

# Weighing the World: Cost-Benefit Analyses of the Sustainable Development Goals

*This is a matter of scientific correctness versus political correctness*

– David Pearce, economist, on why lives should not all be valued equally in a cost-benefit analysis (quoted in Pearce 1995).

## Introduction

In September of this year, the UN General Assembly is set to finalise the Sustainable Development Goals (SDGs). These goals will take the place of the Millennium Development Goals (MDGs), which shaped the international development agenda from 2000 to 2015. Similarly, the SDGs are tasked to set the course for the world's development from 2015 to 2030. These goals are likely to affect the actions of many NGOs, governments, UN agencies, private companies and more, possibly affecting how billions of pounds are spent (United Nations 2014, §1-4). Much rides on how these goals are formulated.

Over the past few years, there has been considerable debate over what the SDGs should be, with input from a vast range of sources. Among these, the most influential is the Open Working Group (United Nations 2014, §43). Put together by the UN, this group includes delegates from over 70 UN countries, a vast number of NGOs and other stakeholders, and has over the course of 13 three-day sessions in 2013 and 2014, reached a consensus. This consensus is presented in their outcome document, outlining their proposed goals (Open Working Group 2014, §1). These goals have a number of important features. Firstly, unlike the MDGs, the goals apply to all countries, even developed countries. Secondly, whereas the MDGs mainly concerned poverty, education and health, the proposed SDGs concern many additional issues, including biodiversity, carbon emissions, inequality, governance, air pollution, infrastructure and more. Thirdly,

the proposal includes a large number of goals: 17 overarching goals, with a proposed 169 measurable targets (Open Working Group 2014; Tiwari 2014).

For some critics, this is too many. They worry that when goals are so numerous, they are unlikely to be met (High Level Panel 2013, 15). Commentators have suggested that “169 targets risk being unimplementable, to put it mildly” (Norton & Stuart 2014), and Bjorn Lomborg, founder of the Copenhagen Consensus Center, suggests that “having 169 priorities is like having none at all” (2014c).

The Copenhagen Consensus Center (CCC) argues that cost-benefit analysis (CBA) is one important method of deciding between the proposed goals. The CCC – the organisation whose work is the focus of this dissertation – is a think tank<sup>1</sup>, started in 2006, that “researches the smartest solutions for the world's biggest problems by cost-benefit, advising policy-makers and philanthropists how to spend their money most effectively” (Copenhagen Consensus Center). Typically, they do this by commissioning CBAs from economists to answer the question of how the world’s development aid budget could do the most good possible.

Put simply, a CBA consists in three stages: first, one predicts the effects of the policy/policies. Second, one converts the value of all the effects into one metric, usually \$USD. This is done by looking at market-effects, such as the budget a government agency would spend implementing the policy, and by putting a value on non-market goods, such as years of healthy life. Third, one compares the relevant policy either to a comparison policy or to a situation where no policy was adopted (Hansson 2007, 166; Boardman et al 2011, 5-6). Dividing the benefit by the cost produces a benefit-cost ratio (BCR), which suggests how many units of benefit each unit of cost brings. A BCR of 30 means that every dollar spent on that project produces 30 dollars of benefit. Having produced these

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<sup>1</sup> They are funded by private and public donors (including DfID), but refuse donations from fossil fuel companies.

CBAs, the idea is that one can decide between the different goals and targets. For example, a low BCR – that is, below 1 – may be a reason to remove a goal, and a high BCR may be a reason to keep a goal. In this dissertation, I will predominantly focus on the second step in this process; that is, how one determines what dollar-values to attach to goods.

The CCC not only argues that CBAs should influence the SDGs, they also produces them. In a project they call the “Post-2015 Consensus”, they have commissioned a large number of CBAs and accompanying papers from economists of the proposed SDGs. They have also compared and summarised the findings of these CBAs in an outcome document. In this document, their “Expert Panel” has picked out what they consider to be the best targets, given their BCRs, but also the strength of the evidence-base and the uncertainty involved (Lomborg 2014b, 5). Prior to this work, only one CBA had been conducted on a small subset of the SDGs (UNU and UNOSD 2013; Lomborg 2014b, 6).

The Post-2015 Consensus is an ambitious project. Firstly, it has involved a tremendous amount of work. Over 18 months, the CCC published 100+ peer-reviewed analyses from 82 economists and 44 sector experts, including NGOs and UN agencies on their website (Lomborg 2015, 10). Secondly, it is ambitious in the scope of the CBAs produced. The CBAs consider a tremendous range of benefits, from health, education, the environment to economic growth and more. As such, the CBAs also enlist economists from many different sub-disciplines. Moreover, the project is ambitious in its geographical scope. Few CBAs attempt to find the costs and benefits from policies that will affect the whole earth’s population. Thirdly, the CCC’s goal is ambitious: changing the SDGs. It is this ambition that makes the CCC’s work interesting. In particular, due to the large number, wide scope and diversity of the CBAs it has carried out, it provides an interesting case study on the role of values in social science, policy-making and consensus building.

In Part I of this dissertation I explore what sort of project the Post-2015 Consensus is. Moral philosophers discussing CBA tend to take it literally – as a procedure for settling on the right policy-decision – and typically criticise it as such. Historians, for instance Ted Porter, have, on the other hand, represented CBA as a way of avoiding moral controversy by replacing judgment with impersonal procedures. In my view, neither approach is helpful for this case – the Post-2015 Consensus and the CCC have several competing goals and any critique should take that into account. What sort of critique does this warrant?

In Part II of this dissertation, I move into more normative territory, providing such a critique. One of the most controversial features of the CCC's CBAs is whether they exhibit *wealth distortion* – where the welfare of rich individuals is valued more solely because of their wealth. Wealth distortion is on the face it morally wrong, but how wrong and what to do about it depends on what other objectives the CCC has, or so I argue. The economist I quoted in the epigraph is wrong to drive a wedge between scientific and moral correctness, but moral correctness in this case is more complicated than some have argued.

## **Part I: What is the CCC's Post-2015 Consensus?**

In this part, I want to first describe the process that the CCC uses to produce their CBAs (1.1). Secondly, I show the results of the CCC's work (1.2.). Thirdly, I will describe the goals of the CCC in this context (1.3). Fourthly, in 1.4., I consider the CBAs<sup>2</sup> in light of Ted Porter's influential account of CBA. I argue that the CBAs should not solely be viewed as attempts to replace judgment for impersonal procedures.

### **1.1. The CCC's Process**

Since 2006 the CCC have on three other occasions produced consensuses similar to the Post-2015 Consensus, asking economists how several billion dollars could do the most good for the world (Lomborg 2014b, 3). All of these consensuses have been produced following roughly the same process. In short it is as follows:

Step 1: Commission the CBAs

CBAs on a number of different topics are commissioned. In the case of the Post-2015 Consensus, the topics were chosen according to the topics that had been discussed by the Open Working Group. The analysts are considered experts within their fields, and come from a wide range of institutions, though primarily universities (Lomborg 2015, 12).

The CBAs are commissioned with some constraints. Firstly, they are to answer specific questions. In the Post-2015 Consensus, the CBAs' task was to suggest the BCR of the Open Working Group's suggested targets, in addition to identifying the best targets within the topic. Given this last provision, some of the CBAs analyse targets that have not been proposed by the Open Working Group (e.g. Markandya 2014).

Secondly, there are constraints regarding the parameters used in the CBAs. The first of these relates to the discount rates used. This is the rate at which the value of goods

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<sup>2</sup> Throughout, "the CBAs" refers to the CBAs that are part of the Post-2015 Consensus.

decreases over time. The CCC instructs its analysts to use two values for the discount rate: 3% and 5% per year. The reason two values are suggested is that they wish the analysts to produce a *sensitivity analysis*, where the results of the analysis are shown given the 3% and the 5% values of the discount rate. The other constraint is that the analysts include specific values for Disability-Adjusted Life Years (DALYs)<sup>3</sup>, a measure of health: \$1,000 and \$5,000<sup>4</sup>. Again, they are instructed to include a sensitivity analysis (Lomborg 2013, 3; Jha et al 2014, i).

#### Step 2: Peer Review

The CCC has a peer review process in place.

#### Step 3: Response Papers

In addition to the peer review, the CCC publishes response papers along with the CBAs. In the Post-2015 Consensus, there have typically been 3-5 response papers to each CBA. Some of these are written by other economists, who will at times provide their own CBAs, given different assumptions (e.g. McVittie 2014). Other response papers have been from stakeholders in the field, predominantly NGOs.

