Netherlands Environmental Assessment Agency

University of Amsterdam

MNP Report 550031006/2007

Sustainable quality of life

Conceptual analysis for a policy-relevant empirical specification

I. Robeyns[1,2] and R.J. van der Veen[1]

[1] University of Amsterdam
Department of Political Science

[2] Radboud University Nijmegen
Department of Political Science

Contact:
A.C. Petersen
Information Services and Methodology Team
arthur.petersen@mnp.nl

E-mail addresses authors: i.robeyns@fm.ru.nl; r.j.vanderveen@uva.nl

This investigation has been performed by order and for the account of the Netherlands Environmental Assessment Agency, within the framework of S/550031/01/CW 'Concepts of quality of life, sustainability and worldviews'.

Netherlands Environmental Assessment Agency (MNP), P.O. Box 303, 3720 AH Bilthoven, the Netherlands;
Tel: +31-30-274 274 5; Fax: +31-30-274 4479; www.mnp.nl/en

Rapport in het kort

Duurzame kwaliteit van leven

Conceptuele analyse voor empirisch onderzoek

Bij duurzame ontwikkeling gaat het om het nastreven van een duurzame kwaliteit van leven. Een duurzame kwaliteit van leven in een natiestaat is een kwaliteit van leven van de bevolking binnen de landsgrenzen, waarvan het niveau voor de huidige generatie (1) continueerbaar is gegeven de natuurlijke en sociale hulpbronnen waarover de natie beschikt en (2) die niet ten koste gaat van een aanvaardbare kwaliteit van leven voor (2a) de inwoners van andere naties in de huidige generatie alsmede (2b) de volgende generaties in de eigen natie en (2c) daarbuiten. In dit rapport wordt uitgewerkt hoe kwaliteit van leven conceptueel en empirisch benaderd kan worden. Van drie benaderingen van kwaliteit van leven, te weten de hulpbronnenbenadering, de geluksbenadering en de capability-benadering wordt de laatste het meest geschikt bevonden voor nadere uitwerking.

Bij de capability-benadering gaat het om de reële mogelijkheden voor mensen om op diverse terreinen van het sociale leven te functioneren, en wel in overeenstemming met hun eigen wensen en zelfbeeld. Het rapport stelt dat het mogelijk is om Nederlanders enerzijds te bevragen over het belang dat zij hechten aan verschillende domeinen van functioneringsmogelijkheden en ze anderzijds te bevragen over zowel (a) hun normatieve opvattingen over wat de internationale en intergenerationele rechtvaardigheid vereist als (b) hun empirische opvattingen over de beperkingen die dergelijke vereisten aan de Nederlandse samenleving zouden opleggen. Vervolgens volgt een aanzet voor een capability-index voor de kwaliteit van leven.

Trefwoorden:

kwaliteit van leven, duurzaamheid, capabilities

Preface

In the Sustainability Outlooks that were published by the Netherlands Environmental Assessment Agency (Milieu- en Natuurplanbureau, MNP) in 2004 and 2007, sustainability is (roughly) defined as the 'availability and continuability of a certain quality of life'. Since the first Sustainability Outlook lacked a precise and conceptual analysis of 'quality of life' (or human well-being) and its relationship with 'sustainability', the MNP commissioned Dr. Ingrid Robeyns and Dr. Robert van der Veen of the University of Amsterdam to describe and evaluate the various conceptualisations of 'quality of life' available in the scientific literature and to make a proposal for a method to quantitatively measure quality of life. The capability approach – one of the more promising conceptual approaches – has been explored by the authors in some depth in this report, after consultation with the MNP steering committee for this study. This committee consisted of Theo Aalbers (chair), Johan Melse, Bert de Vries and Arthur Petersen. The present report is an abbreviated and translated version of the original Dutch report 'Duurzame kwaliteit van leven: Conceptuele analyse voor empirisch onderzoek' (MNP Report 550031005/2007).

The responsibility for this report's content lies exclusively with the authors; it does not necessarily contain the views of the MNP on this subject matter. Our expectation is that this report will provide thinkers on sustainability and quality of life with a good deal of interesting information.

Arthur Petersen

Programme Manager, Methodology and Modelling Programme

Netherlands Environmental Assessment Agency

Contents

Summary

How can a ‘sustainable quality of life’ be approached conceptually and empirically? This is the main question of this report. There is no generally accepted definition of ‘quality of life’. In this study, after it has been made clear what the word ‘sustainable’ in ‘sustainable quality of life’ precisely means, three theoretical approaches are compared that argue for a distinct interpretation of the substantive content of life quality. The first of these approaches is the liberal *resource approach*: people need access to certain resources, in order to become capable of developing and pursuing their own conceptions of the good life, by deploying their resource shares autonomously within the boundaries of equitable social institutions. In opposition to this view, the utilitarian tradition identifies quality of life (or in effect synonymously: well-being) with a metric of subjective utility – which is often measured as *happiness* or alternatively *life satisfaction*. The third approach understands life quality as a *set of capabilities*, that is to say of real possibilities for people to function effectively in diverse domains of social life, in accordance with their own views of the valuable life in terms of one’s ‘doing and being’. According to the capability approach, the government is tasked to make available the resources which are necessary for the capabilities of individuals. This concerns both individual and collective resources. The third approach is further developed in this report.

In the first Sustainability Outlook of the MNP (2004), the notions of ‘sustainability’ and ‘quality of life’ were intertwined in an uncommon operationalisation, which made use of a survey instrument with questions about the importance that people attach to the solution of a large number of societal problems. The present report argues that the first Sustainability Outlook implemented the notion of ‘sustainability *in* life quality’, and it gives reasons why instead the notion of ‘sustainability *of* life quality’ should have been followed.

Sustainable quality of life is defined as: *Sustainable quality of life in a national setting is the quality of life enjoyed by the population within the national territory, the level of which is (1) viably reproducible for the current generation, given the natural and social resources commanded by the nation, and (2) is gained neither at the expense of an acceptable quality of life for (2a) members of the present generation outside the nation, nor of that of (2b) members of the next generations at home and (2c) the next generations elsewhere.* This definition of sustainable quality of life needs to be specified in many ways. Normatively, because the constraints must be derived from principles of intergenerational and international justice which the government must accept as binding. Conceptually, because the content of the constraints under whatever such principles will also depend on what we mean by ‘quality of life’. Empirically, because the demands posed by accepted normative principles regarding the distribution of life quality potentials across space and time need to be translated into specific constraints on the use of resources by the present generation at home. And finally, whether any given set of constraints thus specified will in fact be accepted as binding also

depends on the extent to which other nations observe similar constraints. This raises familiar issues of international collective action and policy coordination.

The authors conclude that on theoretical grounds the capability approach is to be preferred as the foundation for a measure of the quality of life. According to the report, it is possible to survey the Dutch population with respect to, on the one hand, the importance they attach to different domains of functionings and, on the other hand, both (a) their normative opinions on what is demanded by international and intergenerational justice and (b) their empirical opinions on the constraints for Dutch society that should follow from these requirements of justice.

Initial ideas are developed for a capability index that measures quality of life. However, it must be kept firmly in mind that the empirical development of the capability approach is still in an early stage. It is possible that further research will reveal disadvantages of a capability-based life quality-index that are insufficiently appreciated at present. The present study aims to provide only the foundations for the full construction of a ‘capability-index’. Finally, the report offers suggestions for further empirical work by MNP.

1 Disentangling the concepts

1.1 General introduction

Quality of life is a familiar concept which appears in a multitude of contexts. But it has no single accepted definition. In fact many different meanings adhere to ‘quality of life’ in several social domains, in politics, as well as in applications in policy and science. Now for most similar large concepts, such as freedom, justice, efficiency and welfare, social and political philosophy provides guidance in sorting out the analytical structure of technical and everyday meanings. But strangely enough, ‘quality of life’ rarely figures as a central concept in social and political philosophy. For example, it has no lemmas in two well-known philosophical encyclopedias - the ‘Routledge Encyclopedia of Philosophy’, and the ‘Stanford Encyclopedia of Philosophy’. However, as Griffin (1998) correctly observes, well-being and quality of life are frequently treated as synonyms in philosophical discourse. And therefore the question of meaning concerns not so much the exact differences in usage between these two terms but rather the different ways in which one may specify their substantive content.

