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From Economic Output to Human Flourishing: The Capability Approach and Alternatives to GDP

By Jeroen Buis (s1018237)

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Supervisor: Marc Davidson
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Radboud Universiteit

Abstract

GDP growth remains to be the most dominant goal in public policy in almost every country. This dominance is misplaced considering its various shortcomings as a welfare measure. A possible alternative to GDP is the capability approach. When expanding the central list of capabilities with the capability of 'environmental impact', the significant influence the environment can have on capabilities is also accounted for. The imperfection of GDP alternatives such as HDI and GPI highlight that operationalization remains a challenge. However, the more holistic approach to well-being is a significant step forward. Besides its instrumental value in measuring welfare, the procedural characteristics of the capability approach have a significant role to play. By promoting continuous reflection and a participatory democratic process, it can play a role in determining what it actually is we value in measures. Resulting in a new priority setting of welfare measures that better reflects the values of society.

Hereby I, Jeroen Buis, declare and assure that I have composed the present thesis with the title "From Economic Output to Human Flourishing: The Capability Approach and Alternatives to GDP", independently, that I did not use any other sources or tools other than indicated and that I marked those parts of the text derived from the literal content or meaning of other works – digital media included by making them known as such by indicating their source(s). [Nijmegen, 30-05-2024]

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1 Introduction

It is common belief that economic growth is a tool through which the many challenges and problems that confront today's society can be solved, ranging from poverty and financial instability to environmental destruction and climate change. This pursuit of economic growth in public policy is called growthism (Daly, 2019). As a result of this objective, GDP growth has been the primary national policy goal in almost every country since the second world war (Van den Bergh, 2009).

However, there has been substantial criticism aimed at the dominant position of the usage of GDP in evaluating economies and human welfare. The critique of GDP, notably voiced by Robert Kennedy in a 1968 speech, highlights its limitations in capturing all aspects of human well-being beyond economic transactions (Fioramonti, 2013).

Furthermore, GDP fails to differentiate between economic activity that harms or promotes the preservation of natural and social capital. In doing so, there is a concern that the emphasis of GDP on quantity encourages depletion of social and natural capital, thereby limiting the quality of life for future generations (Costanza et al., 2009).

Similar cautions were expressed by the founder of GDP, Simon Kuznets. GDP is limited to measuring market transactions, while also ignoring the externalities that accompany economic activity. Therefore, Kuznets warned policymakers not to rely heavily on GDP since the welfare of a nation can only to limited degree be inferred from a measure of national income (Kuznets, 1934).

Thus, a too narrow focus on GDP neglects many important conditions for human well-being. A sole focus on increasing GDP pays insufficient attention to the consequences of increased consumption, energy- and land use. Precisely these factors have contributed towards an unprecedented increase in greenhouse gasses globally and subsequently an increase in climate change (Lee et al., 2023).

While the consequences of climate change for human well-being will increase as time goes on, the detrimental effects can already be observed. These include reduced water- and food security, increased climate induced human mortality, decreased human health and loss of nature (Lee et al., 2023). The degree of stress human economic activity puts on earth is further illustrated by the transgression of 6 planetary boundaries out of 9 (Richardson et al., 2023). Examples such as a decreasing quality of biosphere integrity, freshwater and climate can have profound consequences for human welfare.

Despite these criticisms and dangers GDP remains to be influential in both economics and politics (Van den Bergh, 2009). Remarkably, long-term economic growth of 3% is even embedded in the sustainable development goals of the United Nations. Simultaneously, the sustainable development goals call for 'harmony with nature'. Empirical evidence shows that under global GDP growth of 3% this is not possible (Hickel, 2019). Perhaps it is time to shift to a different measure that more accurately represents the needs of society.

Interestingly, the focus on GDP is a focus on the means, rather than the ends. One would expect that the end goal of human development would receive the most attention in public policy, as opposed to the means through which this is supposed to be achieved. Especially considering that human development also significantly influences economic growth itself (Ranis et al., 2000).

A different approach that does not view economic growth as end in itself but rather focuses on human welfare as the end goal, is the capability approach. This approach was initially created by Amartya Sen (Sen, 1979), and later expanded upon by Martha Nussbaum (Nussbaum, 2000). It is a normative framework of thought that focuses on what information is needed to make judgements regarding social policies and individual well-being. Furthermore, a distinction is made between substantive freedoms (capabilities) and outcomes (achieved functionings) that people possess (Robeyns, 2005). Within the capability approach what people are able to be and do are considered the end goals, rather than solely focusing on material ends. Therefore, evaluations of human welfare based purely on monetary terms are rejected (Robeyns, 2005).

Research question

Since the introduction of the capability approach by Amartya Sen (Sen, 1979), the framework has received extensive academic attention. There have been a variety of studies that explore criticisms of the framework (Chiappero-Martinetti & Roche, 2009; Decancq et al., 2016; Robeyns, 2005, 2006), relevance for public policy (Hasan et al., 2022; Jodoin, 2021; Mitra, 2006; UNDP, 1990; Robeyns, 2005, 2006; Walker, 2005; Zwierzchowski & Panek, 2020), and possible expansions of the central list of capabilities (Holland, 2008; Nussbaum, 2000; Page, 2007). Furthermore, there is a wide array of literature that criticizes the three welfare measures that are utilized in this thesis (Biggeri & Mauro, 2018; Costanza et al., 2009, 2014; H. Daly, 2019; Murray, 1991; Roser, 2014; Srinivasan, 1994; Talberth et al., 2007; Van den Bergh, 2009). However, These criticisms aimed at welfare measures are not applied from a capability approach perspective. Hence the academic

literature currently lacks a philosophical evaluation of popular welfare measures through the lens of the capability approach.

This thesis will aim to fill this research gap by investigating whether the capability approach is better able to measure well-being, and whether in doing so is a better guide to inform public policy in the context of climate change. Hence, the following research question will be answered: *is the capability approach as a measure of well-being better able to combat climate change than GDP?*

Amongst others, this will be investigated by performing a critical analysis of GDP and its most popular alternatives. The question to what degree the capability approach is operationalizable can namely be turned around. Namely, to what degree do GDP and its alternatives represent elements of the capability approach? Outcomes could inform the debates regarding public policy aimed at well-being and the limitation of climate change.

The measures that will be used in this analysis are GDP, the Human Development Index (HDI), and the Genuine Progress Indicator (GPI). These alternatives to GDP have been chosen due to their popularity and versatility in representing well-being, and hence serve as better representations of the capability approach.

GDP will be applied as reference point and subsequently will also be looked at through the lens of the capability approach. Secondly, the HDI will be investigated. This measure is especially interesting since the capability approach has played a significant role in the construction of this measure by the United Nations Development Programme (Robeyns, 2006). The question is whether the HDI sufficiently adheres to the requirements of the capability approach. Lastly, GPI will be analyzed. This alternative measure has been chosen since a common criticism of the HDI is that it neglects environmental issues (Biggeri & Mauro, 2018). GPI specifically accounts for the environment by discounting numerical output of the indicator, based on environmental factors that proxy environmental impact and stock of natural resources (Talberth et al., 2007).

It is important to note that the word ‘measure’ in the research question is interpreted differently than merely its economical use in measuring certain variables. The capability approach is namely an extensive framework of well-being that is not constrained to the practical construction of measures such as HDI, which largely relies on the framework. The capability approach also elaborates extensively on the factors which should inform human development. It makes several procedural suggestions for the promotion of capabilities and choosing which capabilities are deemed important. Hence, these characteristics will also be taken into consideration.

Setup of thesis

To answer the research question the thesis is structured as follows. First the question what the capability approach is will be answered, after which the most prevalent criticisms are discussed. Following, a possible improvement of the capability approach is discussed such that it adequately reflects an environmental component. After having sufficiently discussed the framework, its criticisms and possible improvement, the welfare measures will be subject to a philosophical analysis. This is done to assess to what degree these indicators conform to the capability approach. Subsequently, a brief intermezzo is added to discuss the role that GDP and other measures can have in representing value judgements. Lastly, the research question will be answered in the concluding remarks.

2 The Capability Approach

This chapter first discusses what the capability approach entails, and the dissatisfaction of welfare measurements out of which the capability approach was created. Furthermore, the rationale, different use-cases and some historical context behind the capability approach are elaborated upon. The introduction of the capability approach and the welfare indicators serve the goal of finding out what constitutes a good welfare measurement indicator, according to the framework.

2.1 Amartya Sen

The capability approach was first introduced by Amartya Sen in the article 'Equality of what?' (Sen, 1979). It entails critique on how economists have applied utilitarianism in welfare economics. While economists generally focus on the variable of utility in their theoretical work, this has translated to an empirical focus on income. Although income is an important factor that contributes to well-being and freedom, it should only serve as a rough proxy for what matters most: people's capabilities (Robeyns, 2005). Essentially, the narrow focus on material wealth is criticized, and subsequently using measures such as GDP as a proxy for human welfare.

In the Tanner lecture Sen criticizes the notion of equality from a utilitarian-, total utility, and Rawlsian equality perspective. Firstly, utilitarian equality concerns itself with the equality that can be derived from the definition of what is deemed 'good' under utilitarianism, which is subsequently applied to distributional problems (Sen, 1979).

Within utilitarianism degree of goodness is expressed in how much utility a certain distribution yields. This is illustrated by the example where a homogenous cake is to be divided among a group of people. The larger the slice of a person, the more utility they derive from it. The utility suffers from a decrease in marginal utility, meaning that the utility gained increases at a diminishing rate as the amount of the cake increases (Sen, 1979).

Utilitarian equality would then aim for making the marginal utility of everyone involved equal, since this would lead to the highest total utility. If the marginal utility of everyone is equal this would namely entail that a different distribution of the cake would not yield higher total utility. Since the marginal utility, the utility they derive from one unit extra, is equal.