#### Step 4: Expert Panel

The last step is that all of the CBAs are used to produce a overarching outcome document. This is done by an expert panel, in the Post-2015 Consensus consisting of three high-profile economists: Nancy Stokey, and Nobel Laureates Finn Kydland and Tom Schelling. Looking at all of the CBAs, they have picked out the 19 targets they think would provide the highest impact. This step is not a simple matter of choosing the targets that

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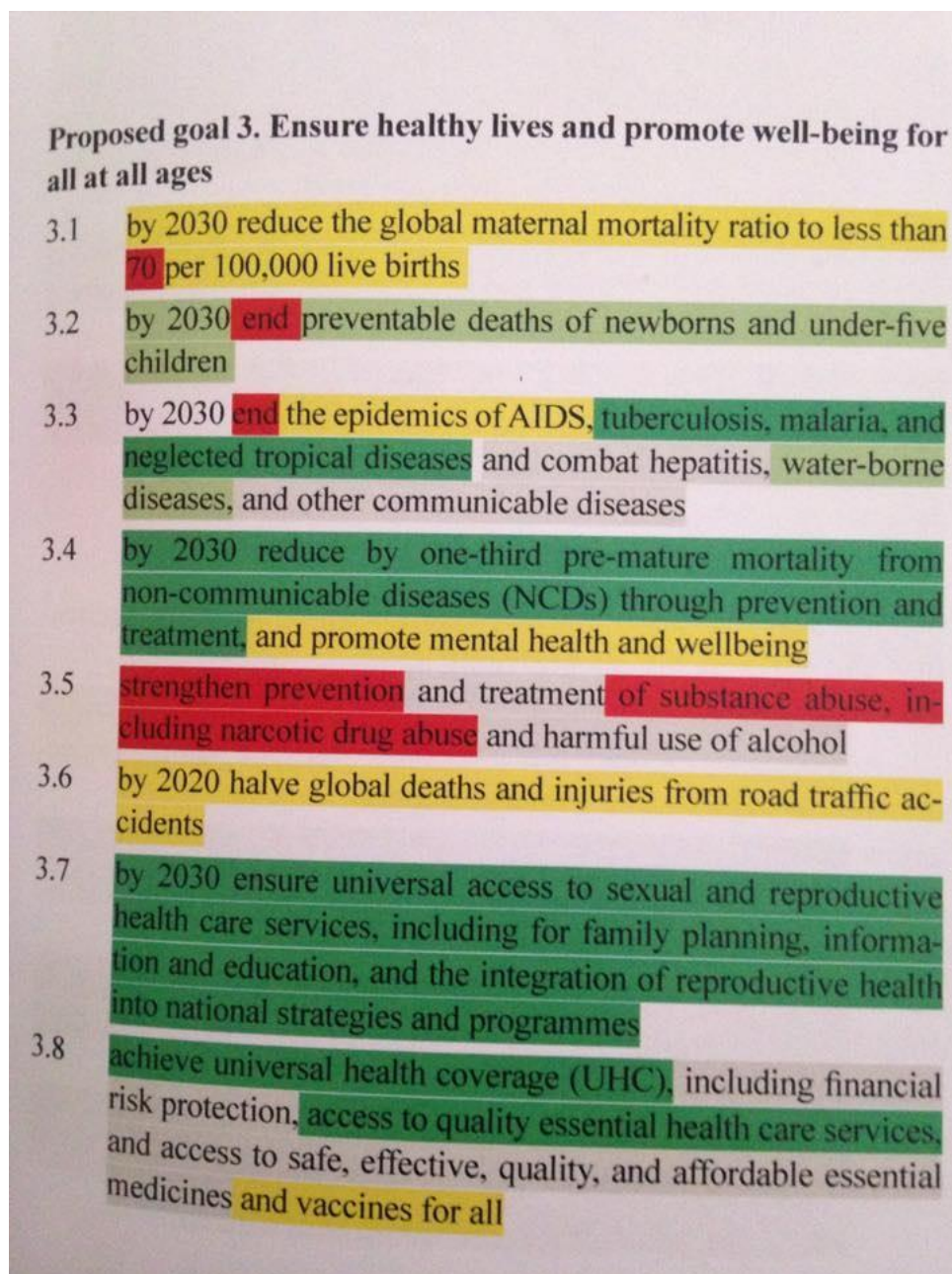
<sup>3</sup> DALYs are Disability Adjusted Life Years. They measure two things: years of life lost and years of life lost to disability. The latter comes from a measure of ones healthiness given different health states, such that a year of life lived wholly without disability or illness is 0 DALY and one with disability or illness is somewhere between 0 and 1. The measure is frequently used in measuring health on an international scale, most notably in the Global Burden of Disease Project (Murray et al 2012, 2064).

<sup>4</sup> Since DALYs measure the *absence* of healthy life, such that to improve health is to *avert* DALYs, the valuations are in reality *negative* \$1,000 and \$5,000. However, for the sake of simplicity, I will talk of DALYs as if they are a positive.

received the highest BCRs. Instead, the expert panel takes into account the quality of evidence in the different CBAs along with the accuracy of the assumptions involved (Kydland, Schelling & Stokey 2015, 105-108; Kydland et al 2013, 702).

## 1.2. The Post-2015 Consensus Results

To understand what is at stake, it is useful to show the results of the Post-2015 Consensus. There have been two main outputs from the project. First, there have been assessments of the targets suggested by the Open Working Group. These results have



been illustrated with a traffic-light scheme shown in Figure 1. Targets that have

## PEOPLE

- LOWER CHRONIC CHILD MALNUTRITION BY 40%
- HALVE MALARIA INFECTION
- REDUCE TUBERCULOSIS DEATHS BY 90%
- AVOID 1.1M HIV INFECTIONS THROUGH CIRCUMCISION
- CUT EARLY DEATH FROM CHRONIC DISEASE BY 1/3
- REDUCE NEWBORN MORTALITY BY 70%
- INCREASE IMMUNIZATION TO REDUCE CHILD DEATHS BY 25%
- MAKE FAMILY PLANNING AVAILABLE TO EVERYONE
- ELIMINATE VIOLENCE AGAINST WOMEN AND GIRLS

## PLANET

- PHASE OUT FOSSIL FUEL SUBSIDIES
- HALVE CORAL REEF LOSS
- TAX POLLUTION DAMAGE FROM ENERGY
- CUT INDOOR AIR POLLUTION BY 20%



## PROSPERITY

- REDUCE TRADE RESTRICTIONS (FULL DOHA)
- IMPROVE GENDER EQUALITY IN OWNERSHIP, BUSINESS AND POLITICS
- BOOST AGRICULTURAL YIELD GROWTH BY 40%
- INCREASE GIRLS' EDUCATION BY TWO YEARS
- ACHIEVE UNIVERSAL PRIMARY EDUCATION IN SUB-SAHARAN AFRICA
- TRIPLE PRESCHOOL IN SUB-SAHARAN AFRICA



Figure 1. CCC's assessment of the Open Working Group's targets (Lomborg 2014a, 25).



Figure 2. The CCC's summary of the Expert Panel (Copenhagen Consensus Center 2015).

phenomenal BCRs, 15 or above, are in dark green. Light green indicates a good BCR of between 5 and 15. Yellow indicates a fair target with a BCR between 1 and 5. Red indicates a poor target, with a BCR below 1. That is, every dollar spent on the target produces less than a dollar in benefit. Grey indicates that the evidence-base is too weak to evaluate the target. The different colours on words within the targets indicate the value of the goal if it were changed to some extent. For example, target 3.2. is poor if it suggests that preventable death of newborns should be ended, but if reformulated to concern a large decrease, then the target is good<sup>5</sup>.

Secondly, the expert panel has synthesised the CBAs into a report. Here, they have picked out the 19 targets they believe are the best according to the available evidence. The targets all have BCRs over 15. Figure 2 is a page from that report.

### 1.3. The CCC's Goals

What is the point of these reports? When philosophers typically examine CBA, they concentrate on its moral presuppositions about the nature of goods and how to trade them off against each other (see e.g. Haybron & Alexandrova 2013; Anderson 1993; Sagoff 1988; Adler & Posner 2006; Nussbaum 2001). I think that is too soon. First, we need to understand what these reports are meant to do. Perhaps they should not be taken literally, or at least not as straightforward exercises in ethics. They have several goals which I identify below.

*Communicative Goal:* It must be possible to communicate the output it in an effective way to policy-makers.

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<sup>5</sup> The CBAs often find that targets to *end* things such as poverty or hunger are poor. This is because of a last mile problem, where helping the vast majority of people in a group is less costly per person than helping all of them.

For example, it must be possible to communicate the output in a quick and easily understandable way to policy-makers. Otherwise, the output is liable to get ignored. The CCC works hard to fulfil this goal<sup>6</sup>. The list of 19 targets is easily communicable, and the CCC will typically present their methodology in a sentence or two. In addition, the BCRs produced are effective tools for communication. It is apparent that the CCC is concerned with how communicable their work is; remarking on the traffic light-system in Figure 1, they say that it can “crucially help the world’s busy decision makers focus on picking the most effective targets” (Lomborg 2014b, 4).

In order for the output to both identify good targets, but also to appear credible to policy-makers, it has to be scientifically rigorous. This means that a number of goals need to be fulfilled:

*Transparency Goal:* Outsiders and policy-makers are able to understand and investigate how the CBAs were produced.

The CCC shows their concern for this goal especially in their publication of the response papers. It is useful to them in improving the quality of their CBAs, seeing as with a transparent process, mistakes are more likely to be avoided: both as those producing the CBAs are aware that their work will be scrutinised and because outsiders may notice mistakes. Fulfilling this goal should also make the work appear more credible to policy-makers, as they may be using a heuristic that transparency increases the trustworthiness of a process.

*Expertise Goal:* The output represents the best opinion of economics.

The CCC tries to fulfil this goal by choosing what may be considered experts of the field, and by interfering only minimally in their work. This goal seems to be the most important to the CCC’s work. It is their claim to be representing the consensus of experts

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<sup>6</sup> On a terminological note, it may be useful to point out that all of the above goals may be satisfied by degrees. Below, I will therefore discuss degrees by which certain goals are satisfied or violated.

that gives them influence. Exemplifying this, those writing about the CCC will often point out that it works with seven Nobel Laureates (Rozen 2014; The Economist 2014). The CCC is keenly aware of the Expertise Goal's importance as well. Indeed, their book summarising the results from the Post-2015 Consensus is named "*The Nobel Laureates' Guide to Smarter Goals for the World*" (Lomborg 2015).

*Comparability Goal:* The CBAs need to be comparable to each other.