What quality of life is, however, is not merely a philosophical issue. The practical implications of different theories on what constitutes quality of life lead to diverging recommendations on what, if anything, government should undertake to promote it, and also give rise to distinct ideas concerning the design of social and economic institutions. Thus in general, the public choice of a particular conception of life quality has far-reaching consequences, in the same way as with the other large concepts – e.g. freedom, justice or equality – mentioned above. Moreover, just like those other concepts, what we mean by quality of life is highly sensitive to the specific context and the areas of social life within which that question is asked. One particular context of importance here is given by the issue of upholding a certain level of life quality in a society consistently with normative concerns of sustainability.

In this study we sketch the theoretical underpinnings for the task of developing an index of life quality that takes account of sustainability, can serve as the basis of an empirical operationalization, is relevant for government policy, and is sufficiently accessible to play a role in public debate. The plan is as follows. In this chapter we address the difficult relationship between life quality and sustainability. Section 1.2 first provides a general understanding of the different criteria of distributive justice which the idea of ‘sustainability’ entails for a national society such as the Netherlands, in which the primary goal of sustainability is to provide the conditions for a viable level of life quality for the present generation at home, under moral constraints of respecting the options for achieving an acceptable quality of life elsewhere in space and later in time. Then in section 1.3 we briefly discuss some of the issues that are raised by the need for working out the concepts of life

quality and sustainability in ways that are ‘relevant to government policy’. The main item of the chapter follows in section 1.4, where we argue the position that criteria of sustainability should not *as such* enter into the concept of life quality. Rather, these criteria provide the normative restrictions that would have to constrain the pursuit of life quality for Dutch citizens, in order to safeguard the continuity of life quality within the present generation at home, and in order to ensure compliance with widely shared principles of international and intergenerational justice.

Whereas in Chapter 1 we examine elements of the sustainability concept independently of the possible interpretations of the ‘quality of life’, Chapter 2 is concerned to present and compare three theoretical approaches that argue for a distinct interpretation of the substantive content of life quality. This is in fact the main task of the present report. To give a brief overview, the first of these approaches is the liberal *resource approach*: people need access to certain resources, in order to become capable of developing and pursuing their own conceptions of the good life, by deploying their resource shares autonomously within the boundaries of equitable social institutions. This approach holds that government should create fair conditions for individuals to command strategic resources - such as income, free time, education and public infrastructure - which are required for realizing a multiplicity of goals in life, ranging for example all the way from hedonistic consumption, entrepreneurship, immersion in art or science, to religious ascetism. With respect to the value of such diverse conceptions of the good the resource approach maintains a strictly agnostic position. The general rule is that government should observe neutrality in this area, and should therefore not attempt to promote socially authoritative formulations on what it is, exactly, that makes a life worth living, over and above conditions of access to general all-purpose means. Thus the distinct view of the resource approach consists in taking the effective availability of a set of strategic resources as neutral proxies for the comparison and measurement of people’s life qualities.

In opposition to this view, the utilitarian tradition identifies quality of life (or in effect synonymously: well-being) with a metric of subjective utility – which is often measured as *happiness* or alternatively *life satisfaction*. Central to this tradition, at least in the classical formulation, is the assertion that subjective well-being is comparable across individuals and cultures, and capable of scientific measurement. On that basis, utilitarianism has its own interpretation of a liberal role for government. A neutral and equitable treatment requires that each person’s utility is given equal weight in the social calculus underlying policy and legislation. In the classical formulation, the familiar maximizing rule for average utility is then derived as government’s central guideline in the allocation and distribution of various resources. Such resources, then, do not enter into the definition of life quality as proxies, as in the resource approach, but appear instead as instrumental ‘correlates of happiness’. In the last decades, this essentially *subjective approach* to life quality has undergone a marked revival, especially among economists and in psychological research.

The third and last approach we discuss is situated halfway between the resource and subjective approaches. Yet it is not merely a compromise view, having its own roots in

philosophical tradition, and offering its own version on the liberal role of government. This is the approach, pioneered by Amartya Sen, which understands life quality as a *set of capabilities*, that is to say of real possibilities for people to function effectively in diverse domains of social life, in accordance with their own views of the valuable life in terms of one's 'doing and being'. The capability approach agrees with the subjective one that resources are the instrumental conditions of life quality, but just as the resource approach in political theory, it uses a broad notion of the all-purpose means that figure as inputs required for realizing life quality, conceived as a set of capabilities. Central to this approach is the question of how to identify the relevant domains in which effective functioning constitutes a person's quality of life. It is only on the basis of distinct answers to this question that one can specify the set of 'real possibilities of functioning' which define the capability approach to life quality. Different views are possible here. According to Martha Nussbaum, philosophical reflection inspired by the Aristotelian tradition can deliver an interculturally invariant list of essential functionings. In Sen's original formulation, however, such a list can not be obtained from philosophical reasoning as such, but in the end needs to be derived from a democratic process of deliberation.

We are more attracted to this last view for reasons that will be argued below in Chapter 2. On the basis of Sen's 'democratic' conception of the list, one can see clearly how the capability approach is situated with respect to the other two approaches. On the one hand, it extends beyond the resource approach, which denies the political legitimacy of formulating an intersubjectively valid conception of life quality. On the other hand, the capability approach locates that conception downstream of the utility metric, as it were. Although having the capabilities to function will usually cause subjective well-being, this well-being is seen as an evidently desirable by-product of life quality, not as its substance. In the capability approach, then, enjoying a high quality of life is constituted by the ample availability of options to function properly in accordance with one's own choices and sense of identity. The fact that this may often produce a high score on a scale of happiness, life-satisfaction, or some other measure of subjective utility, is taken as a consequence of life quality rather than as constitutive evidence.

Needless to say each of these three approaches has its own problems. We discuss them separately, presenting the relevant findings of debates within economics and political philosophy. In section 4 of chapter 2, we then summarize and conclude tentatively in favour of using the capability approach as the starting point for developing an index of life quality for purposes of policy in the Netherlands, which is informed by the resource approach in that it seeks to link functionings and capabilities to specific resources, and which operates on the expectation that measures developed by the subjective approach serve - at least in part – to validate such an index.

Next in the first two sections of Chapter 3, we present a detailed sketch of the research programme for working out a capability-index of life quality. That index contains indicators of relevant options of functioning for individuals in different 'strategic' domains of social life. For each of these domains, the indicators should reflect essential aspects of a person's

quality of life. This does not imply however, that life quality is measured exhaustively by such an index. The purpose of the index is to summarize those aspects of life quality which are relevant for government policy, and which can be connected with constraints of sustainability. Each domain in our tentative list must thus contain empirically tractable indicators of functioning options, which are in turn tied to several types of resource inputs. In this operationalization of life quality, it should be possible - at least in principle - to estimate the resource cost of different levels of capabilities and judge the extent to which such levels are compatible with key sustainability constraints. However, as we will discuss in Chapter 4, large difficulties stand in the way of linking life quality to sustainability via resource requirements, and we shall therefore concentrate on working out the first stages of index measurement in this report.

The notion of a index that could serve as a single summary measure of the quality of life for individuals and groups obviously involves the problem of aggregating the capability-indicators within a domain, and across the different domains on our list, by giving indicators and domains certain *weights* in the index We discuss this problem in the last section of Chapter 3. Different types of weights can be distinguished. For example, a set of 'democratic weights' would reflect the importance that people living in a country attach to the various dimensions of life quality on average, whereas a set of 'sustainability weights' would rank domains of life quality in terms of a relevant estimate of resource cost. We argue that specific procedures of aggregation should always be assessed against a benchmark set of equal weights, and describe some of the requirements that such a benchmark should satisfy.

The three sections of Chapter 3 aim to provide a research framework for a capability-based index of life quality, as described above. It offers no more than this, however, because actually doing the work of operationalizing the indicators in different domains, and indeed of selecting domains across the whole field of social life, involves research clearly beyond the scope of this report. The report is rather meant to chart the different conceptual steps and empirical procedures which may enable the Netherlands Environmental Assessment Agency (MNP) to judge the merits of undertaking such research, in the context of its broader interest in clarifying the relationships between life quality and sustainability.