Amongst others, Sen criticizes utilitarian equality since it would choose option A over B if it has even the slightest improvement of total utility, regardless of its distributional consequences.

This then leads to the neglection of the distributional component, since the sole focus is maximizing total utility. Suppose that there is a significant difference in the marginal utility function of people due to the ease or difficulty with which people are satisfied, this would imply large distributional differences. A situation in which everyone has the same marginal utility function is the only scenario in which this problem is avoided. However, as Sen points out, the variety in human preferences and characteristics leads to the violation of this assumption (Sen, 1979).

Besides utilitarian equality, total utility equality is also criticized. Both utilitarian equality and total utility equality are welfarist equalities, in the sense that the goodness of a state of affairs can be judged based on the utilities in that state (Sen, 1979). However, they differ in the sense that with total utility equality, the goodness of the state of affairs is judged by the utility of the person that is worst-off. (Sen, 1979).

If the worst-off person in two states have the same level of utility, then the utility of the next worst-off person is analyzed, and so on. As soon as the utility of the worst-off person differs between two states, then the state where this person has more utility is deemed more equal. This principle is called 'leximin', a system of ordering that is based on the person that is the least well-off (Sen, 1979).

Sen shows that the notion of leximin is accompanied by a utility equality preference, which states that more equal distributions are preferred, irrespective of the involved numbers of utility. This subsequently leads to Sen's criticism which states that this approach is insensitive to the magnitudes of potential utility gains and losses. A solution to this problem by choosing a mixture of both utilitarian equality and total utility equality would still be considered a form of welfarism, which Sen doubts to be adequate (Sen, 1979).

Lastly, Sen criticizes Rawlsian equality. Rawlsian equality defines equality in terms of primary goods, as opposed to utility. Primary goods include rights, liberties, but also income and wealth (Rawls, 1971). Here a separation is made within primary goods; basic liberties are claimed to have priority over the other primary goods since they are deemed to be the most fundamental. Sen uses the example of a cripple to show that under Rawlsian equality he or she gets no more or less on the grounds of being cripple. Subsequently, the justification of Rawls that hard cases distract our moral perception is criticized. Sen comes to similar concluding remarks: people are more different than what has been accounted for in the preceding notions of equality (Sen, 1979).

Due to the limitations of utilitarian equality, total utility equality and Rawlsian equality, Sen created his own alternative. The focus of Sen on basic capabilities and freedom can be viewed as a natural addition to the concern of John Rawls with primary goods (Sen, 1979). Human ends and the ability to pursue the goals that one values receive significant attention. Furthermore, the notion prevalent in economic theory that individuals are self-interested maximizers without considering emotions or relationships is rejected. The theory acknowledges the variety of human needs and priorities (Stiglitz et al., 2009).

At the time of the first publication of the capabilities approach Sen was doing applied work on poverty in developing countries. In this work empirical support was found for a focus on what people can do and be as opposed to measurements that were more popular at that time (Robeyns, 2005). This is also why the version of the capability approach of Amartya Sen more closely resembles economic reasoning than the version of Martha Nussbaum.

Following the first publication of the capability approach Sen subsequently published works in which key terms such as ‘functioning’s’ and ‘capabilities’ are further elaborated upon (Sen, 1993). The term ‘capabilities’ refers to the ability to achieve various functionings which are deemed valuable. ‘Functionings’ are more concrete than capabilities as they do not concern alternative combinations of functionings a person can achieve. Instead, they reflect certain states that a person is able to accomplish, such as being literate and having access to healthy foods (Sen, 1993). In short, capabilities are the doings and beings that can be achieved if people so choose. Whereas functionings are capabilities that have already been realized (Robeyns et al, 2023).

Sen has also expanded on the notion why welfare should not be measured merely by measuring the goods that people possess. Since the ability of people to live the life they desire cannot be captured by their possession of commodities (Sen, 1985).

The framework has received a wide array of attention in the academic field and in policy making. Most notably, the Human Development Reports (1990-2004) published annually for the United Nations Development Program (UNDP) rely to a substantial extent on ideas of the capability approach. Like the capability approach, these reports concern themselves with humanitarian well-being and the attempt to capture this in a comprehensive matter.

An alternative measure off well-being, the human development index, is also inspired by the capability approach. This measure has been constructed by the UNDP and subsequently has been published in the Human Development Reports (UNDP, 1990). This influence of the capability

approach is largely due to its flexible nature, which allows policymakers to analyze a wide array of challenges (Fukuda-Parr, 2003; Robeyns, 2005).

While the Human Development reports have received considerable attention, several other studies by Sen further investigate the relationship between human development and the capability approach. Arguing for example that human development is about expanding real freedoms as opposed to focusing primarily on economic growth, essentially expanding the scope of development economics (Sen, 1990).

The narrowness of prevalent economic measures is an issue Sen has expressed numerous critiques on. Expressing the need to incorporate a range of factors and further analyze the effects of people's capabilities (Sen, 1988). An important contribution to this field is his work 'Development as Freedom', stating that freedom should both be the ends and the means in human development (Sen, 1999). Although in the capability approach both positive and negative freedoms play a role, the former plays a more significant part. Where 'positive' refers to ability to do something, as opposed to negative freedom which refers to the absence of constraints (Carter, 2003).

2.2 Martha Nussbaum

While a variety of different scholars have further developed the capability approach, the most well-known are the additions of Martha Nussbaum. Both Sen and Nussbaum's ideas are closely intertwined and both critique theories such as Utilitarianism. They however also differ on a variety of issues (Robeyns, 2005).

While Amartya Sen pioneered the approach in 1979, Martha Nussbaum made a significant contribution by including her list of 10 basic human capabilities. Thereby making the capability approach more applicable to other fields than economics (Saigaran et al., 2015). Nussbaum claimed that the capability approach of Sen lacked strength as Sen did not commit to endorsing a specific list of capabilities. Thereby opening up the possibility for any type of capability to be argued as valuable (Nussbaum, 2000; as cited in Robeyns, 2005). Through the central list of capabilities Nussbaum addresses the criticism regarding the absent definition of 'the good life' in the version of Sen (Qizilbash, 1998).

As opposed to the economic and social take of Sen, Nussbaum enters the capability approach from a moral-legal perspective. The legal element refers to the argumentation of arguing that

certain political principles should be guaranteed to all its citizens through its constitution. In order to achieve this, Nussbaum created a list of central capabilities which she argues each government should adopt (Robeyns, 2005). These central capabilities are influenced by the Aristotelian and Marxian ideas of what human flourishing and a good life entail (Nussbaum, 1988, 1992; Saigaran et al., 2015). A summarizing list of these central capabilities can be seen in the table below (Nussbaum, 2011).

1. **Life**: the ability to live to the end of a human life of normal length.
2. **Bodily health**: being able to have good health; adequate nourishment and shelter.
3. **Bodily integrity**: being able to move freely and have choice in reproduction matters.
4. **Senses, Imagination, and Thought**: being able to use the senses, to imagine, think and reason. Protected by guarantees of freedom of expression.
5. **Emotions**: the ability to have (emotional) attachments to things and people outside ourselves.
6. **Practical Reason**: the ability to form a notion of good and to be able to critically reflect on the planning of one's life.
7. **Affiliation**: the ability to engage in social interaction and show concern for other humans, and having a social base of non-humiliation and self-respect.
8. **Other Species**: being able to live with concern for other animals, plants and nature.
9. **Play**: the ability to enjoy recreational activities.
10. **Control over one's environment**: the ability to participate in political choices that influences one's life, and having (property) rights on an equal basis with others.

Nussbaum's addition to the capability approach was first introduced in her article: Women and Human Development (Nussbaum, 2000). The introduced central capabilities are meant to be universally applicable to any constitution, such that it can serve as a partial theory of justice (Robeyns, 2005). Later publications give an overview of the consequences of her thesis for human development, social justice, and human rights (Nussbaum, 2011).

Furthermore, specific attention is paid towards gender injustices within the human development debate. It is argued that growth is a bad indicator for quality of life since women are often unable

to enjoy the fruits of economic growth due to societal barriers (Nussbaum, 2007a). Nussbaum's inspiration taken from feminist economics is notable in this regard. Besides paying specific attention to women, Nussbaum also analyzes the effects of the capability approach for issues of justice relating to animals and handicapped humans (Nussbaum, 2007b).

The expansion of Nussbaum can be considered a further critique on Rawls by not merely focusing on the difference between primary goods and capabilities, but also addressing the implications of Rawl's theory of justice belonging to the social contract tradition (Robeyns, 2005). It is argued that while the social contract theory promotes thinking about justice, it exhibits structural defects when applying this theory to the world stage. Instead, the capability approach can be used as an alternative, to define the minimum requirement of justice (Nussbaum, 2004).

While Sen was more cautious about expressing a central list of capabilities which should be strived towards, Nussbaum is more expressive regarding this topic saying that every human being is entitled to these capabilities (Robeyns, 2006). Nussbaum specifically aimed towards formulating the capabilities in an abstract and open-ended manner, such that the list could be applied all over the world and be adapted to local contexts. Critiques however debate the philosophical legitimacy on which the list is founded (Robeyns, 2006). Adding, some critics claim that the central list of capabilities exhibits an underlying normative force (Gonzalez, 2013). Supposedly, it reflects western values and hence is prone to neo-imperialism (Khan, n.d.).

While the versions of the capability approach between Sen and Nussbaum differ in their concreteness and their degree of prescriptivity, they are similar in a multitude of ways. One of which being their critique on the utilitarian approach of economists when using proxy indicators of welfare. It is a framework that focuses on people's capabilities and freedom rather than merely focusing on material resources. Although income is a component of human welfare and their capabilities, it should not be the main goal of public policy aimed at human development.

2.3 Use-cases

Since the creation of the capability approach there have been many examples of use-cases applying the capability approach to different fields within society. Thereby demonstrating its wide-spread adoption and success in steering the priorities of public policy in a different direction. Mostly, it has been successful in critiquing the definition of human development that was prevalent in the past. Instead of focusing on narrow economic measures, a shift has been made in acknowledging

the importance of providing the necessary conditions on which individuals can achieve their capabilities (Robeyns, 2006).