Exemplifying the reasoning behind this goal, it would be problematic if it was found that some CBAs systematically include less conservative assumptions than others, skewing the BCRs in their favour. One way in which the CCC has attempted to ensure comparability is to determine the value of a DALY and the discount rate<sup>7</sup>. Additionally, having the expert panel compare the CBAs not simply on their BCRs improves comparability. If the panel recognises that some CBA has considerably less conservative estimates than others, they can adjust for that. Indeed, they seem to have done so. For example, the CBA on biodiversity suggests that the BCR of reducing forest loss by 50% is between 30 and 137 (Markandya 2014, 10). This goal is not included in the Expert Panel's suggested targets, though its BCR is higher than that estimated of goals that are included (Kydland, Schelling & Stokey 2015, 106).

*Morality Goal:* the CBAs should be based on assumptions that are morally justifiable.

This is the goal that philosophers tend to focus on. There is some evidence that the CCC adheres to this goal in that they have – as I will explain in more detail in Part II – justified their decision to have CBAs use a single value of health on moral grounds (Jamison et al 2013, 399). However, Roland Mathiasson has also held<sup>8</sup> that this decision functioned to fulfil the Comparability Goal. Thus, I will grant that the CCC to some extent

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<sup>7</sup> In personal correspondence between Roland Mathiasson, Vice Executive Director of the CCC, and the author.

<sup>8</sup> In personal correspondence with the author.

pursues to this goal, but it is less weighty than philosophers think. This is not to say that the CCC is indifferent to moral arguments. Rather, they may be outsourcing their moral judgments to the analysts. They may not see it as their role to be activists. Much like the role of the judge may be to simply apply the law, the CCC may see its role as one of simply finding and reporting the economists' consensus, not one of shaping it. This may mean that they only want to go against the Expertise Goal due to the Morality Goal in exceptional cases.

In summary, the CCC aims to be as neutral as possible about policy-issues. They want merely to be conveners and communicators of a consensus. They do not want to claim that the results of their analyses are the final word on what the SDGs ought to be, but merely answers the question of what goals are likely to have the highest social benefits, allowing that political and rights-based considerations may also legitimately inform the choice of SDGs (Lomborg 2014b, 4). Trusting that economists are likely to be well suited to estimating the social benefits of the goals, the CCC's strongest claim seems to be that such a consensus should play a large role in deciding on the SDGs. They want to avoid interfering with the CBAs as much as possible, but seem to recognise that some interference is necessary to allow for comparability, transparency, morality and communicativity. None of this means that the CCC's CBAs should not be criticised on moral grounds, but such criticisms should be sensitive to the nature of this exercise.

#### **1.4. The Social Role of CBA**

Unlike philosophers who discuss CBA in reference to the Morality Goal, historians, notably Ted Porter, have focused on its political role.

##### **1.4.1. Porter's View of CBA**

Ted Porter (1995) describes the history of CBA from the 1920s to the 1960s as follows. In the 1920s and 1930s, there were a number of US agencies, such as the US Army Corps of Engineers, that conducted what can be considered early versions of CBA. These

analyses typically evaluated water projects, e.g. where to construct a dam. In this time, these results were largely uncontroversial and they were often accepted on authority alone. This changed in the 1940s, however, when different agencies started coming to different conclusions on the merits of specific water projects. In particular, the US Army Corps ended up in a “bitter controversy” with the Department of Agriculture and the Bureau of Reclamation (Porter 1995, 149). These different results stemmed from methodological differences between the agencies’ CBAs, and so in an attempt to resolve their conflict, they formed the Federal Inter-Agency River Basin Committee, tasking it with harmonising their methodologies (Porter 1995, 182-185). However, they found no way to unify their methodologies. Having found this to be the case, they turned to economic theory to get a basis for CBA; that is, to ignore their previous methodologies and develop a new version of CBA. In the 1950s there was serendipitous convergence, as this was the time of the beginnings of welfare economics. This could then form the basis of the new version of CBA (Porter 1995, 187-189).

This new version of CBA was founded on roughly the same principles as the current textbooks suggest CBA is based on. The standard textbook view of how benefits ought to be valued<sup>9</sup> in a CBA is to say that the value of non-market goods is defined as individuals’ willingness to pay for that good (Mishan & Quah 2007, 169). The value of cleaner air cannot be gleaned from how much people pay directly for cleaner air, since there is no way to simply buy and sell it: there is no market for clean air. However, the view is, the value of clean air to an individual is how much a person *would* pay for it if they could buy it: their *willingness-to-pay* (WTP).

There are two ways in which WTP is typically measured. Firstly, one may attempt to find real-world cases where people make the relevant choices. Being interested in the

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<sup>9</sup> There are other crucial aspects to the textbook view of CBA, but in this dissertation I focus on how CBA values goods.

value of wellbeing increases from improved health, one simply looks at how much people are willing to pay to improve their health. This is called the *revealed preference-approach* (Boardman et al 2011, 341). It is used predominantly in the US, but it is also used to some extent in some European countries. Secondly, one may ask people how much they *would* pay for a certain good to measure its impact on wellbeing. This is the *stated preference-approach* (Boardman et al 2011, 372). Developing this approach, a vast number of surveys have been conducted, asking participants what they would pay for different goods. This approach is predominantly favoured in European countries (McVittie 2014, 3).

Porter suggests that following the WTP-approach is partly an attempt to aim for the *ideal of mechanical objectivity*, where one attempts to replace judgment with mechanical procedures (Porter 1995, 5). This is because the approach seems to give clear instructions as to how economists ought to value goods and carry out their analyses (Porter 1995, 189). Following this approach, the thought is, keeps the economists from making value-judgments themselves. Instead, they outsource the making of value-judgments to the public or those that would be affected by the policy under consideration, which some call the “basic axiom of mainstream economics” (Mishan & Quah 2007, 194).

The ideal of mechanical objectivity is important because it serves certain political purposes. Porter notes that CBA “was intended from the beginning as a strategy for limiting the play of politics in public investment decisions” (1995, 189). In particular, it avoids settling political disagreements through deliberation or by judgment, solving it by following a procedure instead (Porter 1995, 74). Additionally, the ideal is useful since it lends credibility to the policy-maker that acts upon its recommendations. That is firstly because the perceived impartiality, connected to mechanical objectivity, commands credibility. The recommendation is not merely based on someone’s idiosyncratic judgment, but on a well-defined procedure. Secondly, the recommendation will be based on quantification, which by itself lends credibility, “even when nobody defends [its] validity with

great conviction” (Porter 1995, 8). As the title of Porter’s book suggests, we tend to trust in numbers (Porter 1995).

This ideal is of particular importance in debates over CBA. Firstly, because economists seem to take it seriously, frequently worrying about whether certain methods are “arbitrary” or “subjective”, as I will discuss further in 2.2. Secondly, critics of CBA often rely on Porter’s view of CBA, criticising it for being a tool to avoid political discussions of the difficult questions, hiding controversies instead of resolving them (Porter 1995, 6; Sinden, Kysar & Driesen 2006, 56; Ackerman & Heinzerling 2004, 233-234).

#### **1.4.2. Limits to Porter’s Account**

Though Porter’s account is useful, it has some limitations. This is because both the economists conducting the CBAs and the CCC seem to fall short of the mechanical objectivity ideal<sup>10</sup>. There is in fact plenty of heterogeneity among the CBAs as I will show. They are only based in the same theory insofar as they all take WTP to be good evidence of improvements in welfare, and they have some degrees of freedom in their valuations, undermining Porter’s mechanical picture. However, Porter’s account of the political usefulness of the mechanical objectivity ideal does suggest why the Expertise Goal is of particular importance to the CCC.

I will present two particularly useful examples, illustrating how economists carrying out the CCC’s CBAs are not wholly following the mechanical objectivity ideal. First, at least two of the CBAs value benefits from time savings in a way not compatible with the WTP-approach. These time savings appear in the CBAs of air pollution and sanitation (Larsen 2014; Hutton 2014). In the former case, it is argued that part of the benefit from replacing stoves that use solid fuel, such as wood, with gas stoves<sup>11</sup> is that it saves on time spent

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<sup>10</sup> It is worth noting that Porter does not think that it is possible to fully adhere to the ideal, saying that “the ideal of mechanical objectivity is never fully attainable” (1995, 5). However, Porter’s view seems to be that economists are closer to the ideal than the CBAs suggest.

<sup>11</sup> Larsen discusses stoves since solid fuel stoves are a major contributor to indoor air pollution in the world.

collecting wood. In the latter case, it is argued that time is saved when more toilets are installed in developing countries as people would have to spend less time walking. In both of these cases, the time saving benefit is not estimated using either revealed or stated preferences. Instead, these CBAs estimate the benefits as a fraction of the countries' average wage. They take the average hourly wage and reduce it since the time saved is not spent working and reduce it further since those who will gain the benefits are not likely to be in a high-income group. This approach has been criticised in a response paper for not being "theoretically correct" (Whittington 2014, 7), seeing as it does not follow the WTP-approach.

This example illustrates three departures from Porter's view. It illustrates heterogeneity within CBA practice seeing as it is used in two of the CBAs, while others hold that the approach is theoretically incorrect. It also illustrates quite a willing departure from the WTP-approach. The authors of these CBAs do not even mention that their analysis departs from the WTP-approach, seemingly treating it as a source of evidence among others. In addition, these time savings valuations illustrate that analysts have some freedom in how they develop their CBAs. For example, the factors by which they decreased the average hourly wage are largely arbitrary – why should one reduce the benefit by half, and not a quarter, since the time lost is not time spent working? – something these CBAs have been criticised for (Whittington 2014, 7-8).

In addition, these studies show some arbitrariness in how one chooses to estimate the value of certain benefits. The air pollution and water and sanitation CBAs estimated the benefits of these interventions by their time savings and health effects (Larsen 2014, i & 6; Hutton 2014, 14). But what kept them from using data regarding people's willingness to pay for better access to sanitation, for example? This is particularly interesting since studies seem to suggest that people are willing to pay very little to stop the practice of open defecation, because it is ingrained in their culture (Whittington 2014, 3-4).