As we mentioned above, sorting out those relationships is complicated, both conceptually and empirically, and it raises fundamental issues of policy design as well. The longer Dutch-language version of this report contains two separate chapters on these topics which are summarized in Chapter 4, responding to the research program of the MNP *Sustainability Outlook*.[1]

[1] In this report, we will most often refer to the English summary of the *Sustainability Outlook* (MNP-RIVM, 2005). The original Dutch report is included in our list of references as MNP-RIVM, 2004.

1.2 Sustainability: global and national

At the outset it is important to reflect on the obvious point that quality of life – however one conceives of it - and 'sustainability' do not necessarily coincide. The two may not even be positively related. A population can enjoy a high quality of life at the expense of future generations, by depleting natural resources, or irreversibly polluting the environment. Strong population changes may also harm the prospects of future generations for sustaining a given level of life quality. Moreover, even within the more limited timescale of the present generation, the global distribution of resources and the way in which many of these resources are used, for example in energy consumption, will be likely to create highly unequal opportunities for attaining quality of life across nations. Before asking just how life quality is related to concerns of sustainability in section 1.4, we want to focus on the key conceptual features of 'sustainability' in a national context.

As the well-known definition of the Brundtlandt Commission in the report *Our Common Future* shows, the notion of sustainability was conceived originally at the global level, in terms of a concern for 'future generations', taken as a single entity. Sustainability then refers to the requirement that current economic processes should "ensure the needs of the present without compromising the needs of future generations to meet their own needs". Robert Solow specified this requirement by stating that the next generation should have "whatever it takes to achieve a standard of living at least as good as our own and to look after their next generation similarly" (cited in Sen, 2004a: 2). These global formulations share two presuppositions with respect to their object of concern and their attribution of responsibility. To start with the first of these, rather than referring to quality of life, both formulations place a generational constraint on the capacity to satisfy needs, or more specifically, to achieve a 'standard of living'. As we will see in Chapter 2, the standard of living should be distinguished from the quality of life. Whereas the former usually refers to command over economic resources, the latter almost invariably has a broader connotation. Even if quality of life is ultimately defined in a resource-oriented way, it will take into account non-economic resources, such as civil rights, which are deemed essential to human well-being. Moreover, while living standard usually refers to aggregate resource opportunities of economies as a whole, life quality – at least in the sense in which we are using the term here – is defined at the individual level.

Secondly, the normative requirement to take future generations into account takes the form of a moral duty of the *global community as a whole* to take care of the needs of future generations as a matter of justice, or, again more specifically, a duty not to 'compromise' the options of the next generation for achieving a standard of living as least as good as the current generation enjoys. However, this leaves unanswered the large question how this general duty of care should be translated into responsibilities of global agents - that is to say national states and international agencies of various kinds - for meeting standards of intergenerational distribution. Moreover, in Solow's more specific statement at least, there is

the large question as to why the living standard to be achieved by the 'next generation' should at least equal the one enjoyed by the 'current generation', given the extreme inequalities in living standards existing around the world at present. For example, global income inequality between individuals, as measured by the Gini coefficient, surpasses the degree of inequality in all countries save Namibia (UNDP, 2005: 37-8)

In the general context of raising awareness about sustainability problems, it is perhaps understandable that these normative issues are left open. But they need to be faced as soon as the concept of sustainability is applied to a single nation such as the Netherlands. In that case, sustainability includes both intergenerational and international standards of distributive justice, to which the national government should in principle be responsive. To sum up, for our purposes we have to replace 'standard of living' by 'quality of life' as the relevant object of concern for sustainability, and we have to include the international dimension along with the intergenerational dimension among the normative requirements of sustainability that may bear upon national and international policies of the Netherlands. In general, this gives the following *definition of sustainable quality of life* in a nation state:

Sustainable quality of life in a national setting is the quality of life enjoyed by the population within the national territory, the level of which is (1) viably reproducible for the current generation, given the natural and social resources commanded by the nation, and (2) is gained neither at the expense of an acceptable quality of life for (2a) members of the present generation outside the nation, nor of that of (2b) members of the next generations at home and (2c) the next generations elsewhere.

Some comments on this definition are in order. First, a national government is bound to be concerned to carry out policies which contribute to a viable level of the quality of life 'at home' and 'at present', within limits of available resources and under constraints pertaining to the interests of persons both 'later' and 'elsewhere'. Part (1) of the definition puts this primary concern at the forefront. Sustainability 'at home and at present' then refers to the overarching policy goal of promoting an acceptable degree of life quality for the population living within the national territory, which can be maintained over the period, say 25 years, in which newborn children grow up to adulthood. This policy goal aims to rule out short-run attempts to increase life quality beyond the economic and ecological resource base of the nation, and the goal would for example preclude overexploitation of local gas and oil reserves, as well as neglecting public sector in health, education and spatial infrastructure in favour of boosting private consumption.

These very commonplace points need to be stated carefully at the outset, in order to avoid the impression that issues of sustainability reduce to safeguarding the interests of persons living 'later' and/or 'elsewhere'. Citizens and politicians who strive to prevent unsustainable policies or wasteful patterns of production and consumption in the Netherlands are by no means exclusively interested in promoting the life quality of individuals outside the national

borders, or of future generations even in their own nation. Far more frequently, they are concerned to create conditions for keeping the national household in order in the 'here and now'. This is not merely a question of myopia or group egoism. Nor is it merely explained by the fact that the interests of people later and elsewhere are often hard to ascertain. It rather has to do with the judgement that other nations, and collectivities belonging to future generations, must assume their own responsibilities for taking care of their own households. When speaking of 'sustainability' in a national context, this very basic tendency has to be kept in mind. If it is ignored, 'sustainability' runs the risk of becoming a morally overextended concept which unnecessarily carries a connotation of exclusive altruistic concern for the 'later and elsewhere', and is likely to produce adverse political responses.

Secondly however, this is not to say that the goal of maintaining a (possibly high) level of life quality for the current generation at home is to enjoy absolute priority. It is only to say that the demands of intergenerational and international justice which enter our definition of sustainability should be conceived as constraints upon the pursuit of this goal. Table 1.1 presents the structure of the definition in a two-by-two array. It shows that there are three types of moral constraints, which respectively refer to the interests of members of the current generation living outside the Netherlands (2a), prospective members of the next generation inside the Netherlands (2b) and prospective members of the next generation living abroad (2c).

Table 1.1 Sustainable quality of life in a national setting

	'At home'	'Elsewhere'
Present generation	(1) Objective: *Acceptable and viable quality of life*	(2a) Constraints: *Acceptable quality of life*
Future generations	(2b) Constraints: *Acceptable quality of life*	(2c) Constraints: *Acceptable quality of life*

Thirdly, the nature of the difference between the goal of sustainability in cell (1) of the table and the three constraints in cells (2a) to 2(c) needs to be clarified. So far nothing specific has been said about the content of these constraints, but in general it can be said that the national government cannot take a *direct responsibility* for ensuring an acceptable quality of life for persons elsewhere and/or later. Thus the constraints of these three cells need to be understood as *duties of forbearance*. In the pursuit of its goal to ensure an acceptable quality of life for the present generation at home under these three constraints, the national government is bound by the duty to refrain from actions that would prevent other nations in the current

generation from pursuing a similar goal, and likewise for the next generations both at home and abroad.

For the next generations at home (2b) this seems clear enough from Solow's formulation that each future generation should have to have 'whatever it takes to achieve a standard of living at least as good as our own'. For this condition obviously does not entail the duty to ensure that future generations at home would actually enjoy a viably reproducible level of life quality comparable to the current level, when the time comes. Whether they do or not will obviously depend on their own individual and collective decisions. The government's duty only extends to ensuring that future generations will be capable of reaching that comparable level, in so far as this can be shown to depend upon its actions 'here and now'. In principle the same applies to the duties of forbearance which are addressed to safeguarding the resource potential for reaching an 'acceptable' quality of life within other nations, either currently (2a) or in the future (2c). In these cases, however, it is much less clear how to specify these resource potentials, since this will depend on the standards of international distributive justice which command agreement.