This is best illustrated by the adoption of the capability approach within the yearly reports of the United Nations Development Programme since 1990 (UNDP, 1990). There have been over 500 regional and country-level Human Development Reports. These reports entail possible development strategies on local, regional and national levels, drawing inspiration from the theoretical tools of the capability approach (Robeyns, 2006). This influence consequently led to the creation of the Human Development Index as an alternative welfare measurement. This index attributes an aggregated value between 0 and 1 based on the relative scores on the dimensions of education, health and standard of living (UNDP, 2024). A country with a HDI of 1 would entail the highest score on all three dimensions.

The applications of the capability approach reaches further than merely the human development field. In the medical field the framework has for example been used to go beyond merely focusing on the medical needs of disabled people, and instead focusing more on their capabilities (Mitra, 2006). Similar use-cases have been applied in education, to shift the focus on the capabilities that education can help facilitate (Walker, 2005). Furthermore, It has been widely used to inform public policy to address gender equality and the improvement women rights (Robeyns, 2003, 2006). These examples illustrate the versatile nature of the capability approach, which allows it to be applied to a wide array of fields.

3 Critiques of the capability approach

This chapter further discusses whether the capability approach is a suitable normative framework which can be used to inform public policy. Different use-cases and characteristics of the framework are elaborated upon to answer this question. Furthermore, the different critiques that the capability approach has been subject to will be further analyzed, to uncover possible improvements or limitations.

Interestingly, the versatility of the capability approach is also an important weakness, as illustrated by Robert Sugden. The operationalizability of the capability approach is questioned given the disagreement among people what is considered a 'good' life (Sugden, 1993). According to Sugden (1993) the main challenge arises in attributing relative weights to different functionings. It can be concluded that they have at least some value, but how do they relate to each other?

Sen responds with the notion that well-being is inherently ambiguous, thus the focus when valuing capabilities and functionings should be on partial orderings as opposed to absolute orderings (Sen, 1992; as cited in Sugden, 1993). Partial orderings are namely more feasible since this would limit deciding whether functioning A > B or B > A. Whereas an absolute ordering would also mean that a numerical weight should be attributed. Such that for example A=0,162 and B=0,262, therefore B > A.

However, the suggested focus on partial orderings does not resolve the subjectivity as to what these orderings should be. How would one justify the dominance of one functioning over another? It could be that different individuals and populations across different cultures have different views on this matter.

An additional problem is that by focusing on partial orderings as opposed to absolute orderings, the empirical value is being complicated further. Since using the capability approach for empirical analysis requires some form of quantifying the relations among the different measured capabilities or functionings, and thus necessitates absolute orderings. Otherwise it is not possible to produce quantified results as to what the capability status is of certain populations. Concluding, although absolute orderings are inherently challenging, they are necessary.

The focus on partial orderings also highlights the subtle nature of the capability approach. Subtle in the sense that it tries to not give a too strict definition on what is considered a 'good life' or perfect composition of different capabilities. Despite this, its Aristotelian roots are still noticeable,

since the capability approach tries to find an answer to the question what makes a good life (Sugden, 1993). This can be traced back to the ideas of Aristotle on human flourishing, where it is stated that the goal of human life is to achieve 'eudaimonia', often translated to more modern definitions such as well-being or happiness (Kashdan et al., 2008).

Aristotle states that eudaimonia can be achieved by leading a life in line with the appropriate virtues. These virtues refer to characteristics that reflect mean states between an excess and a deficiency (Chase, 2019). For example, courage is a virtue that balances between the extremes of cowardice and recklessness.

The notion that there are certain actions or states which are deemed inherently good falls under the objective list theory. This theory states that regardless of the subjective preferences or desires of people, certain things or states are good for individuals (Crisp, 2021). Aristotle's concept of Eudaimonia can therefore be interpreted as a predecessor of the objective list theory, since it claims that there are certain actions and states which are inherently good to strive towards as a human.

Once again the Aristotelian roots of the capability approach can be observed since the capabilities approach can also be classified as an objective list theory. Under the objective list theory it becomes difficult to argue that one capability is worth more than another, since they are all perceived to be a requirement for living a good life.

The challenges as a result of giving a notion what should be considered a 'good life' are apparent in previous paragraphs. Additionally, the many functionings that the capability approach deems important further challenges the possibilities of its empirical use (Sugden, 1993; as cited in Robeyns, 2006). In the following paragraphs the operationalizability challenges and other main critiques regarding the capability approach will be further discussed.

3.1 Operationalizability

One of the main critiques of the capability approach is the degree to which the theoretical framework can be operationalized, such that it can be used for empirical use. Operationalization of the capability approach is generally defined as the empirical methods used for measuring functionings or capabilities (Chiappero-Martinetti & Roche, 2009). This entails the question to what extent the capability approach can be empirically measured through the use of measures, since its operationalization is undeniably complex (Chiappero-Martinetti & Roche, 2009; Robeyns,

2006). To be operational simplified versions of the capability approach are necessary (Gasper, 2002).

Questions within this critique are for example how you should empirically trade-off different capabilities, or how you capture the status of people's capabilities in an empirical measure when confronted with limited data availability (Robeyns, 2006). These questions boil down to how an abstract concept like capabilities can be translated accurately into an empirically measurable counterpart. Such that the idea behind the capability approach is accurately represented by the measurement and does not lead to incoherence between the two. Due to the complexity of these issues some researchers express their doubts about the empirical applications of the theoretical framework (Chiappero-Martinetti & Roche, 2009).

Sen himself also argued that an appropriate evaluation of well-being should be done not merely on the basis of capturing the complexities that are inherent to well-being. Instead, the process of operationalizing should both concern a relevance criterion, and a usability criterion which concerns itself with the potential use for empirical assessment (De Rosa, 2018).

The potential challenges start already at practical limitations such as data availability. Almost all existing datasets have not been created with the purpose of measuring functionings, and consequently neither for measuring capabilities (Robeyns, 2006). This already means that certain trade-offs have to be made between relevance and usability. Not every variable accurately represents the complexities behind measuring well-being and capabilities. At the same time, it is also not yet reasonable to expect this. Most of the current applications have not succeeded in capturing the richness of the concept of capabilities and hence have focused on functionings instead (Decancq et al., 2016).

Functionings concern themselves with the actual state of achievements of a person, whereas capabilities refer to the freedom a person has to realize these functionings. Illustrated by the functioning of being literate and the associated capability of having access to good education (Robeyns, 2006). The capability of having access to good education is significantly more abstract and therefore harder to capture in an empirical measure.

Hence, when looking at operationalizing the capability approach, functionings are often used as opposed to the capabilities. To illustrate; in a study which operationalizes the capability approach regarding energy justice in Guinea, the capability of being able to afford energy services was measured through the percentage of income allocated to energy services. Adding, the number and

duration of electricity disruptions was utilized to measure the capability of having reliable electricity (Jodoin, 2021).

Another significant issue mentioned in the literature is the ‘indexing’ or ‘trade-off’ problem. The question whether it is desirable to aggregate the different functionings or capabilities such that a one-dimensional measurement of individual well-being is created. Some have argued against actualizing these trade-offs, since the different capabilities are claimed to be incommensurable. Nussbaum for example states that her central capabilities cannot be traded off against one-another, instead the state should provide a minimum of each of these capabilities to its citizens (Robeyns, 2006).

Should this aggregation however be applied, the question is what weights are assigned to the different used dimensions (Decancq et al., 2016). This problem is challenging as it forces a decision to be made between the relation and prioritization between the different capabilities, and what numerical weight should be attributed to them. Whether the notion of incommensurability is true or not, it serves as a limited contribution to empirical evaluation and policy making (Robeyns, 2006). Here the tension between the relevance criterion and usability criterion once again becomes visible.

When discussing the solving of the indexing problem, it is argued that it is false to assume that it is something which can be solved indefinitely. The weight attributed to the different capabilities is dependent on the evaluation assignment to which it is applied, and hence subject to change. This is what Sen means with ‘fundamental incompleteness’, the notion that the selection of functionings or capabilities on which to focus needs to be made repeatedly (Alkire, 2005).

While this argument does not solve the indexing problem, it can be observed that throughout the years there have been improvements regarding the operationalization of the capability approach. For example the scaling solution, which allows for the relative successful aggregation of indicators that have different units of measurement. The development of multivariate data reduction techniques has also improved the operationalizability. These techniques can namely be used with large amounts of data and facilitate the construction of aggregated variables (Chiappero-Martinetti & Roche, 2009). Both these techniques illustrate the improvement in statistical methods which can be applied to complex cases such as the capability approach.

More recent studies that have attempted to operationalize the capability approach are numerous. Such as the measurement of subjective well-being in Poland (Zwierzchowski & Panek, 2020), energy justice in Guinea by looking at capabilities (Jodoin, 2021), and evaluating the impact of ICT on the quality of life of indigenous people (Hasan et al., 2022). While these studies each have their own limitations, the abundance of studies should dissipate any concerns regarding the impossibility of operationalizing the capability approach. Furthermore, it should encourage further innovative research (Chiappero-Martinetti & Roche, 2009).

It can thus be concluded regarding the operationalization of the capability approach that challenges remain. However, considerable progress has been made regarding the creation of better operationalization methods. The remaining challenges are logical in light of the high degree of complexity of capturing well-being. While the critique pointing out the difficulties in operationalizing well-being are reasonable, it is no ground on which to dismiss the necessity of empirical use of the capability approach. The operationalizability of the capability approach continues to improve, and paves the way for new methods which try to take a more multidimensional approach to capture well-being.