Presumably, it was because the analysts thought that ending open defecation would be a good thing, even though the target population do not currently believe that this is the case. Though this judgment seems to me correct, its necessity illustrates how economists are not merely following a mechanical procedure.

The second example illustrating the same divergences from Porter's account is the way that the CCC asks the CBAs to measure health benefits. Instead of holding that the value of an improvement to health depends on a person's WTP, they ask the CBAs to value all improvements to health equally (Lomborg 2013, 3; Jha et al 2014, i). As I will explain in Part II, this way of valuing health benefits is far from the WTP-approach.

These examples illustrate that it is better to think of economists as following an *evidential* version of the WTP-approach rather than a *principled* one. Daniel Hausman and Michael McPherson have argued that the best *justification* for the use of WTP data is an evidential one: that WTP is good evidence of increases in welfare (Hausman & McPherson 2009). My claim is that this evidential view is followed by economists<sup>12</sup>. That is to say, they see WTP as evidence of the valuation of a welfare benefit. When strict adherence to the WTP-approach produces results that do not seem accurate, such as in the open defecation case, economists will not follow the results blindly.

This suggests that what Porter claims was a unification by agreeing to a theory was in fact, or has at least morphed into, a unification by agreeing on some *rules of thumb*. These rules of thumb include:

“Use a non-arbitrary procedure to find the value of goods”

“Citizens often know best what is good for them”

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<sup>12</sup> Interestingly, this descriptive claim may support claims regarding the normative status of CBA. Firstly, economists adhering to the evidential view may give some support to Hausman and McPherson's evidential justification of WTP. Additionally, economists not following the WTP-approach strictly makes critiques of the WTP-approach less radical.

This does not mean that economists are wholly divorced from following the mechanical objectivity ideal. Instead, it suggests that they recognise that, sometimes, the procedures are not enough<sup>13</sup>.

This first part of this dissertation has been descriptive in nature. I have described the Post-2015 Consensus process in addition to its results. I also presented a framework for thinking about what the CCC's goals are. Investigating the philosophical underpinnings of the CBAs in the Post-2015 Consensus, I suggested that they differed significantly from the textbook view of CBA, along with the picture presented by Porter. In the next part of this dissertation, I will conduct more normative work. I will discuss whether the CBAs are discriminating against the poor in valuing benefits based on WTP, and if so, what, if anything, ought to be done about it.

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<sup>13</sup> Another way this ideal is still relevant to the CCC's work is in describing the source of its influence. It is incredibly important to the success of the CCC that their work is viewed as, and is, close to the ideal of mechanical objectivity. Getting close to such an ideal, the CCC may be viewed as an impartial input into the debate over the SDGs, distinguishing them from other actors who may appear to have their own agenda or be prejudiced in some way. It is this ideal then that suggests why the Expertise Goal has such weight. However, it is worth noting that the CCC fails to reach the ideal, seeing as they are not merely reporting the views of economists, but shaping the consensus to some degree, for example by requiring specific values of parameters in the CBAs.

## Part II: The Case of Wealth Distortion

In this part, I draw upon only one of the many critiques of CBA – that of wealth distortion<sup>14</sup> – because this critique takes the context and purpose of the CCC seriously. Most of the critiques of CBA focus on whether it meets the Morality Goal. For example, one set of critiques argue that CBA is mistaken in its focus on consequences, rather than other morally relevant factors such as rights (e.g. Nussbaum 2001) and the democratic process by which decisions are made (e.g. O’Neill & Spash 2000, 531). Another set argues that it is problematic to put prices on and compare such disparate goods as the environment and the economy (e.g. Ackerman & Heinzerling 2004; Anderson 1993). I will not discuss these critiques of CBA since the CCC recognises that concerns other than the consequences of goals may matter to the choice of SDGs (Lomborg 2014b, 4), but also because these critiques are largely external to the concerns of the CCC. They argue against what seems a firmly held belief of the organisation: that the choice of goals should be greatly affected by their consequences. Thus, these kinds of critiques mainly engage with those considering the work of the CCC, and not the CCC itself.

Another part of the literature discusses the extent to which CBAs manage to measure the relevant consequences. Some discuss the appropriate value of discount rates (e.g. Parfit 1984, 480-487; Adler & Posner 2006, 173-177). I will not be discussing discount rates, as the CCC seems to deal with the issue well. Others discuss whether the WTP-approach is a useful way to measure changes in welfare, i.e. how good people’s lives are. Some consider whether the WTP-approach relies on a mistaken definition of welfare (e.g. Sen 2001, 111; Loewenstein & Ubel 2008, 1797; Hausman & McPherson 2009), and others hold that preferences are elicited in poor ways (e.g. Kornhauser 2001, 216; Sunstein 2007, 22-28; Wolff 2011, 100). Others argue that even if WTP is based on a good definition of wellbeing, it exhibits *wealth distortion*, which means that it still does not

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<sup>14</sup> Also called “wealth bias” (Crespi 2013).

measure welfare accurately (e.g. Crespi 2013; Bronsteen, Buccafusco & Masur 2013, 1666; Stiglitz, Sen & Fitoussi 2010, 154). One reason I focus on wealth distortion, rather than more general attacks on the WTP-approach, is that the latter is a more appropriate attack on CBA as a whole, and not just the CCC, whereas the CCC could plausibly adjust for wealth distortion in their next consensus.

The critique of wealth distortion is therefore more likely than other critiques of CBA to be effective against the CCC. If the philosopher is to draw conclusions regarding whether an assumption should be changed or not, they must not only discuss whether the assumption in question satisfies the Morality Goal, but if it fulfils various political and pragmatic goals as well. Following this approach, I will weigh the Morality Goal against the other goals discussed in 1.3. to decide whether wealth adjustments – i.e. attempts to adjust for wealth distortion – are appropriate.

In 2.1. I present the puzzle of wealth distortion, using a historical example of when health benefits were not given a single value. In 2.2. I argue that is not clear whether adjusting for wealth violates or promotes the Expertise Goal. 2.3. argues that, if anything, the Morality Goal favours adjusting for wealth. In 2.4. I discuss how adjusting for wealth may affect the other goals of the CCC. And in 2.5. I consider how the different goals ought to be weighed against each other, finding that the CCC ought to adjust for wealth distortion. The discussion will not only answer this normative question, but will also explore how to navigate the tensions between the different goals of the CCC and will illustrate further the role of ethics in deciding how to carry out CBAs.

## **2.1. Wealth Distortion: A Puzzle**

To present the CCC's puzzle of wealth distortion, I will begin with a story of another high-profile scientific consensus: the Intergovernmental Panel on Climate Change (IPCC), which seeks to convey the scientific consensus on climate change. It is a story of how the

IPCC dealt with wealth distortion. It has some historical connections to the CCC's work, but functions in the main as a useful analogy to the CCC's situation.

### **2.1.1. A Historical Precedent**

In 1995, the publication of the IPCC's Third Working Group's report, tasked with estimating the social costs from global warming, was delayed (IPCC WGIII 1995, 2). The delay was due to a disagreement surrounding the valuation of a statistical life, that is the value of avoiding a death in a population<sup>15</sup>. In the original version of the report, the life of a person living in a rich country was valued at 15 times higher than that of a person living in a poor country. This valuation was arrived at using the WTP-approach: since people living in richer countries are, on average, willing to pay more to avert the risk of death, their lives were valued more highly (IPCC WGIII 1995, 10). Understandably, this caused controversy. The report was vetoed by China, Brazil, India and Cuba. The Indian Environmental Minister summarised their position saying the valuation method was "absurd and discriminatory". On the other side of the debate, David Pearce, one of the authors of the report claimed that the disagreement was "a matter of scientific correctness versus political correctness," holding that economists should be concerned with the former (quoted in Pearce 1995). And so, ought one have a single valuation of the value of health? Would doing so be against scientific correctness? Would not having one value be discriminating against the poor?

The disagreement can be summarised as one over which of the following principles takes priority:

*WTP Principle:* The value of a life is fully determined by the amount relevant agents are willing to pay for it (their WTP).

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<sup>15</sup> This is a slightly different measure than DALYs, since it does not take into account the number of years of life lost, nor the quality of those years of life. However, the technique used to value a statistical life is the same that is used to value a DALY, which means the discussion applies to the valuation of DALYs as well as statistical lives.

*Equality Principle:* All lives are equally valuable.

While the authors of the report held the WTP Principle, claiming that it was the scientifically correct option, the opponents held that the Equality Principle should take priority.

The opponents of the original report were correct. To illustrate why, it is best to think of the issue as whether the value a life or one dollar of WTP is constant across individuals. The original report held that a dollar of WTP is constant, while the opponents claimed that the value of a life ought to be held constant. The question thus becomes which of these is most plausible.

The most plausible option is for the value of a life to be held constant (Broome 2012, 164-165; IPCC WGIII 2014, 217; Adler & Posner 2000, 1126; Hausman & McPherson 2006, 22-23). This is because there is a perfectly good explanation of why the WTP is higher in a rich country than a poor country; and it is not that rich lives are more valuable than poor ones. The more plausible explanation is that people who have more money value their money less, not their lives more. In other words, there is a *diminishing marginal utility of wealth*. That is, the additional value one gets from some absolute amount of money decreases as one has more money (Sen 2001, 102; Sunstein 2007, 3). A five pound note can seem like a fortune to a child, while their parent may see the note as small change<sup>16</sup>. The diminishing marginal utility of wealth provides an explanation of why the WTP Principle may lead to *wealth distortion* – when the preferences of a person or group are valued more solely because of differences in wealth.