To sum up, the definition of sustainability offered above is tailored to national responsibilities, but needs to be specified in many ways. *Normatively*, because the constraints must be derived from principles of intergenerational and international justice which the government must accept as binding. *Conceptually*, because the content of the constraints under whatever such principles will also depend on what we mean by 'quality of life'. *Empirically*, because the demands posed by accepted normative principles regarding the distribution of life quality potentials across space and time need to be translated into specific constraints on the use of resources by the present generation at home. And finally, whether any given set of constraints thus specified will in fact be accepted as binding also depends on the extent to which *other nations* observe similar constraints. This raises familiar issues of international collective action and policy coordination.

All this shows that it is difficult indeed to arrive at a clear picture of what the concrete policies of sustainability should be, under this general definition. Even assuming a worldwide consensus about normative principles, and even if such consensus were to be implemented in a definite allocation of responsibility across nations and international agencies, it will still remain highly uncertain what exactly is required in the way of resource constraints under the broad heading of 'sustainability'. This is so because even under the most ideal assumptions, those requirements inevitably depend on likely technological changes, future reserves of natural resources, projections of the state of the global environment, and estimates of political stability in the world, for example of internal conflicts such as civil wars. Thus much of the massively detailed knowledge needed for specifying what sustainability would actually require from politics in any given nation is clearly unavailable, and the available knowledge is moreover bound to be contested. We will return to this point in Chapter 4.

Just how far removed we are at present from a normative consensus about the principles of sustainability is also shown by two points of contention concerning the substance of intergenerational and international justice. One may ask to what extent sustainable policies in

the present impose equal responsibilities towards *all* future generations, or instead a discounted responsibility for the potential well-being of generations further down in time, on the assumption that the intervening generations must take their own share of responsibility. One can interpret Solow's formulation of sustainability in this last way, for he stipulates that each generation should 'similarly take care of their next generation' in providing whatever it takes to uphold a standard of living at least as good as its own. But this does not tell us much about the size of the discount factor, nor does it take account of the fact that the present generation may well succeed in preserving good conditions for the next one, while adversely affecting the conditions for the generations that will be in existence after that time.

In the international setting, a fundamental problem of sustainability is the difficulty of specifying the baseline for assessing whether a national policy is 'harming' the resource potential of other nations to achieve an acceptable level of life quality. In one interpretation, the existing global distribution of resources is taken as the baseline. Sustainability then only requires that national policies of upholding a viable level of life quality at home do not foreseeably diminish the resources available elsewhere, under the *status quo*. In a more radical interpretation, the relevant baseline could be a far more egalitarian global distribution of the resource potential for life quality. In that case, sustainability may first require a positive contribution to international redistribution, before the commitment of not harming other nations comes into question.[2]

In the next sections, however, we have to leave these theoretical issues open, as their discussion is far beyond the scope of this report. We proceed from the general definition of sustainability, in an attempt to clarify the notion of a 'sustainable quality of life' in a form that is pertinent to governmental policy.

1.3 Policy relevance, political legitimacy and comparability

In the general introduction we mentioned the need for understanding life quality and sustainability in a way that has relevance to the context of governmental policy. We first make some observations about sustainability. As will be clear from the previous section, the relevance of this concept is bound to be increased for the advisory purposes of the MNP, by distinguishing among the various requirements implied by narrowing down the originally global connotation of a sustainable world society to the connotation of a sustainable national society which is morally tied to the rest of the world. Our understanding of sustainability is in line with the *Sustainability Outlook*, which holds that that a national society such as the

[2] To bring this radical interpretation under sustainability constraint (2a), it might be held that rich nations who refuse to contribute to achieving the more egalitarian baseline when it is within their power to do so are thereby in fact harming poor nations, even if they do not inflict harm on these poor nations as judged from the status quo. Pogge's theory on the negative duties of justice of rich nations is based on this view (Pogge, 2002, Ch 4).

Netherlands should be committed to upholding life quality ‘here and now, as well as elsewhere and later’ (MNP-RIVM, 2005: 6).

The definition we have discussed can be helpful here in several ways. First, for drawing up a systematic inventory of the requirements of sustainability that actually are in force within Dutch policies. Cell (1) of Table 1.1. directs attention to policies in the areas where the primary goal is the continuity of life quality in the Netherlands within the next two or three decades. For example, the *Fourth Environmental Policy Plan* of the Dutch Government is an obvious source here. Some policies belonging to Cells (2a) to (2c) can be listed by studying the implementation of Dutch responsibilities under international treaties, or under the Millennium Development Goals. As far as we know, this kind of inventory research has not yet been undertaken. It would be highly useful, especially in case the MNP is expected to provide systematic assessments of the resource consequences of *actual commitments* to promote sustainability. We return to this point below and finally in Chapter 4.

In this report we mainly focus on the policy relevance of working out a concrete measure of life quality for the Netherlands. In general, this involves considerations of conceptual transparency, empirical specification and sensitivity to various policy instruments. But the policy relevance of an ‘index of life quality’ also necessitates paying attention to requirements of political legitimacy and simplicity, as will be explained below. With respect to conceptual transparency, we argue in Chapter 2 that a relevant index of the quality of life should be based on clear theoretical foundations. This is why we think that the three approaches discussed in the general introduction - the resource-based, utility-based, and capability-based notions of life quality – should first be examined closely in terms of their empirical operationalizations and practical implications in order to make a reasoned choice among these approaches, on which quality indicators can be based that are capable of being affected by existing or new instruments of policy. Of course it will sometimes be the case that such indicators are affected more strongly by autonomous developments in society, or by transnational processes which are beyond the government’s control. However, the relevance of the chosen concept of life quality also partly consists in the possibilities of critically evaluating tendencies in policy programs. For example, new utilitarians argue that the frequent attempts to raise average working time in order to boost per capita income may be counterproductive, because above certain income thresholds, overall life satisfaction is served more efficiently by increasing free time (Layard, 2005, Ch. 4). As we will show later, free time is also important within the resource and capability approaches. Thus even though considerations of life quality may not be decisive for judging the merits of labour augmenting policies in the end, those policies will at least be evaluated differently on the basis of a clearly stated measure of that concept.

With respect to the background aspect of political legitimacy, it is important to note that even if it is possible to arrive at a theoretically sound set of indicators for measuring the overall quality of life in a society, some care should be taken to demarcate quality dimensions that fall within the scope of legitimate policy intervention from those that lie clearly outside it. For example, intimate private decisions such as the choice of a life partner, or decisions

following one's sexual proclivities, will undoubtedly affect an individual's quality of life over time very strongly, but it is probably wise not to include these aspects in a policy-relevant measure, because they are not directly within the scope of legitimate social control. Governments should indirectly provide for freedom of choice in these areas rather than regulating behaviour, even if such regulation might produce a better quality of life, however conceived. Of course it is to some extent a matter of judgment what types of intervention pass the test of legitimacy. To take another example, Layard (2005, Ch 9) cites evidence that regular meditation is highly conducive to life satisfaction. Yet it would arguably be unwise to monitor meditation practices among the population as a policy-relevant quality indicator, for it may well be one step too far to expect that governments would be authorized to step in and subsidize meditation courses, although it must be admitted that this is not inconceivable from a strictly utilitarian point of view.

To round off, we mention a more practical requirement of relevance for government policy of an index of life quality, which is that it should be easy to explain how the country aggregate on such an index relates to GDP per capita. As we discuss in Chapter 2, GDP per capita is neither a good summary measure of life quality or well-being, nor was it originally intended as such. However, in practical policy terms, and in much of national politics almost everywhere in the world, GDP per capita is assumed to be the most important yardstick at least for comparing how well different societies are faring in their capacity to provide well-being for their members on average. In order to be able to question this assumption effectively in policy discussions, an index of life quality must be capable of being 'unpacked' in order to show clearly where – and for what salient reasons – the two measures deviate.