3.2 Cultural imperialism

Another main critique point of the capability approach is the accusation that the capability approach of Nussbaum, through her central capabilities list, defines a notion of the good life based on a western perspective. Hence making the central list of capabilities subject to cultural imperialism (Johnson, 2014; Khan, n.d.). Critiques state that this prevents the capability approach from being universally applicable (Robeyns, 2006). Furthermore, this critique questions the legitimacy which is prescribed to further concretize capabilities which are deemed to be important, such as the central list of capabilities of Nussbaum. This list contains capabilities that according to Nussbaum are moral entitlements of every human being (Robeyns, 2006).

Nussbaum states that her list can be derived from a Rawlsian ‘overlapping consensus’. This overlapping consensus is defined by Rawls as a consensus regarding a certain notion such as justice, by different religious, moral and philosophical doctrines (Rawls, 1987). Thus meaning that despite the variety in perspectives within different doctrines, a generalizable notion can be constructed on which all can agree. Applying this concept to Nussbaum’s list, it is being argued

that despite the presence of different cultures, a list can be constructed in which essential human capabilities are described which everyone can agree on. Critics doubt the possibility of this, and claim that Nussbaum has no authority to speak on behalf of the people to which this list would apply (Menon, 2002; Stewart, 2001).

It seems that the critique on Nussbaum's central list is a direct consequence of the motivation to endorse a specific list of capabilities, since she argues that the absence of any specific endorsement causes the capability approach to lack strength. This would namely cause the possibility to argue for every possible capability, even the capability to abuse one's power for example (Robeyns, 2005). Sen however claims that it is not the task of the theorist to make these decisions, rather it is the task and responsibility of the democratic process. Especially since different list of capabilities are used for different purposes. Illustrated by the Human Development Reports in which those dimensions were operationalized which were deemed appropriate (Robeyns, 2005).

While concerns regarding imposing western values on a global scale are important to take into consideration, an important limitation has to be recognized. Which is that there is no such thing as a theoretical framework which makes value judgements that is simultaneously not imposing any type of cultural values. To define a notion of the good life by creating capabilities inherently means to incorporate value judgements in your definition.

Hypothetically, any culture could be constructed which has a cultural value which is opposite of the capabilities described in a certain list, no matter how abstract this list is. The capability of bodily health for example seems reasonable and universally applicable. However, a culture could exist which states that humans do not have the entitlement for adequate nourishment. That instead we are dependent on nature and adequate nourishment is not a guarantee. According to the perspective of this culture, the capability of bodily health could then be seen as cultural imperialism.

What is important is that the capabilities on which there is a general consensus are continuously open for debate such that criticism can be expressed regarding the validity of these capabilities. In this regard the demands are met to a satisfying degree within the capability approach. It is explicitly stated that lists of capabilities which are deemed important are open-ended, under continuous revision, and created through a participatory democratic process (Nussbaum, 2011; Robeyns, 2006).

Adding, the central list of capabilities created by Nussbaum are intentionally formulated in an abstract and general manner, such that it can be adapted to national and local contexts. This way nation specific history and special circumstances are taken into account (Nussbaum, 2011). The need for further value choices which need to be made explicit can be a strength, since it empowers diverse groups within a society (Alkire, 2002). Recent successful attempts of operationalizing the capability approach are examples of adapting capabilities to local context, since decisions are made on what empirical variable should reflect a certain chosen capability (Hasan et al., 2022; Jodoin, 2021; Zwierzchowski & Panek, 2020).

Conclusion on critiques

Most recent operationalization attempts of the capability approach measure functionings as opposed to directly measuring capabilities, due to data availability and complexity of measuring capabilities. Although Sen and Nussbaum argue that measuring capabilities is less normative steering than measuring functionings, this is currently not always feasible in research. Since capabilities indicate a range of different possible ways of living, as opposed to very concretely defining a particular notion of the good life through a certain functioning (Robeyns, 2006). As has been argued in earlier paragraphs, it is debatable if imposing a notion of the good life can be avoided entirely, when defining the capability approach and relevant capabilities.

Despite the criticism it can be concluded that the capability approach is an important step in the right direction. Its multidimensional nature facilitates a more holistic approach to measuring welfare, human development and informing public policy. Thereby leaving room for continuous adaptations and improvements to meet the needs of society within different times. On this point the following section will discuss a possible improvement, such that the capability approach more accurately reflects the needs of today's society. It will namely discuss the influences of environmental impact on an extensive number of capabilities, highlighting the necessity for a separate capability reflecting environmental impact.

4 Capabilities and ecological crisis

In this section it will be argued that the central capabilities as set-out by Martha Nussbaum insufficiently address the possible influence of climate change and the environment on human capabilities. While the capability approach is a versatile framework which caters to a significant amount of human needs, it falls short on an important account. Climate change is one of the central global challenges we face in this century (Pachauri et al., 2014). The negative consequences of climate change have the ability to severely influence the human capabilities and exacerbate existing inequalities.

Some literature has therefore argued for a stronger incorporation of the environment in the central list of capabilities (Holland, 2008; Page, 2007). In its current form the list is insufficient in serving as a principle from which debates of distributing environmental burdens and benefits can be guided. Hence, the capabilities approach should be expanded such that the instrumental value of the environment to human capabilities is adequately reflected (Holland, 2008).

In the following section it will therefore be argued that an 'environment impact' capability should be included to correct this, similarly as in Page & Holland (Holland, 2008; Page, 2007). This is done by illustrating in the following paragraphs how some central capabilities are affected by climate change now and in the future. Adding, the view is defended that the incorporation of an environmental capability reflects its intrinsic value for human well-being. It will be argued that living a life devoid of dangerous (human) caused environmental impact should be a basic human right and capability.

4.1 Life

The first capability which is significantly influenced by the environment is the capability of life. This capability mainly refers to living to the end of a human life without dying prematurely or before one's life is not deemed worth living anymore (Nussbaum, 2011). The vulnerability of this capability is indirectly influenced by climate change due to the increased hazard of natural disasters. Greenhouse gas emissions are influencing the intensity and frequency of extreme weather and climate events. Illustrated by an increase in heat waves, droughts, hurricanes, floods and wildfires (Ebi et al., 2021). In the United Sates it can for example be observed that there is an

increase in the frequency and intensity of natural disasters such as hurricanes, due to climate change (Benevolenza & DeRigne, 2019).

Natural disasters and extreme weather events have the ability to cause premature death and are therefore inherently linked to the capability of life. Since these disasters have the ability to limit the degree to which humans can realize this central capability. Furthermore, it is found that higher income inequalities are associated with higher death tolls from natural catastrophes (Cappelli et al., 2021). The consequences of natural disasters are unequally distributed among the population, as they affect poor households more (Benevolenza & DeRigne, 2019). Thereby illustrating that this is also a way through which climate change exacerbates inequalities.

4.2 Bodily health

Although the aforementioned example of natural disasters is also applicable to the capability of bodily health, the emphasis is slightly different. Bodily health represents the capability to have good health, be adequately nourished and to have appropriate shelter (Nussbaum, 2011). This is also influenced by natural disasters, as it has been found that the physical health of marginalized populations during and after a natural disaster were worsened (Benevolenza & DeRigne, 2019).

Other consequences that effect bodily health are for example adverse nutritional outcomes due to limited crop production and an increase in food insecurity. Furthermore, literature suggests a relation between air pollution and decreased respiratory health, and an association between temperature increase and infectious diseases (Rocque et al., 2021). Climate change has also been associated with a decreased level of water quality, especially after droughts (Mosley, 2015). Safeness, reliability and accessibility of water are an essential component of addressing human health concerns (Hunter et al., 2010). This makes the decrease of water quality and accessibility a factor which negatively affects the capability of bodily health.

4.3 Bodily integrity

Besides bodily health, bodily integrity is also susceptible to the consequences of climate change. Nussbaum defines the capability of bodily integrity as the ability to move freely from place to place, and to live a life devoid of sexual assault and domestic violence (Nussbaum, 2011). While it is recognized that this central capability is applicable to humans regardless of gender, to illustrate this capability examples will be used that show the effect of climate change on the bodily integrity of women. This is done since data shows that women are disproportionately affected by these issues compared to men. Overall, 35% of women have at one point in their life experienced physical and/or sexual violence (World Health Organization, 2013).

Due to the traditional role that women still play in large areas of the world they are more prone to the consequences of climate change. Women are more vulnerable to sexual and gender-based violence as they sometimes lack political, economic and social protection. After natural disasters increased levels of sexual and gender-based violence can be observed (Desai & Mandal, 2021). Furthermore, environmental stress is found to be a key depressor of women's agency. This observation is also present even when household structures and social norms are supportive (Rao et al., 2019).

The consequences of climate change affect populations differently, women and girls as a group suffer the most (Desai & Mandal, 2021). This is especially illustrated when looking at parts of the world where women are dependent on natural resources and their partner, due to the often-traditional lives they live. Increased stress on the environment exacerbates sexual and gender-based violence against women. (Desai & Mandal, 2021).

4.4 Other species

This central capability is likely most affected by the consequences of climate change compared to the other central capabilities. The capability of 'Other species' refers to the ability to live with concern for, and in relation to, animals, plants and the world of nature (Nussbaum, 2011). To achieve this capability would imply a positive relation with nature and its conservation, which is exactly what is being endangered by climate change and the current use of natural resources.

On a global scale climate change is found to have a detrimental effect on biodiversity (Habibullah et al., 2022). Seeing as biodiversity is essential for the vitality of ecosystems this is an important empirical observation, since this influences the amount of (different) animals, plants, and state of nature. Both marine and land ecosystems are impacted through climate change. Temperature rise in the oceans for example causes increased coral reef mortality as coral reefs are sensitive to changes in the ocean temperature (Brown et al., 2019). Furthermore, ocean acidification which is a result of an increase of Greenhouse Gas Emissions also negatively influences the levels of marine organisms (Kroeker et al., 2010).

