps to avoid cultural bias.

## **6.3 The weighting of different capabilities**

A quantified weighting of the capabilities may not be appropriate in a design project, although I acknowledge that quantification can have an evaluative purpose as an intermediate step also in design. The reason of doubt is based on the false accuracy that at worst can lead to rash decisions. It is easy for a designer to let the numbers decide instead of taking responsibility for the decision, forgetting the inaccuracy of the numbers in the process.

On the other hand I also find Alkire’s point interesting. The weighting of capabilities can have an intrinsic value because it forces important discussions around the basic aims of a project. Instead of ascribing them quantified weights however, I think it would be more useful to rank them on a list. This list can be helpful to prioritize efforts when time and resources are limited, like they in real life always are. It can also be used to evaluate the importance of different findings. This could be helpful when choosing between different concepts, because the designer is still forced to evaluate the different factors thoroughly.

The capability approach might be easier to implement in a design context than in economics or normative sociology, because qualitative data best responds to research questions starting with “How” and “Why” (Yin 2009). “How is the life

quality...” cannot be translated into a “How many...” question without substantial simplification. For designers it is the holistic and in-depth data that are of interest, which means that quantification is contraproductive.

## 7. TOWARDS A METHODOLOGY

The discussion so far explains how the capability approach translates in the world of design. I have found that the dimensions described in the approach have a valued meaning in design, and that using the approach could prove relevant. That the dimensions are relevant does not however mean that the approach can be applied, or that it brings something new to the field of design. This points back to central points in the critique towards the approach; that it on one hand is hard to operationalize, and on the other hand is very similar to existing frameworks.

An interesting point came up in the discussion around choosing capabilities or functionings. Maybe one can find similarities in methodology in different design projects if one defines the process in term of phases. The design and innovation consultancy firm IDEO has created a model for the phases of a design project, which I will base my discussion on (IDEO LLC 2012). I will now look at the possible uses of the capability approach in the case study, structured by IDEO’s model. Since the capability approach is user-

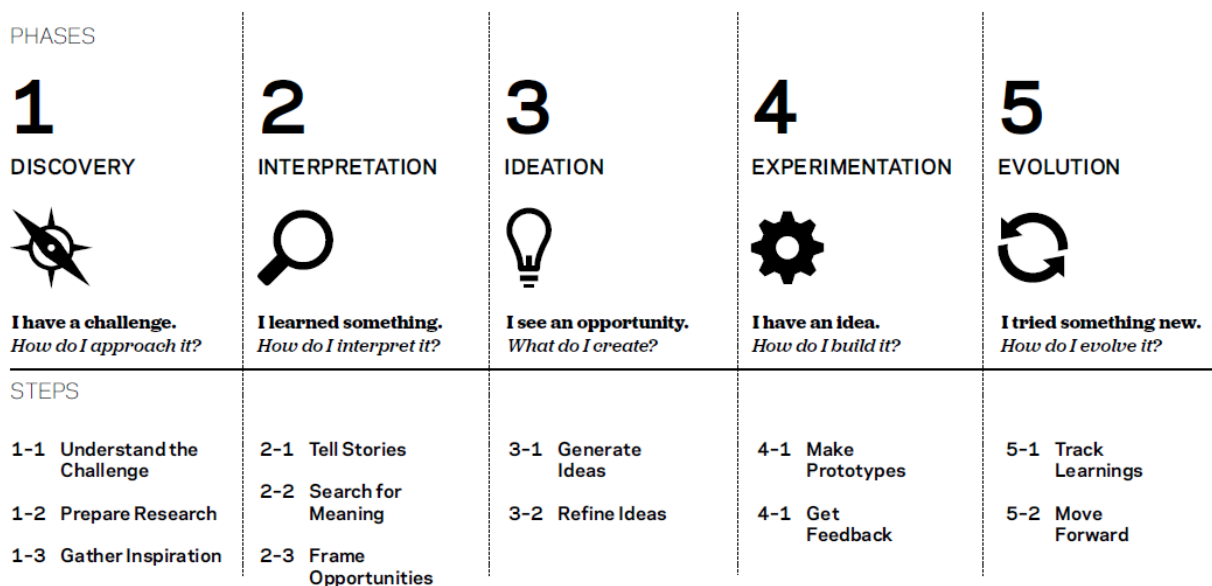


Figure 1: A model of the design process (IDEO LLC 2012)



centered, I will concentrate on the three first phases which are directly linked to the user perspective. The user can also be involved later in the project, but then it is more related to testing specific solutions where I do not see the need for a structure like capabilities to build on. I find it more appropriate to limit the testing as little as possible.