1.4 Sustainability and life quality: the nature of the relationship

Much of the large literature on quality of life does not enter into concerns about sustainability. But as the title of this report testifies, here it is necessary to reflect carefully on various possibilities for interpreting the meaning of a 'sustainable quality of life'. In this section we do so, by taking off from the definition of sustainability of section 1.2, but at a level of abstraction which still leaves open the choice between measures of life quality on the basis of the different approaches listed earlier. So before turning to Chapter 2 on this crucial issue, the question to be examined is: what exactly does it mean when we say, for example, that 'a sustainable quality of life in the Netherlands is a viably reproducible average level of life quality for the present generation, given the national resource potential, and taking account of the moral constraints of respecting the potential for achieving an acceptable level of life quality for persons located elsewhere and/or at later points in time'? The most obvious way of reading this sentence is to take 'sustainability' as indicating that certain conditions must be placed on the pursuit of life quality for individuals in a national society, without thereby assuming that those conditions affect the substance of what life quality consists in.

This is indeed the interpretation we favour. But it must be defended against an alternative interpretation, which plays a role in the research reported in the MNP's *Sustainability Outlook*. In that alternative interpretation, the quality of life of individuals 'here and now' in part depends on the extent to which its currently realized level is viably reproducible for the present generation at home, and it also - and more importantly - depends on the extent to which the potentials for achieving an acceptable level of life quality elsewhere and/or later are in fact realized. This idea is based on the notion that levels of individual well-being are interdependent across space and time. To put it more specifically, the idea is that to the extent that members of Dutch society are aware that constraints of intergenerational and international justice are not being respected by the policies of their government, their *own quality of life* will be negatively affected.

If this idea is true, then the constraints of sustainability entered into cells (2a) to (2c) of Table 1.1 should be regarded as *constitutive elements* of life quality. But then the definition of sustainability, on which that Table is based, is logically inconsistent. For the definition takes a viably reproducible level of life quality as the objective to be pursued for the present generation at home, under certain constraints pertaining to the interests of people elsewhere and/or later in time. And this presupposes that the extent to which such constraints are known to be satisfied does not enter into the metric of life quality itself. Thus our definition implicitly takes for granted that the quality of life and the constraints under which it is being promoted are constitutively independent. If one is forced to admit, however, that life quality is inescapably interdependent across space and time in the way just described, then the definition needs to be reconsidered, and the notion of a 'sustainable life quality' in the title of this report also becomes misleading. We should then be talking about *sustainability in life quality*, as the authors of the Sustainability Outlook have in fact proposed in a methodological paper (MNP, 2006, section 6.4). Under this interdependent conception of the relationship between sustainability and life quality, the task of measuring the quality of life becomes far more complicated, because it becomes necessary to specify just in what ways quality levels are expected to vary with the availability of resource potentials for persons later and/or elsewhere, relative to given normative standards of just distribution.

We want to argue in the present section that this alternative interpretation runs into severe problems. To introduce our discussion, a concrete example of the interdependent approach from the literature may be helpful, the 'index of sustainable welfare' (ISEW) varieties of which have been constructed by several economists. The method of building an ISEW takes a measure of personal consumption as the starting point, adds the imputed value of domestic work and 'non-defensive' public goods to this, and then proceeds to correct for the estimated 'welfare effects' of several factors which are associated with the notion of sustainability: economic inequality, 'defensive' private consumption (such as installing burglary alarm systems in the house), the imputed cost of environmental pollution, and measures of depletion of 'natural capital' (Jackson *et al.*, 1997: 5). Other variants of ISEW's also include correction factors such as loss of welfare from crime, and additions to welfare from available free time. A recent example is the *Measure of Domestic Progress*, based on a decade of research by Tim Jackson's team at the University of Surrey, commissioned by the *New*

Economics Foundation. This research shows that large discrepancies exist between changes in GNP per capita and such indexes of corrected growth. Jackson et al report that in the United Kingdom, average annual growth of GNP stood at 2 per cent, against only 0,5 per cent for this ISEW between 1950 and 1996. More spectacularly, while in the two decades between 1976 and 1996, GNP per capita increased by 44%, the Measure of Domestic Progress decreased by 25% (Jackson *et al.*, 1997: 28). ISEW's have not so far been adopted for government policies. For this there may be good reasons.

According to Eric Neumayer (1999), ISEW constructs are problematic in several respects. First of all, they lack a solid theoretical foundation. For one thing, it is unclear what exactly should be counted among the items of 'defensive consumption' – some regard health care expenses as such, and others do not. Neumayer also observes that it would be possible to factor dimensions such as the degree of political freedom or measures of gender inequality into the general rubric of 'sustainability corrections'. These are not included in the indices above, but might well be. This suggests that the ISEW method is vulnerable to the charge of arbitrariness. Secondly, Neumayer shows that the numerical value of ISEW is highly sensitive to different monetary assessments of the 'welfare effects' that are said to be caused by economic inequality and environmental harm. The same would also hold, we think, for the incorporation of cost figures for natural resource depletion over time. Since there is little agreement on all such assessments, indices of sustainable welfare end up being inevitably controversial, to the point of becoming useless for purposes of government policy.

More important for the purpose of our discussion perhaps is Neumayer's third point of criticism. This is that lumping together in one index measure valuations of economic consumption and imputations derived from various sustainability concerns invites conceptual confusion. These two sets of concerns need to be distinguished, and they should therefore receive separate treatment in attempts at measurement (Neumayer, 1999: 91-96). Thus for example, introducing a negative correction factor into the index on income earned by persons in order to account for the welfare effect of currently existing income inequality in their society may ignore the possible contribution to aggregate wealth of the next generation, if it is the case that more savings are forthcoming from a higher degree of income inequality at present. Neumayer also correctly notes that including a correction measure of free time in the index represents a positive adjustment which should be added to available consumption goods, rather than being regarded as a correction for the supposed unsustainability of monetary economic welfare. Neumayer concludes that for all these reasons, welfare and sustainability should not be summarized into one aggregate index.

We agree with Neumayer's comments, and wish to add that his third point on the conceptual distinction between *economic welfare* and sustainability applies more generally to *well-being*, and thus to various conceptions of the 'quality of life'. As we understand it, quality of life, irrespectively of how this concept is worked out in detail, is an inherently desirable state for individuals, whereas sustainability is concerned with securing a viable and fair distribution of this desirable state of affairs for individuals across time and space. This implies that life quality is constitutively independent from sustainability, and conceptually prior to it. Hence

the two concepts are not interdependent in the way described above. Only after it is specified what constitutes ‘quality of life’ can one begin to think about the relevant norms and empirical conditions that make up a conception of ‘sustainability’. It follows that ‘sustainability’ must be understood as a shorthand expression for ‘sustainable quality of life’, rather than as an expression which incorporates demands of long term viability and fair distribution into the substance of life quality itself. We therefore think that the idea of *sustainability in life quality* should not be made part of the theoretical framework of sustainable development.

To argue this position, we now advance three distinct but interrelated arguments. First of all it is a matter of sensible terminology not to lose connection with the originating notions of sustainability as advanced by the Brundtland Commision and Solow, for these notions serve as standards in general discourse, both public and scientific. Secondly, there is a fundamental philosophical point. It is possible to accommodate a certain kind of *social interdependence* between levels of individual well-being even without giving up on the idea that well-being is conceptually prior to sustainability. Thirdly, and as illustrated above in the discussion of the ISEW constructs, any attempt to incorporate demands of sustainability into an index of life quality is bound to produce a politically controversial index, in particular when those demands also include principles of international resource distribution. The more controversial such an index is, the less it can serve its purpose of guiding government policy.

In the global formulations of Brundtland and Solow, as we have seen above, the capacity to satisfy needs, or the standard of life, respectively, are subject to constraints pertaining to the interests of future generations in these same dimensions of well-being. These are obviously constraints of a moral nature. Conceived very restrictively, sustainability in the original sense refers to dramatic issues in the morality of survival, of safeguarding the continuity of the human species on this planet as a whole. But in a broader and less dramatic sense well within the margins of survival, the original formulations have also introduced principles of intergenerational fairness, that is, of respecting the conditions for distributive shares of need-satisfaction or life standards that could answer to a hypothetical reasoned agreement among parties separated in time. In this context, sustainability is a matter of doing at present what fairness requires for the future as far as this can be reasonably foreseen, rather than saving humanity as such. Though it is not easy to specify what these requirements are, exactly, the general nature of the requirements is well-understood in ordinary discourse.