Additionally, on land climate change negatively affects nature as well. Since the associated increase in temperatures creates an unhealthy environment for a variety of animals, that leads them to become endangered (Roy et al., 2023). Loss of nature is also caused more directly through human activities, such as through logging, agricultural expansion, and human settlement. These deforestation practices have led to a substantial diminishment in tropical rain forests, which are naturally incredibly biodiverse (Giam, 2017).

4.5 Control over one's environment

The last central capability that runs substantial risk of being hindered by climate change is the capability of 'Control over one's material environment'. Amongst others, this entails the ability to hold property and to have property rights on an equal basis (Nussbaum, 2011). Currently there are already examples of how this capability is being violated for some populations that live in areas that are vulnerable to climate change. Either directly through climate change or through natural disasters that have increased in power and frequency.

Examples include cyclone displacement in Bangladesh and drought induced human displacement in Somalia (Jayawardhan, 2017). These are examples of how either directly or indirectly climate change affects the ability of certain populations to retain their property. A well-known example is the forced migration of inhabitants of the Carteret Islands, since climate change and the rising sea level renders the island inhabitable (Connell, 2016). As with the previous examples, it is found that vulnerable populations are affected disproportionately, both in developing and developed countries (Jayawardhan, 2017).

Climate induced displacement is causing forced migration in some areas of the world, to cope with the effects of the changing climate. This relation is likely to continue as climate change worsens, leading to mass migration due to climate change becoming the new normal (Toscano, 2015). Thereby showing the increased limitation to which people around the world can achieve this capability.

4.6 Environmental impact

As has been shown through various examples, there are a multitude of ways that human induced environmental impact and climate change substantially hinders the attainability of certain central human capabilities. If climate change and the environmental impacts caused by humans will not reduce in the future, this risk further increases. The capability approach is supposed to be a normative framework that informs public policy so people can live a life worth of human dignity (Nussbaum, 2011). However, this is currently not reflected as the possible consequences of climate change and environmental impact are not represented sufficiently in the capability approach. This point has also been made by several previous authors (Holland, 2008; Page, 2007).

Fortunately, since introducing the central list of capabilities Nussbaum has explicitly stated that the central capability list should be interpreted as open-ended and subject to ongoing revision and rethinking (Nussbaum, 2011). Which is why, based on the previous argumentation it will now be argued that a separate environmental central capability should be incorporated in the list. This capability adequately reflects the potential risks of neglecting environmental issues and the intrinsic value of nature.

The central capability which is argued to be added to the central capability list is the capability of ‘environmental impact’. Which is the capability to live a life which is devoid of dangerous environmental impacts, either caused by climate change or other human interference with environmental factors. This capability is inspired by Edward Page, who has argued that a separate environmental capability should be incorporated, such that policies are discouraged which deprive future persons of an ‘ecological functioning capability’ (Page, 2007).

Holland (2008) instead argues for an independent ‘meta capability’ that captures the instrumental value of the environment. It should be seen as a meta capability as Holland argues certain ecological conditions are a prerequisite to all the central capabilities as set-out by

Nussbaum. This addition would then also make the capability approach a useful tool which can be used for addressing inequities in the distribution of environmental benefits and burdens (Holland, 2008).

Interestingly, Page (2007) does not define a new environmental capability as being 'meta', but rather as a means to indicate that a safe and hospitable environmental is vital element of a decent life. As opposed to seeing this capability as a facilitator of other functionings such as 'play' or 'emotions'. Page (2007) refers to this new capability as the 'ecological functioning capability', the ability to experience a life in an environment in which dangerous environmental impacts that are related to climate change are absent (Page, 2007).

Although the environment has the potential to severely influence a variety of central capabilities, as illustrated above. It is not the goal to give a different status to an environmental impact capability. Rather, the aim is to better represent the intrinsic value that a healthy nature plays in well-being, while also accounting for possible consequences that the environment can have for basic human functionings. By doing so, the capability approach serves as a more holistic framework to inform public policy.

Similarly as the other central capabilities, living a life devoid of dangerous environmental impact is argued to be a basic human right. Adopting an environmental meta capability would put too much emphasis on the facilitating role that the environment plays in relation to the other central capabilities, hence downplaying its intrinsic value.

Intrinsic value

It is challenging to highlight the intrinsic value a capability without highlighting the instrumental roles it plays for human flourishing. Since to try and argue for the incorporation of a new capability is to express the necessity of doing so in terms of something outside that capability. When for example defending that the central capability of 'practical reason' or 'bodily integrity' has some intrinsic value in relation to living a dignified life, one automatically expresses the importance of this in terms of the instrumental value it plays in our lives.

To claim that every capability in the central list of capabilities is deemed to have intrinsic value because it is a part of the central capability list would be a faulty argumentation. Since surely the status of having intrinsic value is not attributed purely because it is in the central capabilities list.

This would imply that no new capability can be added on the list of only the central capabilities are possess some intrinsic value to human flourishing.

However, to not argue solely on instrumental dominated argumentation the definition of deep ecology will be elaborated upon. This definition captures the essence of the argumentation by explaining the value of the environment more in terms of itself rather than in terms dominated by other capabilities. Deep ecology is the perspective that a person is not above or outside of nature. Rather, a person is nature and is part of a continuous process of creation. Hence, people should care for nature and show respect- and live with nonhuman nature (Devall, 1980). Essentially, deep ecology claims that nature has intrinsic value irrespective of the utility it produces for humans. This line of argumentation is also used to claim that the central list of capabilities should be expanded.

In this thesis it is argued that to possess intrinsic value does not rule out the possibility of also exhibiting instrumental value. While the one should not be reduced to the other, these different argumentations and characteristics can coexist. Both types of values increase the claim of the capability of environmental impact to be incorporated into the central list of capabilities.

Necessity of expansion of the central list of capabilities

It could be argued that the aforementioned central capabilities already proxy as capabilities through which the environmental impact is accounted for. Since any factors constraining a certain capability would be worth resolving in order to protect the central capability. While it is convincing to claim that creating additional central capabilities should not be done for each element in life that effects certain central capabilities, this argumentation is not applicable. Since the proposed capability is argued to be a basic right in of itself, regardless of its far-reaching consequences for other capabilities that it can have.

The capability approach was created as a theoretical approach to inform public policy on different metrics than purely economic growth, such that everyone is able to attain a meaningful life (Nussbaum, 2011). The capability approach has been influential in this regard by informing many human development debates, illustrated for example by the incorporation of the framework in the United Nations Development Programme (UNDP, 1990).

When using the central list of capabilities to inform public policy, the need for climate policy can already partially be inferred due to the instrumental value that the environment plays in facilitating the other capabilities. However, when the proposed environmental capability is adopted

in the central list of capabilities, the need for climate policy becomes significantly more apparent. By doing so, the capability approach becomes a more holistic, future proof and accurate framework of well-being.

Furthermore, the capability approach, and human development pays specific attention to inequalities in society and factors that possible improve or worsen these conditions. As shown in the examples of climate change and other human caused environmental impact, these elements cause a further exacerbation of existing inequalities. Consequently, inequality in the achievement of the central capabilities is worsened. Due to the severity of the consequences that environmental impact can have on worsening inequality, environmental impact requires a separate central capability.

Failure to do so limits the credibility and effectiveness of the capability approach as both a measure and normative framework in effectuating increased human well-being, now and in the future. It is argued that a life worth living, as defined by Martha Nussbaum, is not achievable in a world subject to dangerous environmental impacts.

5 Analysis

After elaborating on the contents of the capability approach, its criticisms and improvement, it is now time for the actual analysis. GDP, GPI and the HDI are introduced and will be subsequently subject to a philosophical analysis to determine to what extent they represent the capability approach. This is done in comparison to the central list of capabilities with the addition of environmental impact which has added in the previous chapter.

5.1 Gross Domestic Product

First introduced by Simon Kuznets in 1934, Gross Domestic Product (GDP) measures the value of all final goods and services in a country that are traded for money, within a certain time period (Costanza et al., 2009). Since its implementation it has remained a dominant policy goal in a majority of countries, and significantly influences politics (Van den Bergh, 2009). It is an applicable measure when estimating the national income of a country. However, since its introduction economists have warned that it is a specialized tool and equating GDP to a measure of well-being is inaccurate and dangerous (Costanza et al., 2009). Interestingly, the founder of GDP is among these critics (Kuznets, 1934).

While critics of GDP are plentiful, it has remained an undoubtedly popular statistic, which has resulted in the status of being a proxy for national success or failure (Coyle, 2015). Proponents of GDP as a metric claim that without it, policymakers would not be able to make accurate decisions and estimates of how the economy is doing. The metric allows policymakers to determine whether the economy is contracting or expanding and whether the economy needs a boost or should instead be cooled down. Concluding, GDP is a useful tool that helps policymakers steer the economy towards economic objectives that are deemed important (Samuelson & Nordhaus, 2009).

While GDP can be a useful tool, an important limitation is that it only captures the final goods and services in a country that take place in monetary transactions. It is unable to capture the value of an economy beyond monetary terms. Measuring the economic output for services provided by musicians are for example limited to the number of customers they have, ignoring the aspect of quality (Coyle, 2015). Another example is the inconsideration of informal activities such as family

care. This has led to indicators that do try to capture this, such as the index for sustainable economic welfare and the genuine progress indicator (Cobb & Daly, 1989; Talberth et al., 2007).

The argumentation above leads critics to argue that GDP reflects an incomplete and oversimplified picture of the system in which it operates (Costanza et al., 2009). A suitable real-life illustration is America in 1994, during which economic indicators were indicating a booming market, but 70% of the population was feeling gloomy about the future. Symptoms of this 'paradox' was a middle class slipping away while the rich got richer, people were working more hours for less pay (Cobb et al., 1995). The worsening of working conditions decreased the well-being of its citizens, but caused an increase in national GDP.