One may object that the value of a life is not at all constant. A life lived with depression is less valuable than one lived without it, for example. Likewise, one may

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<sup>16</sup> Beyond the diminishing marginal utility of wealth being intuitive, there is strong evidence from subjective wellbeing research on it (Frank 1997, 1832; Popp 2011, 113-114). This is research where one studies people's self-reported happiness, either by asking about how a person rates their overall life, or how they rate their moment-to-moment mood.

argue, a year of life in a rich country may be more valuable than one lived in a poor country. Indeed, this is part of the reason we want to reduce poverty; because people's lives would be made better if they did not live in poverty. All of this is true. However, it is not a good argument for the WTP Principle. The debate does not concern which of the WTP Principle and the Equality Principle is *true*. Rather, it concerns which of these principles is more accurate and should guide CBA. The purpose of the argument in the previous paragraph was therefore not just to show that the WTP Principle is false, but that it is a worse approximation than the Equality Principle (Broome 2012, 165).

In the end, the publication of the report was delayed (Pearce 1995) and the report was redrafted, where there was significant discussion regarding the issue. Additionally, a sensitivity analysis was provided where the costs of global warming were shown given a single value of a statistical life and given a WTP-based valuation (IPCC WGIII 1995, 196-197). Subsequent reports from the IPCC use one value for all statistical lives (IPCC WGIII 2014, 227).

The CCC asks the authors of the CBAs to use single values for DALYs. They are asked to provide a sensitivity analysis, where they show what the BCR of their analysis is, given a \$1,000 or a \$5,000 value for a DALY (Lomborg 2013, 3; Jha et al 2014, i). They have arrived at this value through much the same reasoning as I outlined above (Jamison et al 2013, 399). Because of the Equality Principle, they wish to have one value for a DALY. Deciding on that value, they use WTP data. The \$1,000 per DALY valuation is the WTP from the poorest countries in Sub-Saharan Africa, and may be considered a lower bound (Jamison et al 2013, 400).

There is no direct historical connection between the CCC's decision and the IPCC's, in that the IPCC case is not cited by the CCC. However, there is an indirect connection in that the IPCC is one of the most influential organisations that conduct CBAs in international contexts, discussing the value of a life (Viscusi & Aldy 2003, 56).

Furthermore, the IPCC provides a vivid case of when an organisation like the CCC ought to prioritise the Morality Goal over the Expertise Goal.

### **2.1.2. The CCC's Puzzle**

Given the above discussion, the CCC has made the right choice regarding the valuation of health. However, there are other goods for which the same argument that was mounted against the WTP Principle regarding health, can be mounted. By very similar reasoning, it seems that the valuation of these other goods is equally discriminatory. For example, in the CBAs discussed above where time savings are valued, they have country-specific values, based on average wages (Larsen 2014; Hutton 2014). Another example is monetary goods. In many of the CBAs, benefits are valued according to their monetary effects. For example, the value of trade liberalisation is estimated by its effects on GDP growth (Anderson 2014, 16). Additionally, the benefits from education are estimated by its likely effects on people's future wages (Psacharopoulos 2014, 8).

Just as it seems strange to say that the value of someone's health or life depends on the GDP per capita of their country, it seems strange to say that the value of their time does. What seems puzzling is that on the one hand, the CCC seems to recognise the diminishing marginal utility of wealth in providing one value for DALYs, while on the other, they do not take wealth distortion into account when valuing other goods.

One way to understand the worry is that the CBAs are *inconsistent*: that it is inconsistent to adjust for wealth regarding health, but not regarding other goods. This claim seems quite worrying. Firstly, it would suggest that a lot of work in policy economics is inconsistent, as this practice is common. Secondly, it would suggest that a lot of this work requires radical amendment; having one's analysis include an inconsistency does not seem desirable. John Broome seems to be implicitly endorsing this claim since he argues that one must either hold that the value of a life or a dollar is constant across individuals (Broome 2012, 164).



However, this claim is too strong. There *is* an inconsistency between having a single value for a DALY and holding that *all* benefits are identical to people's WTP. That is to say, there is an inconsistency between the single value and textbook CBA. However, given the amended view of CBA I presented in Part I, no such inconsistency needs to arise. If one holds that WTP is merely a good, but fallible, way to measure benefit, then one can happily allow the single value for DALYs. One may hold that WTP is a good measure of benefit in other cases, but that it is not a good measure of the value of health.

A better way to put the worry is that there is an *incongruity*. That is, the same evidence seems to be relevant to both cases: the diminishing marginal utility of wealth. In the case of the value of a DALY, it seemed wrong to have its value be relative to someone's income since everyone's life seems equally valuable, regardless of their income. In the same way, it seems that everyone's time should be somewhat equally valuable. Given that China's GDP per capita is 6 times higher than that of Sierra Leone (World Bank), this method far from values everyone's time equally. If the diminishing marginal utility of wealth provides evidence that CBAs ought to have a single value for health, then it should provide evidence that the value of a person's time should not be wholly reliant on WTP as well.

To see whether the CCC ought to adjust for wealth, I must investigate how doing so would affect their various goals. This section has given some reason to think that wealth distortion goes against the Morality Goal, but more on that later. Since the Expertise Goal is the weightiest goal, I will begin my discussion by considering it.

## **2.2. Would a Wealth Adjustment Satisfy the Expertise Goal?**

It is unclear whether the Expertise Goal is promoted or undermined by adjusting for wealth. First, I show that it is possible to adjust for wealth and still be engaged in good economics (2.2.1.). Doing so, I argue that it is possible to adjust for wealth without making inappropriate value-judgments and without it being arbitrary. Second, I consider whether

adjusting for wealth would go against the views of those economists who conduct CBAs (2.2.2.). I argue that though it seems common for CBAs to not include wealth adjustments, the reasons behind those decisions suggest that a wealth adjustment is appropriate in the present case.

### **2.2.1. Would a Wealth Adjustment Go Against the Principles of Economics?**

Many economists seem worried that wealth adjustments goes against some of the principles of economics. Relating this into the Expertise Goal, if a wealth adjustment clearly goes against the principles of economics, then adding one may come at the price of no longer being engaged in economics. One main worry in this vein is that the choice of what adjustment to use would be a subjective matter, and that economics should not engage in subjective matters (Mishan & Quah 2007, 13; Boardman et al 2011, 497-498). This worry can be spelled out in two ways: Firstly, it may be a worry that adding a wealth adjustment would be making a value-judgment that would be inappropriate for economists to make. Secondly, it may be a worry that there is no economically satisfactory way to establish what the adjustment should be.

The reason some economists think that wealth adjustments are a matter of values is that they think it is a matter of distributive justice: that is, concerns how to fairly allocate resources among individuals in a society. Notably, Lionel Robbins, one of the most influential writers on economic methodology, seems to have held this view, claiming that adjusting for wealth is “essentially normative” (Robbins 1935, 139). Following from this, the worry is that economists should not make value-judgments. Robbins worries this would have economists not engaged in science (1935, 149), but one may also worry about it because economists are not well-placed to make such judgments.

The problem with this argument is that adding a wealth adjustment would not involve economists making value-judgments<sup>17</sup>. If the task of the CBA is to capture the

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<sup>17</sup> Or at least not any more value judgements than are already present in CBA.

benefit that accrues to people given different policies, and there is diminishing marginal utility, then adding a wealth adjustment merely captures the benefit more accurately. Thus, adding a wealth adjustment would not be making a value-judgment, but carrying out the task of the CBA. It is a matter of distribution of *monetary gain*, not *welfare*. There are many theories of distribute justice, but few (if any) of them hold that the relevant metric of distribution is money. It therefore seems much more plausible to say that distribution concerns welfare rather than money. If so, then adjusting for wealth would not be a matter of distribution, but only an attempt to measure the benefits that will accrue to people.

Some of the resistance to wealth adjustments seems to rest on a confusion between two justifications for them. The one I have discussed in this dissertation is based on the diminishing marginal utility of wealth. However, one could also defend the inclusion of a wealth adjustment based on *egalitarian* concerns. Such concerns could be formulated in many ways. For example, one may follow *prioritarianism*, holding that the same absolute benefit in welfare to someone rich in welfare is worth less than that benefit accrued to someone poorer in welfare, prioritising the worse off (Parfit 1997). Though many have argued for this approach (Adler 2012, 307; Brent 1998, 53-54), I am only considering a non-egalitarian wealth adjustment.

The confusion seems to stem from “efficiency” being used in an ambiguous way<sup>18</sup>. Economists often define efficiency as when “resources, such as land, labor and capital, are deployed in their highest valued uses in terms of the goods and services they create” (Boardman et al 2011, 27). However, it is often left unclear what the “highest value” is measured in terms of. If efficiency concerns the maximisation of the benefit to people, then adjusting for wealth would merely get one closer to that goal. However, “efficiency” is often used to refer to increases in WTP. As an example of this confusion, David Canning argues

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<sup>18</sup> Another source of the confusion may be the unfortunate name “distributional weights” often used for wealth adjustments (Broadman et al 2011, 493).

against the CCC's single value of health – a kind of wealth adjustment – saying that though the single value is “egalitarian,” “in [BCR] calculations, the key issue is efficiency” (Canning 2009, 166). In this passage, Canning seems to misunderstand the purpose of the wealth adjustment, which is one of more accurately tracking the benefits to people, not to incorporate egalitarian concerns into the CBA. Another example comes from a textbook on CBA, where the authors suggest that wealth adjustments are “at variance with efficiency” (Mishan & Quah 2007, 13). However, this again assumes that efficiency is not a measure of the benefits that accrue to people or that the adjustment stems from egalitarian concerns.