Passing now to the second argument, hardly anyone who uses this moral language of sustainability will suppose that people at present do not care at all about whether their descendants will be have access to sufficient quantities of clean air and water, a menu of high-quality consumption goods and the time to indulge in these, a peaceful and comfortable living environment, cultural heritage, stretches of wild nature to explore and so on. On the contrary, precisely because all these things are taken to be on the minds of members of the present generation – although undoubtedly to quite different extents – there is an excellent reason for working out this moral language in terms of definite principles from which clear and useful policy programs can then be derived. This obvious point implies that the language

of sustainability appeals to moral ties of social interdependence. However, in order to acknowledge the force of those ties, it is by no means necessary to suppose that the amount of well-being that we at present derive from the various amenities listed above depends on the amounts that might be enjoyed by our descendants, as the interdependency thesis of life quality and sustainability assumes.

In an important way, that assumption is also misleading, at least on the squarely moral construal of interdependence which belongs to the original notion of sustainability that guides ordinary discourse. For on that construal, our concern for securing the conditions for an acceptable living standard of future generations is not primarily motivated by the self-interested thought that the quality we now derive from our present living standard will be diminished, once we realise that this is at the expense of future generations 'after the deluge'. It may or may not be in fact the case that selfish behaviour involving a violation of intergenerational morality causes discomfort, through the overwhelming shame or guilt from contemplating the harm that the behaviour potentially causes to future persons. But if this is true for someone, then taking that consideration into account in advance only produces a secondary prudential reason for good behaviour which entirely derives from the moral motive. In such cases, the subjective well-being of members of the present generation would indeed depend to some extent on the anticipated well-being of people later in time, but the reason why this would be so rests on a moral interdependence rather than on a fundamental interdependence in levels of well-being. But that moral interdependence does not cease to motivate persons whose feelings of guilt or shame are in fact not sufficient to wipe out the advantages of selfish behaviour that foreseeably would harm others in the future. And to repeat, as a matter of fact it is this moral interdependence to which the standard notions of (global) sustainability appeal.

So far this shows that our first two arguments, taken together, produce a powerful case for keeping the moral constraints of sustainability vis-à-vis future generations apart from the metric of well-being. The case becomes more powerful once the third argument is brought in. To rephrase that argument: ideally, an index measure of life quality which is to be used for advising on sustainability policies within the mission of the Netherlands Environmental Assessment Agency should strive to be minimally controversial. Now as we will show in the next chapter, it is impossible to avoid deep controversies on how to understand and operationalize the concept of well-being or life quality for public purposes, and any reasonable proposal must be defended by addressing those controversies head-on. However, once one additionally takes the view that life quality and sustainability are in major ways interdependent, the degree of controversy that has to be faced becomes unmanageable. This is already easy to see from our discussion above. If one wants to maintain that life quality at present negatively depends on the extent to which life quality in the future is thought to be endangered, then it becomes necessary to quantify such ties of interdependence in order to be able to measure individual scores on an index of life quality, after correcting for the interdependence in similar ways as is done in ISEW-indexes. But since different people have different ideas both about what they owe future generations and about what risks their behaviour foreseeably imposes on these, disagreements on such correction factors are

unavoidable. Once the nationally oriented concept of sustainability which we discussed in 1.2 is adopted, this problem is multiplied. In a national orientation, the morality of sustainability is widened to include norms and principles of international justice and solidarity alongside intergenerational norms and principles. This makes it even more difficult to avoid controversial assumptions regarding interdependency, and we therefore think that for this reason alone, it is better not to include prescriptions of sustainability in the metric of life quality itself.

We want to stress that social interdependencies based upon international morality can also be handled if sustainability norms are kept separate from the metric of life quality, and illustrate this by a simple example. On almost every conception of global distributive justice, as well as on widely shared understandings of human rights conventions, Dutch citizens are confronted with powerful moral reasons for accepting a somewhat lower quality of life for themselves at home, if this sacrifice really helps to eliminate or avoid life-threatening poverty elsewhere. For on almost any conception of what constitutes life quality, such poverty is a great harm indeed. Of course it is a fact of life that these moral reasons are not easily translated into direct action. Now suppose that in order to reinforce the motive for fighting poverty abroad among Dutch citizens, the official index of life quality for the Netherlands is made sensitive to the actual state of poverty in the world, by incorporating some kind of negative correction factor. This factor would have to depend on factual estimates of a global poverty count, on how far Dutch people are above the UNDP or World Bank poverty line on average, and on the actual state of performance of the Netherlands with respect to international poverty alleviation. Even if there is agreement on all of these facts, it will be quite hard to combine them in a non-arbitrary way. And thus, just as is the case with the ISEW-indexes, any attempt to quantify the ‘loss of life quality’ that would supposedly be caused by a failure to meet the anti-poverty requirement of sustainability will immediately invite unnecessary controversies regarding the size of the correction factor. But worse still, adjusting the index of life quality in this way might actually weaken the moral willingness among the population to support global poverty alleviation programs at some personal cost to themselves. For calculations based upon an officially accepted correction factor could show that some optimal amount of transfer to the global poor would actually be serving the (adjusted) quality of life of some in the Netherlands, but possibly not of others. By introducing this dimension of self-interest into the issue of Dutch contributions to the removal of poverty elsewhere, that issue would become even more complicated than it already is in practice.

Of course it might be thought that alleviation of global poverty is in fact in the longer-term self-interest of all people in the Netherlands, because this might help protecting international peace and stability, and thus increase the prospect of maintaining world trade from which the Dutch economy profits. But even under this purely prudential motive for aiding the global poor there is no good reason for incorporating some kind of global poverty correction factor into the index of life quality. It would be far better to face the alleged threat of stability directly, by including objectives of international poverty alleviation among the Dutch concern for promoting the conditions of life quality at home under the primary goal of sustainability

in cell (1) of Table 1.1, rather than including them only under the sustainability constraints of helping people out of their present state of poverty elsewhere (cell (2a)).

To sum up so far, independently of how quality of life is measured, there are many different reasons – both moral and prudential – for policies that place restrictions upon its pursuit in the short run for the present generation at home. A national conception of sustainable life quality must be able to state and discuss these reasons, without suggesting that every single policy of sustainability is motivated by the desire to optimise 'adjusted' life quality here and now. The idea of incorporating objectives and constraints of sustainability into the metric of life quality unintentionally invites this misunderstanding. As we have argued, the idea also invites unnecessary controversy and does not properly reflect the many-sided concerns of morality that are part of the discourse of sustainability.

As Neumayer observes, this also holds for demands of sustainability which are not immediately concerned with the distribution of global income, such as preventing depletion of natural and environmental resources. Here it also seems defensible to take account of such resources in an index of life quality only insofar as these affect the population at home directly. Thus for example the index would have to be sensitive to the state of affairs with respect to clean air and water, as well as to noise overload from traffic on roads and airports. Arguably however, concern for protecting the important value of biodiversity – a non-regenerable element of natural heritage as well as, possibly, part of ecological stability conditions – should not enter into the index. It should rather be included among the four types of sustainability conditions listed in the cells of Table 1.1 (depending on the exact nature of biodiversity requirements), unless it can be shown that life quality of the population in the Netherlands would be immediately affected by certain changes in biodiversity. This is also in line with the fact that the international commitments undertaken by the Dutch government to contribute towards biodiversity objectives are primarily intended as safeguarding the global potential for satisfying human needs in the future. Here as well, it is both unnecessary and confusing to incorporate the extent to which such commitments are actually met into an index of life quality by way of some – inevitably contestable – correction factor.

In a democratic regime, policies of sustainability must ideally be underwritten by clear political commitments based upon previous undertakings by the government, and must be supported by public debate in the light of accepted scientific knowledge. As we have argued in 1.3, the advisory task of the MNP may be enhanced by systematic inventory research on the different kinds of sustainability requirements which are in play in this process, and by reporting on the possible consequences of these requirements for pursuing objectives of improving the quality of life in the Netherlands. This is a difficult task, because the MNP takes the position that such advice should proceed from a policy-relevant index of life quality, which summarizes key quality indicators across several domains of social life. In this section we hope to have shown that the task will not become any easier if moral and political demands of sustainability are conceptually interwoven with the metric in which quality of life is expressed. We now proceed to the main part of our assignment in the next two chapters, which deals with the conceptual and measurement choices that have to be faced in working

out a policy-relevant index of life quality. In Chapter 4, we then present some concluding reflections on the relationship between life quality and sustainability in the context of the MNP *Sustainability Outlook*.