In 2008 the French president Nicolas Sarkozy tasked a group of economists, of which one was Amartya Sen, to assess whether GDP is in fact a reliable indicator of economic and social progress. This group of economists highlighted the weakness of solely relying on GDP as a measurement, since it fails to account for factors such as inequality and environmental degradation. Consequently, there is a risk of constructing misinformed policy that prioritizes economic growth over societal welfare (Sen et al., 2010).

Analysis GDP

Before delving into the analysis of GDP and to what degree it adequately considers the central list of capabilities, it is important to consider the following. GDP was not created to be a metric which measures human well-being (Kuznets, 1934), rather it gives a rough account of the market value of economic output within a country. The problem is that despite this, it is widely used by politicians, reporters, economists and the general public as a proxy for human welfare (Dynan & Sheiner, 2018). Hence, GDP is incorporated in this analysis to determine what elements of welfare it actually reflects.

The issue with determining how the central list of capabilities are represented by GDP is that GDP in of itself does not necessarily indicate progress of the central capabilities. It simply assumes that every monetary transaction has a positive effect on social well-being (Talberth et al., 2007). Indeed, GDP could in theory increase as a result of positive economic activity for natural and social capital, such as government investments in education and renewable energy.

The opposite can however also be true, such as a GDP increase caused by unnecessary expenditures triggered by crime and preventable natural disasters. This poses a problem since as a measure of welfare and economic activity GDP is thus unable to distinguish between economic

activity which harms or promotes social and capital (Talberth et al., 2007). Consequently, it gives little to no information on how this economic activity is generated and whether it harms or promotes human development indicators.

An increase of GDP generated by the healthcare sector could for example indicate progress for functionings of the capability 'bodily health'. The expanded GDP might be explained by technological progress in finding a cure for serious diseases, which people are then increasingly consuming, thereby causing an increase in market value. It could however also simply mean that more people are becoming ill, which is leading to more appointments for doctors which is generating extra economic output. It can thus go either way, but an increase or decrease of GDP does not explain anything in of itself.

It can be argued that at least GDP indicates to what degree preferences are being satisfied, since apparently people are willing to pay for certain goods and services that satisfies a certain preference or solves a certain problem. The issue with this perspective is here the same argument applies, namely that the satisfaction of a certain preference does not indicate whether this preference is desirable or not. For example, it is found that poverty causes stress which in turn leads to short-sighted behavior. This can then constitute a feedback loop which makes it challenging for people to get out of poverty (Haushofer & Fehr, 2014). If this short-sighted behavior expresses itself through preference satisfaction of smoking and consequent addiction, this preference satisfaction should not be seen as something innate good.

These examples show the 'neutral' nature of GDP, in the sense that apart from indicating the increase or decrease of economic output, it fails to give an indication whether functionings of a capability are changing due to GDP. The essential purpose of economic activity is its use as a means to promote human development, and not GDP growth for growth's sake (Jacobs & Šlaus, 2010). While GDP can be used as an instrument to improve the functionings of the central capabilities, it is not a necessity that these functionings increase as GDP increases. The notion that it is possible to deduce welfare solely on the basis of per capita GDP is a fallacy (Jacobs & Šlaus, 2010).

The United States are an example that illustrate this point. When looking at GDP per capita it is one of the richest countries in the world, yet their scores on human development factors do not always reflect this. The capability of living a long life, captured by the functioning of live

expectancy at birth was 78,2 in 2022 (UNDP, 2023). This is significantly lower than some other countries who have similar levels of wealth.

Interestingly, the United States are not a singular outlier. The discrepancy between performance based on per capita wealth and performance on human development is further illustrated when correcting the wealth rank of countries by their rank based on human development factors. To illustrate, countries such as Iceland, Germany and Sweden are placed more than 10 ranks higher when calculating this corrected rank. While for example Luxembourg, The United States and Qatar are placed more than 10 ranks lower. If there was a strong direct link between wealth and human development functionings, even above certain wealth thresholds, one would expect little to no discrepancies in the aforementioned rankings. The opposite is however true, as can be seen in the data of the human development reports (UNDP, 2023).

Another shortcoming of GDP is that it excludes non-market activities and therefore limits the possibility of changes in GDP capturing changes in (economic) well-being (Dynan & Sheiner, 2018). Household activities for example are not captured for by GDP, even though it has a facilitating role for the rest of the economy and therefore produces significant economic value (Safri & Graham, 2010). Therefore, GDP devalues these welfare enhancing activities by ignoring these informal non-marketized activities (Talberth et al., 2007).

Especially regarding the central capability of ‘environmental impact’ GDP poorly captures its functionings. GDP namely does not separate between economic activities that contribute to harmful environmental impact, which is essential to capture the consequences of economic activity for this capability.

These characteristics make it such that GDP is not an accurate metric of the monetary value of all goods and services. While it does give a rough account on whether economic output is increasing or decreasing it fails to incorporate meaningful goods and services which are outside of the market. Unawareness of this aspect of GDP might cause policymakers and the general public to have a misinformed perspective on the economy.

It is difficult to draw a causational relation between GDP and functionings of the central capabilities, which highlights the shortcomings of GDP in capturing elements of human welfare. Consequently, GDP inadequately reflects elements of the capability approach. While there is definitely a correlation between high GDP and human well-being, an increase in GDP does not necessitate an increase in human development indicators. The notion that welfare automatically

increases as GDP increases is false (Jacobs & Šlaus, 2010). While GDP is a component of human welfare, it is a means to an end. Since it does not display any specific functioning but rather correlates with them to some degree, the use GDP in measuring well-being is severely limited.

5.2 Genuine Progress Indicator

One of the alternatives to GDP is the genuine progress indicator (GPI). GPI attempts to capture not only marketized value, but also the value or costs of volunteering and household work, leisure time, crime, income inequality and environmental degradation (Talberth et al., 2007). It is an adaptation of the index for sustainable economic welfare (ISEW) which was first introduced by Herman Daly and Clifford Cobb in 1989 (Cobb & Daly, 1989; Talberth et al., 2007).

Ecological economists have produced these indexes to compare the benefits and costs of growth, rather than focusing purely on economic growth itself. The construction of these indexes were meant as a tool to support the 'threshold hypothesis'. Which states that when macroeconomic systems expand beyond a certain point, the costs of growth exceed the additional value (Daly, 2005). In virtually every study where such an index has been calculated for a certain country the existence of the threshold hypothesis has been reinforced (Lawn, 2003).

Number	Indicator	Sign ±
1	Personal Consumption	*Base Number for Formula*
2	Income inequality (Gini Index)	+
3	Weighted Personal Consumption (Indicator 1 / Indicator 2 * 100)	*Adjusted Base Number*
4	Value of Household Work and Parenting	+
5	Value of Volunteer Work	+
6	Services of Consumer Durables	+
7	Services of Highways and Streets	+
8	Cost of Crime	-
9	Loss of Leisure Time	-
10	Cost of Underemployment	-
11	Cost of Consumer Durables	-
12	Cost of Commuting	-
13	Cost of Household Pollution Abatement	-
14	Cost of Autombile Accidents	-
15	Cost of Water Pollution	-
16	Cost of Air Pollution	-
17	Cost of Noise Pollution	-
18	Loss of Wetlands	-
19	Loss of Farmlands	-
20	Loss of Primary Forests and Damage from Logging Roads	-
21	Depletion of Nonrenewable Energy Resources	-
22	Carbon Dioxide Emissions Damage	-
23	Cost of Ozone Depletion	-
24	Net Capital Investment	+
25	Net Foreign Borrowing	+

Since its creation the GPI has received wide-spread academic attention. Especially its relevance for policymakers by providing a more holistic view of general well-being of different populations and economies is clear. There are numerous case studies that apply the GPI to various countries or regions such as New Zealand, Brazil, California, Hawaii and China (Andrade & Garcia, 2015; Brown & Lazarus, 2018; Forgie & McDonald, 2013; Guan et al., 2024; Ostergaard-Klem &

Oleson, 2014). Furthermore, when GPI is chosen as a policy goal, this leads to less environmental damage than the pursuit of GDP growth under the same conditions (Guan et al., 2024).

The GPI is the direct result of trying to form a more holistic accounting version of GDP. The GPI has however also been subject to various criticism regarding the measurement of environmental and social factors. The main critiques regarding the measurement of the these factors concern the methodology. When measuring the environmental factors the critiques concern the difficulty in measuring the environmental costs of economic activity (Parris & Kates, 2003).

These quantifications often carry a subjective component, how much monetary value should be prescribed to damaging of the environment? Even if quantifying environmental consequences of economic activity is successful, it could be argued that a market-based valuation system ignores the intrinsic value of the environment. The aforementioned critique on ethical grounds is in line with the concept of strong sustainability, which states that natural capital is not substitutable in the long term (Neumayer, 1999).

Adding, the GPI assigns values based on the benefits that housework or volunteering bring towards society. These values are challenging to consider as the aforementioned variables are difficult to quantify (Van de Ven et al., 2018). Consequently, for variables which do not have any data, values needs to be assigned. This causes potential variability based on who is performing the research, which exposes the more subjective components of the GPI (Talberth et al., 2007).

Analysis Genuine Progress Indicator

To assess to what degree the GPI reflects the measurement of the central list of capabilities it is first important to divide the metric in its separate components. The GPI uses several variables that are related to the welfare of a country's population. Since the GPI is not a standardized measure different studies may use different variables (Delang & Yu, 2015). The following table shows the methodology used by the original author of the GPI, Clifford Cobb. Hence it can be used as a blueprint (Talberth et al., 2007).