Another common position amongst economists is that it may be good to adjust for wealth distortion, but that it is unclear how this should be done. This is the second way to parse the economists' worry about the subjectivity of wealth adjustments. They worry that there is no sufficiently rigorous way of finding the correct wealth adjustment, such that choosing one would be an arbitrary and unscientific matter (Mishan & Quah 12-14; Boardman et al 2011, 498). If this is the case, the Expertise Goal may be violated by adjusting for wealth, since economists ought not be engaged in making arbitrary judgments.

There are roughly three ways to adjust for wealth distortion. Firstly, one can follow the approach the CCC adopted for health. That is, taking other goods, such as time savings, one could give them equal value regardless of who the good falls to. This seems like the most conservative approach one could take.

Secondly, one may take a radical approach and abandon WTP altogether. The idea is that if one evaluates policies for example based on their effects on people's subjective wellbeing – that is, in terms of how happy people rate themselves to be – then wealth distortion is not likely to arise (Bronsteen, Buccafusco & Masur 2013; Dolan, Layard & Metcalfe 2011; Helliwell, Layard & Sachs 2015). The capabilities approach, which looks

at objective features of wellbeing, such as levels of education, political participation and freedoms, has the same advantage (see e.g. Comim, Qizilbash & Alkire 2008). Though this line of argument is interesting, I will not investigate it further here. One reason for this is that this approach violates the Expertise Goal too strongly. It would not be an amendment to the WTP-approach, but a wholesale abandonment of it.

Thirdly, one can put a general wealth adjustment factor into one's CBA. That is, one uses WTP, but adjusts all values using a diminishing marginal utility function. This function would describe a relationship between the benefit a person gets from a good and their level of wealth before receiving it. Once one has that relationship, all benefits can be adjusted accordingly. This approach has the virtue of dealing with wealth distortion across all goods. That is, introducing such a wealth adjustment, one can adjust for wealth distortion not only regarding time savings or health, but one could also adjust for it regarding benefits such as increased wages and economic growth. This is the type of wealth adjustment typically considered in these discussions (Adler & Posner 2006, 18; Boardman et al 2011, 489; Mishan & Quah 2007, 12; Brent 1998, 41-50) and is the type I will discuss for the most part in this dissertation.

While philosophers may stop their discussions at this point (e.g. Hansson 2007, 178), suggesting that a general wealth adjustment is desirable, economists seem to mainly worry about how to find out the shape of the diminishing marginal utility function (Mishan & Quah 2007, 46; Boardman et al 2011, 497).

There have been a number of suggestions as to how to find the shape of the function. Broome suggests that one may use data on the WTP for a DALY. The idea is that one assumes that a DALY is equally valuable for every person and that differences in WTP only stem from differences in the diminishing marginal utility of wealth (2012, 165). Another suggestion is that one adjusts all WTP measures in relation to their percentage of people's wealth (Crespi 2013). That is, someone living in the UK and someone living

below the poverty line derive the same amount of welfare from a good that they are willing to pay the same proportion of their income for.

Some economists may worry that these suggestions are not grounded enough in economic theory to be suitable. For example, one may worry that both of the above suggestions come from non-economists (Broome is a philosopher while Crespi is a lawyer). A more credible source of a wealth adjustment can be found in the Green Book (HM Treasury 2011, 91-94). The Green Book provides guidance on how all UK government agencies are to carry out their CBAs (HM Treasury 2011, 1). They provide tables suggesting by what factor to increase or decrease the value of a benefit depending on the wealth of the recipient. Additionally, they suggest that, “broadly, the empirical evidence suggests that as income is doubled, the marginal value of consumption to individuals is halved: the utility of a marginal pound is inversely proportional to the income of the recipient” (HM Treasury 2011, 93). They also cite theoretical work in economics that produce similar results (HM Treasury 2011, 93; Cowell & Gardiner 1999). If an organisation as conservative as the HM Treasury believes it is possible and prudent to adjust for wealth, then it ought to be a viable alternative for the CCC as well.

There are two remaining worries, suggesting that adjusting for wealth goes against the principles of economics. It seems that adjusting for wealth goes against the claim that interpersonal comparisons are impossible (Boardman et al 2011, 497; Robbins 1935, 137), in addition to the “the basic axiom of mainstream economics, that the only acceptable valuation of a good or bad is that placed on it by the individual affected” (Mishan & Quah 2007, 194). An interpersonal comparison is when one attempts, for example, to find out what benefits to person A would outweigh a certain cost to person B. Economists have worried about this problem for a long time, and I make no pretences to be able to solve it here. However, such worries should surely keep one from providing inputs into the current policy-decision in the first place, not change the kind of input one gives. The choice of

SDGs relies on making interpersonal comparisons. Rightly, the CCC does not seem to be worried about making interpersonal comparisons and even the critiques of the single value of health do not mention it.

Regarding the worry that economists ought to always rely on the judgments of the individuals affected, it seems extreme to hold this position as an axiom rather than as a rule of thumb. Intuitively, there are some cases where the individual's judgment of the value of a good should not be used in a CBA. For example, one may think that a CBA ought not to take into account how much people value things that are illegal. In Sweden for example, CBAs concerning the road system do not take into account the value of the time saved when people exceed the speed limit, even though the speeders likely believe the time saved to be valuable (Hansson 2007, 174). As argued in 1.4., economists already seem to be making judgments not simply based on theory, but also on common sense.

Summarising this section, attempts to suggest that wealth adjustments go against principles of economics – and therefore the Expertise Condition – fail. Adding a wealth adjustment would not be a matter of making a value-judgment, but merely capturing welfare benefits more accurately. The choice of wealth adjustment would not be an arbitrary matter: there is precedence and theory to work with. Lastly, economists ought not to worry about wealth adjustments assuming the possibility of interpersonal comparisons or implying that the WTP Principle is strictly false.

### **2.2.2. Would a Wealth Adjustment Go Against the Views of Economists?**

Another way to consider the question of whether a wealth adjustment would satisfy or violate the Expertise Goal, is to explore whether such an adjustment would go against the views of economists. This is another way that adding the wealth adjustment could violate the Expertise Condition. It is not wholly clear whether this is the case, as I will argue below.

Initially, it may seem that a wealth adjustment would quite clearly go against the views of the economists. Firstly, *any* demands from the CCC on how the CBAs are to be conducted may violate the Expertise Goal. This is because doing so involves the CCC replacing their judgment for that of the analysts. Secondly, the analysts did not choose to adjust for wealth distortion on their own accord. This may suggest that economists do not think such an adjustment appropriate. Thirdly, some of the response papers argue that the CBAs already adjust too much for wealth. The first example is David Canning's comments cited above (Canning 2009, 166), and the second is a response paper to the CBA on biodiversity, which provides an alternative valuation of forests, where their value is more dependent on the economic power of those living nearby (McVittie 2014, 4-5). Fourthly, as noted above, there is quite a bit of resistance to wealth adjustments within the economics community more broadly, and the majority of CBAs do not include wealth adjustments.

However, these considerations are not conclusive. This is for a number of reasons. Firstly, there are two ways in which one may violate the Expertise Goal. One way is simply in making some demand on what the analysis is to look like. This kind of violation is not too strong. For example, it was not strong enough to keep the CCC from making demands on the values of DALYs and discount rates. The stronger type of violation would be if the CCC demands the analyses are carried out in a way the analysts disagree with. Though the preceding paragraph presented a few reasons suggesting that this stronger violation is taking place, I will below present some reasons that suggest that there is no consensus against wealth distortions in economics.

A useful distinction to thinking about the opinions of economists regarding wealth adjustments, is between their *practices* and *their reasons for those practices*. On the practices-side, there are a number of examples of economists using wealth adjustments. As noted above, it is common practice to use a single value of health, which is a kind of wealth adjustment, and the Green Book includes a wealth adjustment. In addition to this,



many development economists seem to be in favour of adjusting for wealth. Indeed, Robert Brent suggests that there was a consensus among them as early as 1978 to include wealth adjustments in development CBAs (Brent 1998, 53). However, it seems that overall, it is more common for CBAs not to adjust for wealth.

On the reasons-side, though it is common practice to not adjust for wealth in CBAs, many CBA analysts implicitly hold that the CCC's CBAs ought to do so. For example, CBA textbooks often say that CBAs are not reliable in cases where the policy has differential effects on populations of different incomes (Boardman et al 2011, 491). Though some of them suggest that this means one should introduce a wealth adjustment in those cases (Boardman et al 2011, 501-503)<sup>19</sup>, others simply recommend that one realises the limited amount of information CBA provides in that case (Mishan & Quah 2007, 246). Now, the present is a case where there is significant wealth distortion and where many of the targets are likely to affect populations of different income levels differently<sup>20</sup>. And so, the views of these textbooks suggest that the CCC ought to adjust for wealth. In short, though adjusting for wealth goes against a lot of *practice* in economics, thinking about the *reasons behind those practices*, adjusting for wealth in the current case does not go against the Expertise Goal as strongly.

In addition to the above, though wealth adjustments seem to be controversial within the community of economists who conduct CBAs, many other economists hold that wealth distortion is a serious problem. In particular, it is worth noting that welfare economists largely abandoned CBA, for a number of issues including wealth distortion. These economists would therefore likely welcome the addition of a wealth adjustment in the CCC's work (Fleurbaey 2011, 38; Stiglitz, Sen & Fitoussi 2010, 154).

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<sup>19</sup> Boardman et al's proposed wealth adjustment takes a slightly different form from those discussed above. A sensitivity analysis is carried out to determine what wealth adjustment would change the recommendation of the CBA (Boardman et al 2011, 501-503).

<sup>20</sup> More on this in 2.3.2.

In summary, the above suggests that there is no clear consensus for the CCC to rely on regarding whether to adjust for wealth distortion. On the practice-level, there are some prominent examples of CBAs that do include wealth adjustments, however, most of them do not. On the deeper level, the reasons economists give for their practices imply that a wealth adjustment is appropriate in the current case. This is because many of the commonly cited reasons against adjusting for wealth do not hold in the current case and because they suggest that in cases such as the current one, wealth adjustments may be appropriate.