2 Three approaches to the quality of life

In this chapter we discuss three theoretical approaches for conceptualising and measuring the quality of life: the resource approach (2.1), the subjective well-being approach (2.2), and the capability approach (2.3). In the final section (2.4) we show how these three approaches relate to each other, and state our reasons for believing that the capability approach is to be preferred as the foundation for a measure of the quality of life over the available alternatives.

2.1 The resource approach

To conceive quality of life in terms of resources is a liberal approach, and can be based on both narrow and broader conceptualisations of resources. We will discuss this approach at some length both in its own right and because the notion of resources will be useful in the further development of a capability-based conceptualisation of life quality, as will be discussed in Chapter 3.

2.1.1 Liberal reluctance about the quality of life

Theories based on resources start from the classical liberal premise that each adult person should judge for herself what the good life consists in. Adults are assumed to have the capacity to make such judgements, and are therefore held responsible for whether their attempt to realise their idea of the good life succeeds or fails, assuming that each person enjoys a fair share of resources. Thus a necessary condition of letting people free in the pursuit of their own conceptions of a good life is that the resources which are needed to realise any such conception are distributed fairly.[3] This means that the resource approach to life quality does not endorse specific views on the good life, subject to the harm constraint that each person should be empowered to lead his own life as long as this does not prevent others from doing likewise. This theory is strongly anti-paternalistic. Since it is assumed that the government is well-advised to stay away from the question what the best way of life is, its mandate for pre-emptive action to protect the interests of persons who are thought to act contrary to their own good is severely limited (to prescribing safety belts and the like). On a strong version of this theory, the government is under a moral obligation to refrain from working out an interpersonally valid measure of the quality of life for public purposes. The

[3] In political philosophy the main authors who defend resource-based theories are John Rawls (1999) and Ronald Dworkin (2000).

government should not even want to raise the question ‘what do we mean by quality of life?’ since this sort of inquiry falls outside its legitimate domain of action. Rather, the government should organise society in such a way that citizens are enabled to generate their own *all-purpose means* to live a good life according to their own views, and it should redistribute those means to citizens who are unable to take care of themselves for no fault of their own.

These all-purpose means for a good life are commonly labelled as ‘resources’. In a narrow economic interpretation, resources are typically limited to financial means, either income or imputed values of public goods. But far broader definitions are encountered in disciplines other than economics. Political philosophers, in particular, have investigated the large range of resources that are arguably needed for well-being or quality of life, independently of the different views that persons hold about its content. An example of such a broad definition is found in the work of John Rawls (1999), who in *A Theory of Justice* describes resources as ‘social primary goods’. These include liberties, opportunities (such as equal opportunity to enter all occupations), income, wealth, and even the ‘social bases of self-respect’ that the rules and norms of society provide to individuals. The basic idea is that the quality of life of human beings will be guaranteed if society reproduces these resources in a fair distribution. The resource-based theory about human well-being deliberately refrains from making any additional claims about what individuals and groups should actually do with these resources.

The fact that a project for measuring the quality of life for public policy is in contradiction with the liberal principles behind the resource-based theory raises the question whether we should be considering that theory at all here. Is it not the case that this approach insists on removing any inquiry on the content of a quantifiable notion of life quality from the public agenda? This is indeed the case. Yet we think it is justified to discuss the resource approach as one possible conceptual foundation of the quality of life, precisely because it rejects attempts to construct an interpersonally comparable measure of the quality of life that people would derive from their resources. If one adopts a broad definition of resources - understood always as ‘all-purpose means’ - then one can defend the view that for public purposes, the quality of life enjoyed by individuals in a society can be deduced from the resources that those individuals are able to command. Comparisons of individual entitlements to resources thereby cover both individually owned goods, as well as access to broadly conceived collective goods provided by society, hence including legally guaranteed rights and opportunities. Thus from the liberal perspective of the resource-based theory, the conceptualisation of life quality must consist in sketching a legitimate and publicly defensible view of strategically important conditions for realizing a wide diversity of individual convictions on what the good life consists in. Such a public view may then form the basis for the construction of a *resources-index* of life quality.

The problem with this is that in practice, liberal political philosophers such as Rawls and Dworkin do not use the resource approach for this goal, perhaps because they endorse the strict interpretation, which holds that the quality of life is not an public issue at all. As a consequence, it may seem that these philosophers are not actively engaged with questions about the quality of life, but are only concerned about the just distribution of resources. To

some extent this is true, and in any case it opens the field for more narrow-minded versions of the resource approach in which per capita income is the only relevant all-purpose means.

2.1.2 National income and purchasing power: a narrow view of resources

This leads us into economic theories about the quality of life and their applications in public policy. At the macro-level, the dominant resource is GNP per capita. Economists have repeatedly argued that GNP per capita is *not* an indicator of well-being (Jackson *et al.*, 1997; Neumayer, 1999). GNP is a price-based measure of total economic production, and has originally been designed as an indicator for macro-economic stabilisation policies in the post-war period (Neumayer, 1999: 90). From a theoretical point of view this is perfectly true, but in practice GNP is often being used as a proxy for the quality of life, as these same economists acknowledge. GNP (or its changes over time - economic growth) has developed into a powerful indicator for the level of 'welfare' in a country. Many social scientists claim that these economic indicators dominate public discourse about how well a country is faring and also serve to justify governmental policies for enhancing quality of life (e.g. Diener and Seligman, 2004: 2; Cummins *et al.*, 2003: 160-161). Nevertheless, the problems of using GNP as an indicator of the well-being of a country are well-known, such as the exclusive focus on the monetary market value of goods and services, or the problem that negative and positive externalities are ignored.

At the micro-level economists translate the narrow resource approach into analyses of disposable household income. Welfare economics holds that, under certain conditions, real net income can be used as an indicator of individual welfare. In reality these conditions are generally not met. In theory, refined empirical estimations can take some of these missing welfare effects into account, such as the welfare effects of externalities and public goods, or the welfare effects of non-market labour or differences in available leisure time. But in practice achieving such empirical estimations at the individual level is very difficult both for econometric reasons and lack of appropriate data (Kuklys and Robeyns, 2005).

There is nothing in the concept of resources that forces us to narrow it down to income. Several other kinds of resources are instrumental for realising one's idea of the good life, in particular free time. Moreover, resources can be individual but also collective. Examples are natural talents and health, public infrastructure such as roads and public transport, and social institutions such as a well-functioning legal order. We will return to this broad conceptualisation of resources, but it is good to keep in mind that often, public policies are exclusively sensitive to financial resource calculations of cost and benefit, sometimes complemented with other monetary valuations of non-priced public goods.

2.1.3 Evaluation of the resource-based approach

The dominant position that financial resources have gained in the design and evaluation of public policies has led to two different points of criticism. The first critique is aimed at the simplistic but nevertheless very influential idea that the more money we can spend, the better

off we are. This line argues that our quality of life is not determined by how wealthy we are, but by our *subjective well-being*: the satisfaction with our own life, or the degree to which we are happy. This approach will be discussed at more length below. But at this point we want to mention one important result from the happiness literature: at the country aggregate level, the subjective well-being of people (either their satisfaction with life or their experience of happiness), is only weakly correlated with per capita income above a certain threshold. International comparisons have shown that the average subjective well-being of a population is positively correlated with GNP per capita until this reaches about $10.000; for higher income levels the positive correlation between the level of GNP per capita and average subjective well-being largely disappears (Frey and Stutzer, 2002: 416). For example, the GNP of the USA has tripled in the last 50 years, but the general satisfaction with life has been almost constant, and similar results have been found for other western countries and Japan (Diener and Seligman, 2004: 3; Frey and Stutzer, 2002: 413).

The second line of critique on income indicators comes from the capability approach. This approach will be discussed in detail in 2.3. The capability critique consists of two parts. The first part criticises the narrow resource approach, by invoking the broad conceptualisation of resources developed in political philosophy in order to highlight the significance of human diversity: different people need different types and amounts of resources, since they have different needs and preferences. A crippled person may have enough money to buy a wheelchair, but if buses and buildings are not accessible to wheelchairs, then this strongly limits to what he or she can do. Similarly, compared to childless adults, parents who are tied down for lack of childcare arrangements are at a disadvantage for access to income through the labour market or the unemployment benefit system. Purely financial indicators of welfare are thus in danger of taking insufficient account of human diversity across a broader spectrum of resources.