The three phases I have included here naturally contain the research phase of a design project. I have also included the ideation stage, because I think that this is indeed closely linked to the user perspective. In participatory design methods the users can even be included directly in the ideation. In my opinion the first of the three phases is the most complex and I will go deeper in the analysis of that phase by also analyzing the subdivisions.

## **7.1 Discovery**

### ***Understand the challenge***

In our project “understanding the challenge” includes everything we did before going to the refugee camps the first time. We started by studying theory about subjects ranging from ethanol stoves to Ethiopian history. Central in this phase was also discussions about our expectations to the project. The visit to the refugee camps was shortly after our arrival in Ethiopia, but before that we had meetings with UNHCR who are running the camps and Gaia who are providing the ethanol stoves we were studying.

Even though our project was focused on one product we had a very broad focus at this point. I find capabilities a more suiting dimension for this setting than functionings, because it is more focused on the conditions the refugees are living under than their specific actions. The weighting of capabilities could be done as an exercise to see if the design team has converging views on the project, but no evaluations of findings needs to be done at this stage so the weighting has no further use.

When using the capability approach in academic research the first step is to define which capabilities or functionings to use as a baseline in the research. In our project I do not think it would have been appropriate for that decision to be taken this early. We did not know anything about the situation and neither what the exact focus of our study would be. How defined the focus of a design project is at the start varies, but since it is user-centered research it is quite common that the focus is specified after meeting the end user.

With a predefined list of capabilities the capability approach could perhaps have guided our initial research. By discussing every capability on the list it could have helped us define what we should research before going to the refugee camps. It could also have helped us define what we already knew and assumed about the refugees’ situation, and worked as a framework in which to structure the information we gather through our whole research.

For our specific case Nussbaum’s list could have been helpful in giving us an overview of the situation of the refugees. Even though our case study was based on the ethanol stove, we were interested in looking at the whole picture to define a relevant focus for the project. Since the list Nussbaum created was aimed at policy making and similar, it has a holistic approach that fits our project very well. This may not be applicable to all design projects, but I think it is generalizable to projects with the same kind of aim.

In order to do the same in other projects however, a different list of capabilities could be needed. It could be possible to categorize design research after the aim of the research, and tailor predefined lists for this. I think this would be possible if the capabilities were as broad as in Nussbaum’s list so they can be adaptable to a somewhat broad use.

Without a predefined list the design team could define which dimensions to use. I do not mean to select baseline capabilities like I spoke against in

the beginning of this section, but it could serve as a hypothesis about which factors that are important. To find these one could use typical brainstorming techniques followed by critical evaluation. In our project I think this would have been helpful, but that the predefined categories in Nussbaum's list would have made us think a bit further. A list could also limit the thought process however, if it did not cover the entire focus area.

### ***Prepare research***

The main part of our user-centred research was the interviews with refugees. This started with the making of an interview guide, based on the research we had done at home and the meetings we had attended the previous week.

Interviewing users is a chance to get insights you cannot get any other way. The interview guide cannot be too long and tiring or it will prevent thorough answers and important insights, so it is important to prioritize what to ask. If you ask too widely you will only get shallow insights, and if you ask too deeply you miss the overview. If I was using the capability approach I would ideally do two iterations of interviews. The first iteration would be to let the users help me define which dimensions that are important in relation to the issues at hand, and also the relative importance between them. The second iteration would be more specific, based on the capabilities selected in the first.

During the execution phase this might have proven difficult, because of limited access to the refugee camps and further reduction of our time there due to bureaucratic processes. Doing the first iteration without the second would give little value with this methodology, and when you cannot know how much time you effectively will get you need to ask the most important questions first.

With that in mind I will also look at the possibility of using the capability approach with only one iteration of interviews. I would then use a list of capabilities and functionings when designing the interview guide. It would be useful to use the list

of capabilities chosen at the last stage as a starting point. In our case it would be relevant to include some functionings, because we at this stage also wanted to understand the use of the ethanol stove. Use-centred research is as I mentioned related to functionings, which in our case included what kind of food they were cooking, how many they were cooking for and for how long each time. To use the same list as a basis in this stage would also give a continuous structure to sort the information, which I think could have been helpful.