### **2.3. Does Wealth Distortion Violate the Morality Goal?**

In this section, I will discuss whether not adjusting for wealth distortion would violate the Morality Goal. 2.3.1. presents some of the most common arguments against adjusting for wealth distortion and explains why they are not applicable in an international context.

2.3.2. suggests that there are factors that will mitigate the wealth distortion, but not sufficiently. 2.3.3. discusses what seems to me the only viable argument against adjusting for wealth: that the CBAs are a mixed measure, attempting to encapsulate not just social, but also economic benefit. I argue that none of these objections are effective.

#### **2.3.1. Negative Consequences of Wealth Adjustments**

Some of the most common responses to worries about the diminishing marginal utility are pragmatic in nature. They may grant that there is diminishing marginal utility, but hold that adjusting for it would be a mistake, because doing so would lead to negative consequences (Schmidtz 2001, 163; Kaplow & Shavell 1994; Kaplow & Shavell 2002, 33).

The first version of this attack concerns *market adjustments*. It is best to illustrate with an example. Say a local council is deciding where to place a park: in a poor or a rich neighbourhood. Those living in the rich neighbourhood, because of wealth distortion, are willing to pay far more for the benefit of having a park in their neighbourhood. However, for the sake of argument, imagine that when one adjusts for wealth in the CBA, those in the

poor neighbourhood would gain more from living close to the park. Now, the argument goes, this does not necessarily mean that the best choice is to place the park in the poor neighbourhood. This is because if the council does, those in the rich neighbourhood will still have a higher willingness to pay to live close to the park. This means that the price of the properties in the poor neighbourhood will go up. If those living in the poor neighbourhood are renters, they may be forced out of their homes since the landlords can make more money by selling the homes to those who live in the rich neighbourhood. After this shuffle has taken place, the argument goes, no one will be better off than if the park had been placed in the rich neighbourhood in the first place (Schmidtz 2001, 164).

The second response suggests that it would be better to adjust for wealth distortion by taxes rather than by policy. The idea is roughly that policy-choices to do with what laws to adopt and how to spend public funds should focus on increasing productivity: growing the metaphorical pie. Progressive taxes can then redistribute the now larger pie, making everyone better off in the end. The reason many economists think this is that some work suggests that redistributive policy provides more disincentives to economic activity than redistributive taxes (Kaplow & Shavell 1994).

There is considerable debate regarding the merits of these arguments (see e.g. Popp 2011, 101-103; Johansson-Stenman 2005, 348-349; Adler & Posner 2000, 1140-1141). However, for present purposes, it is sufficient to say that even if they are effective in the national context, they may not be effective in the present *international* context. Given the international nature of these CBAs, there is no global tax that could redistribute benefits while causing less distortions (Sunstein 2007, 13). Additionally, it seems plausible that market adjustments will be less severe. At the very least, the usual arguments regarding market adjustments concern national contexts, and so it is not obvious that the same arguments will apply to the CCC's work.

### **2.3.2. Does Wealth Distortion Change the Conclusions?**

There are a number of factors that mitigate the effect of wealth distortion. These factors could suggest that even though the CBAs would be more accurate if they adjusted for wealth, the improvement may be so small that it does not warrant the additional work. When conducting a CBA, there are always ways in which it could be improved, and so one needs to start by adjusting for those factors that make the biggest difference. If wealth distortion is not one of them, then the violation of the Morality Goal would be so small that it would be justifiable not to adjust for it.

One reason to think that wealth distortion may not have that large effects is that most of the CBAs only estimate the benefits to Low- or Middle-Income Countries (e.g. Jha et al 2014, i; Nugent 2014, i). Indeed, some of them primarily look at Low-Income Countries (Psacharopoulos 2014, i). Thus, wealth distortion is not as severe as it would be if High-Income Countries were included. In addition, the goals would have to affect people of different incomes differently.

It is difficult to provide specific examples of where wealth distortion matters, since most of the CBAs do not include sensitivity analyses with wealth adjustments. Some reasons to believe that it would make a substantial difference can be given, however. Firstly, the wealth differences between Middle- and Low-Income Countries are quite large. As mentioned above, China's GDP per capita is six times higher than that of Sierra Leone. Secondly, many of the goals are likely to affect countries differently: traffic accidents are a particularly large problem in South Africa, while sanitation issues are particularly pressing in parts of India (Tiwari 2014). Thirdly, the CBA on air pollution includes a sensitivity analysis including both the CCC's instructed values for DALYs and a WTP-based valuation. Looking at the differences between these valuations of a DALY, one can get a sense of the differences in valuation that a more general wealth adjustment could affect.

As an illustration, consider Table 1:

***Table 4.8. Annual cost of health effects***

| Valuation measure | China | India |
|-------------------|-------|-------|
| VSL               | 347   | 98    |
| DALY=US1,000      | 21    | 32    |
| DALY=US\$5,000    | 107   | 161   |

**Notes: 1 Plus Korea DR. 2 Excluding India. S**

*Table 1 From the CBA on air pollution, comparing the value of a statistical life measured without wealth adjustment (VSL) and the CCC's recommended valuations of DALYs (Larsen 2014, 15).*

Compare the differences between the row "VSL" and the other two. The differences are significant. In particular, notice the how the share of the costs between countries from air pollution changes between the different valuations. This suggests that the differences between including a general wealth adjustment and the current version of the CBAs would differ by similar amounts. It is good that the CCC goes some way in prioritising the needs to the poorest countries by mainly conducting CBAs focused on Low and Middle-Income Countries. However, just as the differences in wealth between Middle- and High-Income countries lead to significant wealth distortion, so too do the differences between Low- and Middle-Income Countries. Thus, this response fails to support the claim that wealth distortion is a small enough violation of the Morality Goal not to require correction.

### **2.3.3. Money Matters**

Above, I have argued that wealth distortion should be adjusted for since doing so, the CBA would measure the benefits that accrue to people better. However, it may not be the purpose of the CBAs to measure the benefits that accrue to people. Rather, the purpose is a mixed one. It is not just to measure the benefits to people (what economists would call “social benefit”) but also *economic* benefit. Thus, the reasoning would be that one may want to adjust for wealth when measuring social benefit, but not when measuring economic benefit. This may provide an explanation of why one adjusts for wealth in valuing some goods, but not others. DALYs are primarily viewed as a social good, and so therefore it is reasonable to adjust for wealth when valuing them. Increases in wages through education, on the other hand, may be primarily viewed as an economic good, and so one may refrain from adjusting for wealth. Indeed, when describing the work of the CCC, Lomborg says that it aims to capture “social, economic and environmental benefits” (Lomborg 2014b, 4). One way to read this claim is that the CCC is not seeking to measure the benefit from economic gains in terms of their effects on people’s wellbeing, but as a separate non-instrumental good.

One may object that efficiency<sup>21</sup> is only an instrumental good. That is, the economy doing well is only beneficial insofar as it is useful to realising other benefits, such as improving people’s welfare. One thought could therefore be that all economic effects should be translated into effects on intrinsic goods, such as welfare. This view seems intuitive. However, it is difficult to translate economic benefits into welfare benefits, especially if one considers long-run benefits. We are able to estimate the benefit to a person from an increased wage, but it is more difficult to take into account effects from increasing economic growth. Thus, if one does not look at economic effects, then one risks tanking the economy, which will in the long run mean that one has made things worse (Frank 1997, 1847).

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<sup>21</sup> In the wealth distorted sense.

One could keep pushing at this point, for example arguing that improvements in welfare are more important than economic benefits, and so a CBA concerned only with welfare is preferable to a mixed one (Crespi 2013,165-167). However, this is not necessary for present purposes. It is enough to note the following: The Morality Goal is more likely to be promoted by adjusting for wealth than not. Additionally, there are two alternative approaches to compare to each other. Either one has the current measure, which can be construed as a mixed measure, or one separates economic benefit and welfare benefits. Doing so, one could provide a sensitivity analysis including both the wealth adjusted BCR aimed at capturing welfare benefits and the BCR when wealth distortion is not adjusted for, aimed at capturing economic benefit.

Summarising this section of this dissertation, it seems that most objections to including a wealth adjustment fail. In 2.3.1. I argued that the common arguments claiming that wealth adjustments have negative consequences are not convincing at an international level. In 2.3.2. I showed that wealth distortion likely makes a big difference in the CBAs. Lastly, in 2.3.3. I suggested that the most plausible response seems to be that the CCC is aiming for a mixed measure, where they are not only trying to capture benefits in welfare, but also economic benefits.

One way to summarise what has happened in sections 2.2. and 2.3. may be that not adjusting for wealth in this case, economists may have fallen prey to “zombie methodology” (Quiggin 2010, 1-2). That is, they may be following a methodological pronouncement – such as “don’t adjust for wealth” – even though the reasons for that pronouncement are no longer relevant. Economists for example worry that wealth adjustments are not appropriate given their negative consequences (e.g. market distortions), not thinking deeply enough about whether those reasons against wealth adjustment hold in the present, international, context.

## **2.4. Does Wealth Distortion Violate the Other Goals?**

In this section, I will investigate the extent to which wealth distortion violates the other goals that the CCC wants to promote. I will suggest that adjusting for wealth would increase comparability, perhaps promote transparency, and make their reports more communicative. This will allow me to, in 2.5., discuss whether, all goals considered, the CCC ought to adjust for wealth distortion.