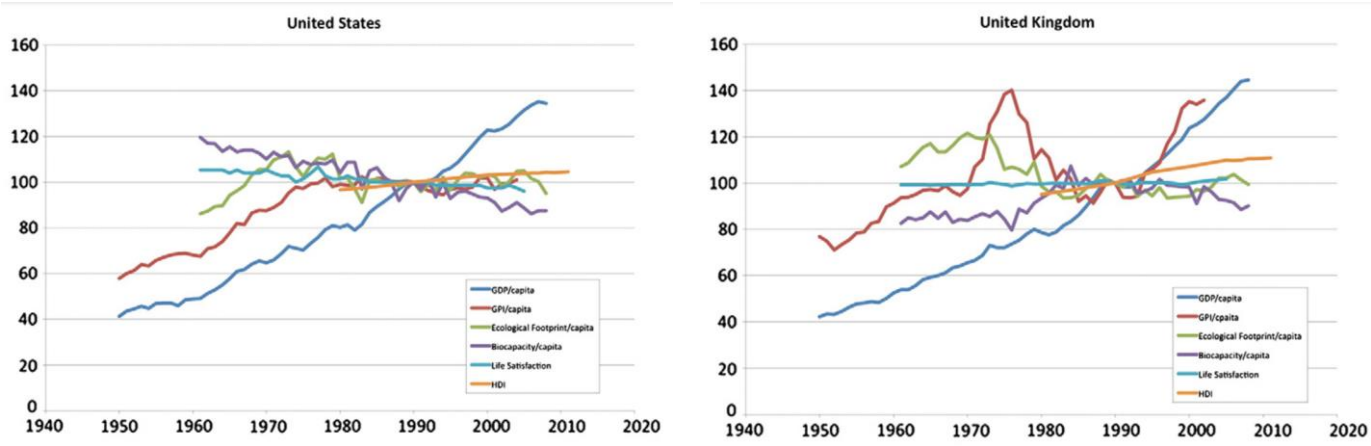
As can be observed, the indicators from which the GPI is created can roughly be divided into the following categories. First there is the weighted personal consumption which serves as the base number of GPI. Onto this base number, the benefits of non-marketized activities are then added, such as the benefits of volunteerism. Following, the costs of nature deterioration and natural resource depletion are subtracted, similarly as activities that harm social capital and the costs of

defensive private speeding. Lastly, the increase or decrease of capital stock and international trade balance is considered.

When looking at the different components of GPI it becomes apparent that many variables are considered which can serve as a measurement of functionings. Services of Highways and Streets could for example be used as a proxy for the capability to move freely from place to place. Adding, the costs of crime serve as a proxy of measuring a component of bodily integrity, the capability to be secure against violent assault.

Regarding the central capability of 'environmental impact', the GPI is a significant improvement in comparison to GDP. It namely considers the consequences of economic activity for the stock of natural resources, and the general consequences for nature. Illustrated by indicators such as 'Depletion of Nonrenewable Energy Resources' and 'Carbon Dioxide Emissions Damage'.

The quality of GPI to measure functionings of well-being is further illustrated by comparing GDP with GPI. As illustrated in the graphs of Kubiszewski et al (2013), GPI consistently shows that until a certain point economic growth is strongly correlated with well-being. Beyond this point this positive correlation seems to disappear, and in some cases even turns into a negative relation. This illustrates the previously mentioned threshold hypothesis (Lawn, 2003).



Similarly, as in the capability approach, the specific indicators are not clear-cut and are open to adaption to local context. The methodology choices for the measurement of these 25 indicators are prone to subjective interpretation, which is simultaneously a weak point of the GPI. As this makes a comparison of GPI's difficult when different methodologies have been applied.

By no means is the GPI a flawless metric for measuring well-being, it is however a better approximation of economic welfare than GDP (Kubiszewski et al., 2013). Consequently, it does a significant better job in measuring functionings of the central list of capabilities by considering the effect of economic activity on natural and social capital. It also takes into account the value of non-marketized goods and services to an adequate degree. The variety of indicators make it such that various functionings of the capability approach are considered, which produces a more holistic view of well-being.

5.3 Human Development Index

Another alternative to GDP is the Human Development Index (HDI), which has been created due to the dissatisfaction with the status quo of measuring human development. This index was first published in the Human Development Report of 1990. It is a weighted score between 0 and 1 which reflects life expectancy, literacy and income (per) capita corrected for by purchasing power parity (UNDP, 1990). A country that would have the highest relative achievement on each of the separate functionings would receive a score of 1 (Robeyns, 2006). While the capability approach has been an important theoretical framework on which the HDI was built, it has been primarily informed by the works of economist Mahbub Ul Haq (UNDP, 1990).

Although the HDI is widely used to inform development policies worldwide (Biggeri & Mauro, 2018), it has received considerable criticism. Measuring human development can be challenging and sometimes academics disagree on what should be included. Some have argued that the HDI depicts a view of human development which is too simplistic by only relying on a few indicators (Murray, 1993, Srinivasan, 1994; as cited in Kovacevic, 2010). Even when this problem has been resolved, it can be difficult to measure the incorporated variables (Roser, 2014). In response to the aforementioned critiques the UNDP have developed additional indexes that incorporate different values, these have however not been widely utilized (Kovacevic, 2010).

Perhaps the most important shortcoming of the HDI is that it does not reflect an environmental component. This is also considered to be the ‘original sin’ of the HDI, referring to the neglection of environmental and social sustainability issues. Hence the Sustainable Human Development Index (SHDI) has been developed to combat this issue (Biggeri & Mauro, 2018). This is relevant critique, especially considering the possible implications that unsustainability can have for the capabilities of humans.

Analysis Human Development Index

The Human Development Reports, and subsequently the HDI, are based on the capability approach to a significant degree (Alkire, 2005). Hence, one would expect the HDI to score well in this analysis. Especially since the HDI is a direct result of operationalizing certain aspects of the capability approach.

When looking at the components of HDI the influence of the capability approach already becomes apparent. HDI namely consists of life expectancy at birth, literacy rates and gross national income per capita (UNDP, 1990). The first two already serve as measures for the functionings of the capability 'life', 'senses, imagination, and thought' and 'practical reason'.

These variables are good predictors of the aforementioned capabilities since 'life' refers to the capability of living a life of normal length, hence life expectancy is a good predictor (functioning) of this capability. Furthermore, literacy rates capture elements of quality and access to general education. Education is a vital component to be able to reason independently and to have the means to form your own opinions. If someone is illiterate, this means they cannot independently research schools of thought or critical ideas, therefore their cognitive development is limited. This is directly related to the capability of using and forming independent (critical) thoughts.

However, besides these capabilities, the HDI does a surprisingly poor job of capturing the functionings of central capabilities apart from those mentioned in the previous paragraph. This can be attributed to the limited amount of incorporated variables in the index. This is a surprising result considering the significant influence of the capability approach on the index itself. While limiting the amount of components in an index increases the practicality and feasibility, in this case it comes at the cost of presenting a more holistic representation of well-being.

The limitations of HDI become more apparent when looking at capabilities such as 'other species' and the added central capability of 'environmental impact'. The HDI does not involve an environmental component and therefore does not capture the capabilities which are directly linked to the status of the environment. Considering the far-reaching consequences that the environment can have on human well-being it is surprising this has been left out. While quantifying aspects of the environment is a challenging task, it is necessary that an index aimed at resembling well-being and the capability approach tries to accomplish this.

5.4 Measurement of what?

It can be concluded that every measure has its own critiques and flaws. Their similarities are that these measures are the operationalized versions of trying to measure welfare, or at least pretend to be. The idea behind the aforementioned measures are all rather sensible, the critique however is often situated in the operationalization of these underlying ideas. Thus referring to what the variable measures, and perhaps more importantly, what it does not.

While the capability approach is no measure, it is a framework through which one can analyze issues regarding human welfare and development. Nussbaum and Sen accurately expose the versatility and variety of human needs when it comes to welfare. Ideally, the complexities of human welfare are captured to a satisfying degree in the utilized measures.

It can be concluded that the most dominant measure which informs public policy is a poor estimator of capturing human welfare. There are many services and goods that GDP does not capture, and thus falls short of accurately measuring economic output. Adding, it fails to differentiate between economic activities that harm or promote crucial factors for well-being such as natural- and social capital (Costanza et al., 2009).

To capture these complexities of human needs for well-being is a complex task since this requires balancing practicality with representing the capability approach as much as possible. As can be observed, the GPI is an example which is leaning towards becoming too complex of an indicator. While the separate components capture a variety of functionings, the size of indicators reduce the practical feasibility and limit the standardization possibilities of the metric.

Interestingly, the HDI is located more on the other side of this spectrum. Due to the limited amount of components, the index is significantly more practical than the GPI. The shortcoming of the HDI however is that due to the more simplistic approach of measuring welfare it fails to consider a wide range of functionings. Moreover, it neglects the effect that the environment can have on human capabilities since it does not contain an environmental component.

When comparing the results it seems that the search for an adequate measure of well-being is perhaps more a search for the right balance between practicality and complexity. This conclusion hints at the incorporation of multiple welfare measures in the process of evaluating and forming public policy. Such that the loss of complexities and nuance of human needs are limited, while keeping in mind the importance of standardizing these measures and keeping them feasible to implement.

In this analysis GDP, GPI, and HDI have been investigated to determine whether they adequately resemble the capability approach, and what the limiting factors are. However, to determine whether the capability approach is or should be a suitable alternative to GDP, it is important to also have a conceptual discussion of the role measures can play in influencing the perspective of humans on the world, their values and consequently public policy. This will be done in the following chapter.

6 Intermezzo: Values

Each of the mentioned measures capture different elements of the economy and human well-being. Depending on the type of values one prioritizes, one measure may be more in-line with what that person deems important when measuring well-being or the state of an economy. Is it however also a possibility that these measures themselves reflect value judgements about the world and hence have the capability to influence people's worldview? Should this be the case, what is the best way to deal with this in light of the procedural elements of the capability approach?

6.1 Values in science

The notion that measures do not reflect value judgements whatsoever reflect proponents of the value-free ideal, this ideal states that justification of scientifical findings should not be based on moral or political values (Betz, 2013). The idea behind it is that the objectivity and neutrality of science is then safeguarded as much as possible from influences which are deemed subjective. By defending the value-free ideal Betz suggests that it is not the responsibility of the scientist to make political and ethical decisions, this should be left to the policymakers.