Using the capability approach at this stage could have given us a broader view of the situation. The philosophical background of the approach would have affected our approach to look more specifically at the opportunities available to the refugees in all aspects, to better understand how their lives are different from our own. In hindsight we could have benefited this, but it is important also to consider what we might have missed. Taking this approach we might not have gone as deep into the use of the stove and the needs concerning this, which have been central for decisions later in the process. Privacy is also a central issue when doing interviews, especially in other cultures. This was also an issue for us when making our interview guides in this project. When interviewing in another culture it is very difficult knowing which questions it is okay to ask, and what might be considered rude. Nussbaum lists aspects that cover the whole range of a human life, in her own description, but there are many things we would not have asked with this approach either. When asking more private questions the strain is also bigger on the interviewee, which is important in the moral evaluations in the project. The language challenges are also of importance here. As the questions get more personal about the emotional life of the user, the words also get more abstract and difficult to translate.

### ***Gather inspiration***

The sources of our inspiration in the case study were diverse, but I will keep the focus on research directly related to the users. In addition to interviewing refugees we also found

inspiration from observing the refugee camp, talking to the people working there, talking to people living in the surrounding areas and experts in UNHCR.

In her article *Information, Inspiration and Co-creation* Elizabeth Sanders (2005) distinguishes between research that informs the research process and research that inspires it. From her description the first type uses methodology borrowed from academic research, but about the second type she says that “Research that inspires the design development process is built through experimentation, ambiguity and surprise”. These categories can be rephrased to “Information you look for” and “Information that comes to you”.

The different actions we took to gather inspiration all contains both of these types, but to a varying degree. When interviewing a third party like UNHCR or organisations working in the camps we are mainly searching for information we have predefined, while when we are observing the camp we are mainly searching for an impression of the daily life, possibly challenging our preconceptions of the situation.

The interviews of refugees previously discussed is a good example of how the capability approach can be used when one is planning a search for information. The actualy conduction of the interviews also contain an element of “inspiration”, meaning that observations about surroundings or behaviour can have important value for the design project even though they are not directly related to the questions in the interview.

For research that inspires the design process a different methodology is needed. This is a complex type of research, and the challenge is that by defining what you are looking for, you might overlook essential findings because they were not expected. For this type of research it is more relevant to use the capability approach for processing the observations, to bring relevant points to your consciousness.

## 7.2 Interpretation

Following the trip to the refugee camp we had a three-day-long discussion to define a more narrow focus for our project. We did not discuss the findings so much directly, but abstracted it into a discussion around the problems and opportunities in the camp, which we later categorized and used as a starting point for finding a possible vision for our project. To find a vision we threw away all our post-its and started with a blank slate to bring out the main expressions we were left with. Through this discussion we also touched on many important points from the interviews.

At this point, I again think capabilities is the most relevant dimension. The research done around functionings should of course be included in the discussion, but in seen in light of the important capabilities. At this point it is for example interesting to look at which functionings that are not realized despite an available capability that seemingly should be desired. It could also be interesting to see which functionings that can lead to certain capabilities, and so on. What is since done with the information depends very much on the aim of the project, but I think that to dig as deep in the information as one can has value to all design projects.

Also at this stage it would have been possible to structure the information we gathered with a defined list of capabilities. I think that this would not have been so relevant however, if the same list was the starting point for our interviews. What we subconsciously were doing in our discussion was to restructure the information to be able to see it with new eyes. To use the capability approach here it would have most appropriate with a new set of capabilities and/or functionings. Since one list has already been used it there have been an evaluation to which dimensions to select. To select other dimensions would be the same as choosing the second best. The option left is to somehow restructure the dimensions already selected, to be able to also restructure the information seen through them.

If we had not used the capability approach previously, using it at all would be a restructuring of information. Selecting capabilities would then be an interpretation exercise in itself. The difference from the improvised method we used I think is that we would be forced to think a bit further to cover all the capabilities. This could have brought forth observations that we were not conscious of. At the same time a list that is not wide enough or open-ended enough could have limited our thought process. For our project I think Nussbaum's list would have been suitable, but if one were to define lists for other research aims like mentioned earlier this would have to be considered.

Using the capability approach without a predefined list could also have been useful at this stage. At this point we had a lot of information, though not very structured. This information could have been used to select relevant capabilities or functionalities directly, which would have given us a good overview of what we knew and which information we were lacking. What we needed the process to do for us at this point was to help us define the next step in the process, and defining a new list might make us too focused on the information we were lacking.

Regardless of which list that is used, I think the weighting of capabilities can be effective at the interpretation stage. Discussing the weighting of the capabilities can be a method to get to the basis of potential disagreements when choosing one vision for the project.