#### **2.4.1. The Comparability Goal**

Separating measures of economic benefit and benefits to people, one is likely to increase the comparability of the CBAs, seeing as one would be comparing CBAs attempting to measure the same type of benefit. The reasoning behind the Comparability Goal is that the CBAs ought to be carried out in roughly the same way in order to allow them to be compared to each other. If they are carried out in different ways, it may be the case that differences in BCRs found are due to differences in methodology rather than the quality of the targets. I have argued that the current situation is one in which there is partial wealth adjustment in the CBAs. This suggests that comparability is compromised, especially if one compares CBAs that measure health and those that do not.

This suggests that separating out measures of economic benefit and of welfare benefits would improve comparability. Thus, the Comparability Goal would be more fulfilled than currently by simply removing the wealth adjustment on health, adding a wealth adjustment or including both in a sensitivity analysis.

#### **2.4.2. The Transparency Goal**

The Transparency Goal would too be promoted by wealth adjustment. On the one hand, if the CBAs are doing what 2.3.3. describes, it will not be immediately clear to policy-makers reading the document. They are more likely to think that it either is an attempt to measure simply economic benefit, or an attempt to measure benefits to welfare. On the other hand, adding a wealth adjustment would increase the complexity of the CBAs. Some authors



worry that added complexity to CBAs decreases their transparency as it allows analysts more wiggle-room in choosing assumptions (Sinden 2004, 210-213). However, this worry is not as strong in the current situation since it would be the CCC, or the economists working with CCC as a group, and not the individual analysts, deciding what the wealth adjustment ought to be.

### **2.4.3. The Communicative Goal**

One of the most common reactions from the target audience of the CCC – mainly policy makers in the international development sphere – is that “the economic angle is one important perspective” (Rozen 2014) and that “a purely economic perspective will lead to skewed results from other perspectives” (Thorpe 2014). The Communicative Goal would therefore be promoted by a wealth adjustment, as the CCC would be better placed to respond that they are not looking at economic benefits at all, but rather at the benefits that will accrue to people.

## **2.5. Weighing the Goals**

The previous three sections, 2.2., 2.3., and 2.4. have discussed the extent to which the different goals of the CCC are fulfilled by adjusting for wealth. I have found that the Morality Goal, if anything, favours adjusting for wealth. The Comparability Goal favours separating out economic benefit from welfare benefit, thus adjusting for wealth, not having a single value of health or doing both in a sensitivity analysis<sup>22</sup>. Both the Transparency and Communicative Goals may be promoted by a wealth adjustment. Lastly, it is unclear whether the Expertise Goal is promoted by adjusting for wealth.

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<sup>22</sup> This may be a particularly weighty consideration seeing as a common criticism of CBAs like the CCC is that they are useful to making decisions *within* a cause – such as how to best reduce carbon emissions – but not *between* them – for example whether to focus on reducing global warming or poverty (Mark Goldring, CEO of Oxfam, in conversation with the author).

Simply tallying up the goals in this way does not answer the question of what the CCC ought to do. In order to answer whether the CCC ought to demand the CBAs it commissions include a wealth adjustment, the goals need to be weighed against each other. To do so, one needs to know not only what direction the goals pull, but also how weighty they are.

Since I have argued that all goals other than the Expertise Goal favour adjusting for wealth, the crucial question is the weight it is to be afforded. Or rather, since it is unclear the extent to which the Expertise Goal as a whole is fulfilled by adjusting for wealth, it is best to consider the weight one ought to give its different parts. That is, ought one give greater weight to adhering to the views of economists on the practice-level or the reason-level?

In my view this depends on why one is concerned with the Expertise Goal. If one is concerned with the Expertise Goal for reasons of accuracy – that is, one thinks that economists, in general, give good guidance as to what is good policy – then one ought to care mainly about reason-level adherence with the views of economists. This is because if one thinks that economists provide good guidance for policy-decisions, it is because their way of reasoning leads to informative answers, not that they simply happen to produce them.

However, one can also be concerned about the Expertise Goal for more political reasons. That is, one may be concerned with the Expertise Goal because it allows the CCC to, for example, affect policy-makers more effectively. If one is concerned with these aspects of the Expertise Goal, it seems that what matters is whether economists *in fact* support the results and methods of the CCC. On this understanding of the importance of the Expertise Goal, practice-level may be more important than reason-level adherence to the views of economists. Economists may have formed the methodological belief that wealth adjustments are not good, without at every instance asking if the reasons they first

formed that belief apply to the present case. Since the economists in this case would be mistaken – or so I have argued – it is tempting to say that their views would not matter. However, it is likely that one of the CCC's most valuable assets is its good standing with economists. If this good standing is undermined, the high-profile academics may not be willing to part with their time to work with the CCC. This consideration should be given considerable weight; without economists willing to conduct CBAs for them, the CCC's work would be impossible. Indeed, this consideration may be so weighty that if adjusting for wealth carries a substantial risk of undermining the CCC's good standing with economists, it could outweigh all the other goals.

It seems that this risk can be mitigated, however. In particular, this can be done by involving the economists in the methodological decision. For example, the CCC could convene a conference on harmonising the methodology of their CBAs more, where wealth adjustment would be one of the issues discussed. If such a conference would come to the decision that a wealth adjustment is indeed appropriate, the CCC would have managed to promote the Communicative, Comparability, Transparency, Morality *and* Expertise Goals. Indeed, if the claim I have made in this essay – that both on the Morality Goal and the reason-version of the Expertise Goal favours adjusting for wealth – is true, then the economists should plausibly favour adding the wealth adjustment. Additionally, such a conference would be useful in further scrutinising the arguments, made in this dissertation and elsewhere, in favour of wealth adjustments.

Because of the above, I hold that the CCC should add a wealth adjustment to their CBAs. Being no economist, I have no strong view on what this adjustment should be. However, a good first suggestion may be to follow the approach of the Green Book. In order to avoid alienating the economics community and remaining more neutral on the matter, it may be good for the adjustment to be added in a sensitivity analysis. Additionally,

the CCC ought to take measures to ensure that the economists conducting their CBAs are, largely, in favour of the change before introducing it.

## **Part III: Conclusions**

Above I have argued that the CCC ought to adjust for wealth distortion. In closing this dissertation, I will answer two remaining questions: given the conclusion that the CCC ought to adjust for wealth distortion, how should one view their current non-adjusted work? Second, what lessons regarding CBA can be gleaned from the discussion of this dissertation?

### **3.1. Should the CCC's Recommendations Be Ignored?**

Given the above discussion, one may feel that the CCC's results are not to be trusted, especially if one follows the philosopher's approach. Some may dismiss it directly, feeling that it is discriminatory in not adjusting for wealth. This seems too strong to me; what matters is not the assumptions, but whether the results are to be trusted. If a CBA was conducted in a context with small differences in wealth, then adjusting for them may not significantly change the results of the analysis. In such a case, discriminating against the poor in the analysis may not be harmful. I hold that one ought to worry about the CCC's recommendations only insofar as they depend on wealth distortion. This suggests that one ought to view the CBAs in light of wealth distortion. For example, if a CBA's benefits are wealth distorted and concentrated in Sub-Saharan Africa, these benefits are likely an underestimate. Conversely, if benefits are concentrated in richer countries and they are wealth distorted, one ought to take this to suggest that the benefits may be overestimated.

As an example of this, the trade liberalisation CBA (Anderson 2014) ought to be considered with a lot of caution. Seeing as this CBA included benefits to all countries involved in the relevant trade deals, they included both Low- and High-Income Countries. In particular, this means that the difference in benefit from those trade deals that do not involve Low-Income Countries and those that do, should be considered far bigger than the CBA suggests.

In addition to the above, even though wealth distortion skews the results of the CCC to some extent, they may be the best guide currently available as to what SDGs would have the most beneficial consequences. Even though a wealth adjustment would improve the CBAs, they may still be informative. At the moment, there are no other quantitative analyses comparing a wide array of the proposed SDGs. The alternative to taking into account the Post-2015 Consensus would be to exclusively consult quantitative analyses that only compare certain groups of goals to each other, or more qualitative reasoning – something I would advise against. It would be better to view the recommendations of the CCC in light of wealth distortion.

### **3.2. Lessons Concerning CBA**

From the above discussion, several lessons can be drawn about economics and CBA.

Firstly, to properly criticise a CBA one needs to be wary of its context and purposes. It is not enough to show that an analysis fails to meet the Morality Goal to suggest that it ought to be changed or not adhered to. As shown in this dissertation, goals that relate to a CBA's political and pragmatic merits can matter a great deal. In some cases, such considerations outweigh the Morality Goal.

Secondly, be wary of zombie methodology. Methodological prescriptions often only hold given specific circumstances. Economists and philosophers should consider carefully whether the reasons behind common methodological prescriptions of economics hold in all the circumstances in which they are followed.

Thirdly, CBAs are more messy and complicated than one might initially think. There is plenty of diversity in how CBAs are carried out depending on which sub-discipline of economics it is carried out in. Additionally, though some theory unites the analyses, for the most part they are only loosely based on it. They use economic theory not as a rigid rulebook, but as a rough guide. This is what allows them to at times estimate benefits through means other than estimations of WTP.

This heterogeneity between CBAs suggests that we are in a similar situation to that of CBA in the early 20th Century described by Porter. That is, being developed by different actors in different contexts, CBA practices have veered from each other, which means that their comparability is compromised. Most of the time, this tension is not detected, as CBAs from a wide array of economic sub-disciplines are seldom compared to each other. However, when they are compared, like in the CCC, these tensions make themselves known. As Porter tells the story, these tensions in the first half of the 20th Century were resolved by recourse to economic theory. This time around, economic theory will not be up to the task. This time, economists' methodological choices need to be based far more on reasoning informed by ethics and considerations of other goals, exemplified in this dissertation. Scientific correctness is not opposed to ethical and political correctness, but relies on it.

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