Philosophers such as Douglas (2009) state that instead the value-free ideal is unattainable and also undesirable. Values are a vital component of steering science and are involved in every step of the production of science. Scientists for example have to make value-laden methodological decisions that affects the likelihood of hypotheses being rejected or not. Therefore it is not reasonable to expect scientists to leave all of the social considerations to the policymakers (Douglas, 2009).

Under the line of thought of Douglas the meddling of values in science does not necessitate the removal of objectivity. However, values do become a problem as soon as scientist and policymakers are not transparent about them (Douglas, 2009). This would namely cause the impossibility of tracing how someone's values has influenced their decision-making, which is especially important when it comes to policymakers since they construct public policy.

6.2 Values in measures

Within the performed research regarding different measures for capturing well-being, the view of Douglas (2009) is the most suitable. Since all the different measures have been constructed by using different types of methodologies and hence reflect value judgements what should and should not be included in the measure. The construction and operationalization of these measures thus implies the necessity to make value-laden choices, which goes against the attainability of value-free science. This point is further illustrated by the different interpretations of how non-standardized measures such as GPI should be adapted to local context (Andrade & Garcia, 2015; Brown & Lazarus, 2018; Forgie & McDonald, 2013; Guan et al., 2024; Ostergaard-Klem & Oleson, 2014).

The problem arises when the values which are embedded in scientific research are not being made transparent, while giving the impression that the research is value neutral (Douglas, 2009). This is especially applicable to the construction of measures since it involves a construction through which the world is analyzed and represented. Consequently, measures have the ability to shape our perspective on the world. When the values which have influenced the construction of the measures are not being made explicit, this has a partly unconscious value transfer as a result.

GDP

The absence of transparency of values in measures may decrease clarity of what the measure aims to do. A concerning example is GDP, where a narrow measure of market performance is confused with broader measures of welfare. This is problematic since what is measured affects what public policy is implemented. If the measurements are flawed this could imply that decisions based on these measures are distorted (Stiglitz et al., 2009).

When looking at implicit value transfers of GDP it can for example be observed that it promotes an extractive and mechanical perspective on nature. GDP is a measure of flow, meaning that it measures the goods and services produced within a certain time frame. As opposed to measuring stocks, which refer to the accumulation of resources and capital within a certain timeframe, such as natural resources. Since GDP ignores the value of stocks, decisions based on GDP have contributed to the unsustainable consumption of non-renewable resources and promoting short-term policies (Fioramonti, 2017).

Gross National Happiness

Bhutan is one of the only countries that combats this perspective by not having GDP growth as primary national goal. Instead, in 1972 the measure of Gross National Hapiness (GNH) was created and deemed the most important metric (Givel, 2015). This metric serves as a means to determine the success of Bhutan society, while not purely relying on economic goals. It involves 9 different domains that concern economic, social and environmental factors (Musikanski, 2014).

One of the main building blocks of GNH is the embracement of environmental conservation. Thereby stating that the environment is a key determinant of achieving happiness and a sustainable future. Due to the dominance of GNH in Bhutan, the protection of the environment is ranked as a high priority in Bhutan's national development policy and strategy (Tshewang et al., 2021). This is illustrated by Bhutan being the first country to absorb more CO2 than it produces. Due to keeping more than 60% of the nation's land reserved for forest, Bhutan absorbs three times the CO2 it produces (Hossain & Jami, 2023).

While a significant part of the state of affairs within a nation can be attributed to the performed public policy, it is evident from the previous examples that measures can play a significant role in informing these policies. The examples of GDP and GNH are not used to give a notion on which measure is 'better'. Rather, it is meant as a means to illustrate the importance of the underlying values that are at the base of the construction and implementation of these measures. Such that the values incorporated in the measures which are ranked as the primary national goal correspond with those values the majority of the population hold.

6.3 Value of the capability approach

Regardless of the debate to what extent values should be incorporated into science, it is important to have open discussions how not only values influence science, but also how the reflected values in that science in turn influences the perspectives of humans. Without an open and transparent reflective process these effects are not being made explicit which causes an unconscious influence on our worldview. In turn this constrains the possibility for critical thought and discussions on what values society deems important.

Especially with dominant measures such as GDP this becomes troublesome. In this case, it namely promotes a worldview in which the incorporated goods and services are reduced to their market value, thereby ignoring their intrinsic value. In of itself this is not problematic, it can however be argued that in the case of GDP the underlying values and perspective it represents are not being made explicit. Hence it influences the worldview of different societies and populations without a substantial part being aware of this.

Within this issue the added value of the capability approach becomes apparent, this time not as a tool for measuring welfare, but rather through the procedural suggestions it contains. The capability approach namely states that its framework should be subject to continuous revision, and the capabilities which are deemed important should be selected through a participatory democratic process (Nussbaum, 2011; Robeyns, 2006).

These are important characteristics which could contribute to making the embedded values in measures more explicit. Similarly as Douglas (2009) it is not proposed that these values are an inherently negative influence on the credibility of these measures. Instead, the notion is adopted that values are necessary in order to construct and apply measures based on what society decides upon. However, for this to be realized there first needs to be a democratic participatory process through for example discussions, to determine what it is that we value.

In the case of analyzing the current dominance of GDP in economic policy this would mean that discussions are held whether this dominance is justified. Moreover, the use of GDP as a measure of well-being could be discussed. While also discussing what implicit values are embedded in GDP and how a GDP based perspective influences one's view on well-being. When the outcome is that the dominance of GDP is not justified, discussions could then ensue what values alternative measures should contain. This approach could then result in a new priority ranking regarding welfare measures, such that the measures predominantly used to inform public policy better reflect the values of the population.

7 Conclusion

This thesis had as an aim to answer the question whether the capability approach as a measure of well-being is better able to combat climate change than GDP. The capability approach is a framework that looks at the different capabilities, functionings and freedoms one possesses in order to determine one's well-being. Capabilities refer to the doings and beings one can achieve if they choose to do so, while functionings are capabilities that have been realized (Robeyns et al, 2023). It criticizes the utilitarian approach of economists within welfare economists (Sen, 1979). Rather than being a proxy of welfare, the capability approach merely sees economic value as a factor of human well-being,

Despite its broad influence in human development, the capability approach is subject to several criticisms. Most notably, the versatile, complex, and subjective nature of the framework make it challenging to operationalize the theory in an appropriate measure. However, this challenge does not decrease its value as a normative framework. Neither does it decrease the necessity to develop more accurate measures of well-being. The capability approach is an important step in embedding a more holistic approach to welfare in public policy.

As a theory of humanitarian well-being the central list of capabilities consider a wide array of capabilities which are important for one's well-being (Nussbaum, 2011). This list however lacked a capability accurately reflecting the far-reaching influence climate change and the environment can have on human well-being, as illustrated in this thesis and in Holland (2008). To account for this, a new central capability has been proposed: 'environmental impact', the capability to live a life devoid of dangerous (human) induced environmental impact. With this, the capability approach increases its relevance as a framework which is able to inform public policy also in the future.

In order to assess to what degree GDP and present alternatives conform to the capability approach, an analysis was performed. Results indicated that since GDP is not able to differentiate between economic activity that promotes or harms social and natural capital it is a poor predictor of well-being. GDP is further restricted in serving as a measure of a capability functioning since it only measures goods and services in the market. This ignores the added societal value that informal goods and services such as household care have.

While GPI and HDI both score significantly better in terms of measuring well-being, they to have their shortcomings. GPI is a non-standardized measure and contains a wide range of indicators, this makes the measure difficult to operationalize and prone to subjective interpretations. HDI on the other hand resembles a too simplistic picture of humanitarian well-being, due to its limiting amount of considered indicators. Furthermore, HDI does not contain an environmental component, which significantly limits its (future) use as a measure of well-being.

These observations indicate that there is a certain tension between practicality and capturing the complexity of well-being. On this spectrum GPI is more complex and not very practical, while the HDI is practical but does not adequately capture the complexity of well-being. While techniques to further operationalize measures of well-being will continue to improve, it is important to not focus too much on 'the perfect measure'. Rather, a combination of measures should be used to assess the state of well-being within a country. This way, no single measure becomes too complex, while the combination of measures ensures that the complexity of well-being is not lost.

Furthermore, the implicit value judgements hidden in measures need to become more explicit. Otherwise these measures have the ability to unconsciously influence the worldview of people, especially with dominant measures such as GDP. Here the added value of the capability approach procedure becomes apparent, namely advocating for an open democratized participatory process. Through this process the hidden value judgements are exposed, while simultaneously evoking discussions what it is we value and how this should be reflected in measures.

It can be concluded that as a normative framework to inform public policy, the capability approach is a suitable alternative to GDP. It captures the complexity and variety of human needs, while not imposing a significant top-down interpretation of 'the good life'. Its abstract nature leaves sufficient room for adaptation based on local context. Furthermore, the procedural suggestions it makes ensures that the framework is continuously open to revision through a democratic process. These suggestions have a further relevance in ensuring that the measures and their associated dominance correspond with the indicators that we as a collective care about.

While the operationalizability of the capability approach remains a challenge, current advancements in statistical techniques are promising (Chiappero-Martinetti & Roche, 2009). The operationality challenge harms to what extent the capability approach currently is a suitable alternative to GDP as a measure. However, the difficulty of operationalizing the capability approach does not decrease the relevance of replacing GDP as a welfare measurement.

Although the capability approach is currently not in a state to completely replace GDP as a measure of well-being, this thesis has shown that the current dominance of GDP in public policy is misplaced. Although the state of an economy has some relation to well-being, it is misplaced to equate GDP with well-being. It is merely a factor of well-being as opposed to being a proxy for it. When future measures have sufficiently addressed the operationality difficulties of the capability approach, perhaps the ‘GDP paradox’ can finally be solved.

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