### **7.3 Ideation**

We have been at the ideation stage several times through our project. With such a research-heavy project it became evident that too much information can limit creativity. Being conscious of all the underlying conditions makes it difficult to see solutions that do not come directly from the research. We used different brainstorming techniques, but still found it difficult to get out of the mindset we were in.

The problem we found was that the aims we had defined for your project and had been using were too dominant in our minds. To use a classic method like asking "How might we..." did not challenge this mindset enough and we did not get further than the ideas that resulted directly from our research and that we had already discussed. The problem here is to find new questions to ask. A list of capabilities could provide the right amount of contextual adaptation. One could simply ask "How might we increase this capability?" or go via specifications and subdivision of the different capabilities. The basis could be a predefined list or a list improvised at this point, as long as the list is relevant to the setting I do not think the exact capabilities chosen are that important here, being it a starting point for idea generation. This could also be combined with other brainstorming methods, and could perhaps help adapt them to the setting.

### **7.4 Summary**

The capability approach could in the research phase be used as an overview on which to base the research. What is special in a design context is that there are in my experience no competing methods for this use. Design projects tend to start with a very broad scope, which might an opportunity to define lists of capabilities that are partly contextualized, but not too specific. Both the specification of dimensions and the weighting of them can be seen as formalisations of what designers are already doing, but can provide value by increasing the awareness around the decisions that are being made in the research phase. If a method is developed without any predefined lists it will also be a very general method that can be used widely.

At the interpretation stage the framework is used to restructure the information gathered in the research phase. I here see the possibility of an iterative use of the approach, redefining capabilities to see the information in a new light. Restructuring was also what we did with our improvised method, but with the extra step of defining important capabilities I think there is a

potential to bring out more unconscious observations and tacit knowledge which also can be important for the following decisions. What might also prove helpful, that did not come up in the process discussion, is that the use of the capability approach forces you to bring the information you have gathered to a more conceptual level, which makes it easier to formulate a specific aim for the project. What is interesting in this context is that aspects of the capability approach that are considered central problems in theoretical discussions actually can give opportunities in a design context.

At the ideation stage there is a possibility of using the capability approach in a very new way, as a starting point to encourage ideas. The requirements to a method at this stage is that it is defined enough to give the participants a new angle on the project aim, but still leave room for creativity. The capability approach can in this context serve as a method to bridge the gap between existing methods and to provide this balance. The value of the framework in this context is the dimension capabilities in themselves that describe available opportunities. Unachieved capabilities might be of particular interest here, but since this is only a starting point the selection is not of high relevance.

In general the qualities of the capability approach are well suited to a design context. We often work with soft factors and with a human-centred basis, which is consistent with the aims of the approach. We also work on a conceptual level, meaning that the application of the capability approach need not be specified to such a degree because we usually conceptualize our findings regardless. That we work on a conceptual level also means that we work qualitatively, which saves a lot of trouble in quantifying variables.

## 8. CONCLUDING REMARKS

The critique directed towards the capability approach in academic research mostly concerns its applicability. Specification of dimensions and quantification of findings are the main points in this critique. These are problems that can be

avoided when applying the capability approach in a design project where it is qualitative information that is of particular interest.

The selection of dimensions is in design still a central issue which the findings very much rely on. The process of selecting can however be seen as an advantage. It can help designers define the aim of the research and raise awareness of trade-offs that are done in the process. Using participatory methods can be an opportunity to increase empathy for the user and might reduce the cultural bias.

A user-centred approach is already dominant in the field of design (Sanders 05), which is also the focus of the capability approach. This means that the capability approach would not revolutionise the field of design, but it could still add value to the current methodology.

Through a case study of energy solutions for cooking in a refugee camp in eastern Ethiopia we can see that there are possible applications for the framework in the project, and that it could have added value to the results. It is however important to consider that what is discussed here is the practical execution of a project compared to the ideal application of the capability approach. Uncritical application could also have hindered the process.

The main value of the capability approach in this case study is by helping the design team to keep a broad perspective of the life of the user, primarily if it was based on Nussbaum's list but also with a case-specific list. This can also result in an increased focus on human factors over technical.

This article is based on one specific case study, but the findings are generalised through IDEO's general model of a design process. The focus has been on the value the capability approach could produce in each phase. Potential can be seen for the capability approach to inspire a mental model from which to lead the design process, or more specific methods for each phase. Developing specific methods has not been in the scope of

this article, and is left for further research. One specific suggestion is the possibility of using the capability approach as a method to contextually adapt existing design methodology.

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