The second capability critique is more principled and also applies to broader resource accounts. The capability approach argues that ‘resourcism’ confuses *means with ends.* It argues that we first need to know what the ultimate ends of the good life are, since otherwise we cannot judge whether income, rights, opportunities and so forth are relevant and appropriate resources, or whether some other means might be more effective. All-purpose means are by definition only instrumental for reaching certain goals or outcomes, some of which have an intrinsic value that we want to include in our concept of ‘life quality’. According to the capability approach, then, we have to proceed by inquiring into widely shared ends of the good life in our society, and subsequently work out the corresponding means in our attempts to advance the quality of life.

Obviously, to criticize resource-based indicators is one thing; the hard question remains whether one can find indicators which properly reflect the quality of life, and which have sufficiently robust theoretical foundations for attaining the same public power as is currently enjoyed by the summary measure of per capita GNP. To examine this question, we now examine the alternative approaches.

2.2 The subjective well-being approach

2.2.1 What counts is happiness or satisfaction

As mentioned above, the first alternative is the subjective approach. It is based on the assumption that the quality of life coincides with the subjective experiences of a person, expressed in terms of utility, happiness, or satisfaction. We will use these three terms interchangeably unless their distinguishing features are relevant for the analysis. Satisfaction can be expressed in terms of *overall satisfaction with life*, or satisfaction on particular domains, such as income, health, family relationships, labour, and so forth.

In the last few decades significant progress has been made in research on subjective well-being by an international network of economists and psychologists, such as Clark and Oswald (1996), Diener and Seligman (2004), Frey and Stutzer (2002), Kahneman and Krueger (2006), Layard (2005), Van Praag and Ferrer-i-Carbonell (2004), and Veenhoven (2000, 2002a). A number of these scholars, in particular Layard, have concluded that sufficient scientific progress has been made for public policies to start focusing on subjective well-being. The measures of subjective well-being have been tested and refined, and much is supposed to be known about the determinants of happiness that the government can influence. Nevertheless, significant developments are still taking place within this field of research, and there is no consensus on some important questions which we will discuss in 2.2.4 below.

In the Netherlands two prominent scholars have long been working in the area of subjective well-being measurement: the psychologist Ruut Veenhoven, and the economist Bernard van Praag. They each represent one major school within the subjective well-being approach: the school which focuses on general life satisfaction (Veenhoven) and the approach which links satisfaction on particular domains to general satisfaction (van Praag).

2.2.2 Overall life satisfaction

In his inaugural lecture, Ruut Veenhoven proposes to define the ‘container-concept’ of happiness in terms of reported over-all life satisfaction. Following Diener (1984), life satisfaction is understood as a concept that combines two components: how we normally feel in everyday life – the affective, or ‘hedonistic’ component – and how we judge the degree to which our preferences and aspirations in life have been realised – the cognitive component (Veenhoven, 2002a: 10). It is important to note that at the level of overall life satisfaction, both of these components are held to combine in a synthetic expression of well-being, in which both our emotions as well as our cognitive faculties play a role, in an intuitive equilibrium in which the emotions dominate. In measurements of life satisfaction obtained from limited domains of social life, however, it is normally thought that the cognitive component of the respondents plays a larger role, and thus these measurements do not

reliably pick up the affective dimension of subjective well-being. Therefore Veenhoven argues that it is better to focus on overall life satisfaction. We return to this point below.

In order to find out how 'happy' a person is, Veenhoven asks his respondents for example to rate how satisfied they are with their life on a scale from 1 to 10. In another method he asks the respondents to imagine the worst possible life and to give that life a value of 0, to imagine the best possible life and give that a value of 10, and then to rate their own life on a scale from 0 to 10. These methods of measuring life satisfaction are widely used, not only by Veenhoven. They exist in many variants, but Veenhoven has collected and ordered almost all data on life satisfaction in a large database: 'the World Happiness Database' (http://www1.eur.nl/fsw/happiness).

Thus to understand why the term 'happiness' is most often used as the catchword of the subjective well-being approach, it suffices to note (apart from referring to Bentham's slogan 'the greatest happiness for the greatest number') that the term has acquired a set of precise operational meanings in the World Happiness Database. The questionnaires included do not only collect information on life satisfaction, but similar questions are also asked about 'happiness' in its everyday connotation, the extent to which respondents report that they feel happy with their overall life situation. The aim of such questions is to measure the affective component of subjective well-being. Research into the affective component of well-being has received an additional impulse by the work of Daniel Kahneman and his colleagues (Kahneman *et al.*, 2004; Kahneman and Krueger, 2006). They developed a refined method for measuring nasty and pleasurable experiences in short intervals of daily time spending, resulting in several measures of subjective happiness. According to these authors those measures are useful for research on the quality of life which focuses on the allocation of time in micro-situations. However, this research is still in its infancy, and we will not discuss it extensively here.

Veenhoven (2002a) claims that overall life satisfaction is the best measure for the conceptualisation and measurement of the quality of life. Just as Layard (2005, chapter 8), Veenhoven takes the position of 'new utilitarianism' (Veenhoven, 2002a: 37-38). Overall life satisfaction should be adopted as the official 'policy guide', and the task of the government is to aim for the highest possible average level of life satisfaction. For comparisons in the long term, Veenhoven also proposes to measure the quality of life based on 'happy life expectancy'. This is an index obtained from multiplying life expectancy in a country with average overall life satisfaction (Veenhoven, 1996).

2.2.3 Satisfaction on domains

In their book *Happiness Quantified* Bernard van Praag and Ada Ferrer-i-Carbonell (2004) build on more than 30 years of econometric research by Van Praag and his colleagues. They believe that standard 20th century welfare economics, which holds subjective well-being to be ordinally measurable and interpersonally incomparable can be complemented with an empirically based welfare economics, which defines subjective well-being as the reported

satisfaction of respondents at a higher level of measurement and which does allow for interpersonal comparison (2004: chapter 1). In contrast to Veenhoven, Praag and Ferrer-i-Carbonell apply subjective well-being measurement to domains of social life, such as satisfaction with health, employment, financial position, leisure time, the environment, social life, and marriage. For each of these areas, they analyse the most important determinants of domain-specific satisfaction. The aim is find out how overall life satisfaction (measured in a similar way as is done in Veenhoven's research) hangs together with subjective indicators of satisfaction in the different domains. This research also contributes to a better understanding of mental adaptation processes and of the influence of reference groups on satisfaction. For example, a raise in income of one's neighbours is shown to have a strong and significant negative effect on one's overall life satisfaction (2004: 159).

The major advantage of this approach is that different levels at which subjective well-being is experienced are integrated into one single model. Well-being responds to mechanisms that differ over the domains. One of the most significant findings emerging from the work of Van Praag and his colleagues is that some domains are characterised by positional goods, whereas in other domains this is not the case, or at least not significantly.[4] This can have major consequences for governmental policies, as we will discuss below. Note that the work of Van Praag and Ferrer-i-Carbonell aims primarily to give the foundations (and partial operationalization) of a new approach to welfare economics. In contrast to, for example, Veenhoven (2002a: chapter 5) and Layard (2005: 111-125), these authors do not hold that utilitarianism – aiming for maximum average utility – is the dominant policy criterion. They are aware that there can be good reasons to give weight to other values than the average level of satisfaction when making policy choices. This emerges, for example, from their discussion how much compensation families should receive for each additional child, in order for them to keep families at the same level of financial satisfaction (2004: 24). Affluent households need, in absolute amounts, more financial compensation than less affluent households. But Van Praag and Ferrer-i-Carbonell notice that this will be politically unacceptable for many, since there are good reasons why policy makers might choose for other compensation systems. "The only point is that such a system is not welfare-neutral anymore" (2004: 24-25). These two economists are thus concerned with finding a systematic method to measure satisfaction, both at the level of domains as well as for life overall, to model the determinants of satisfaction, and to employ this knowledge in applied welfare economics.

2.2.4 Evaluation of the subjective approach

Is the subjective approach the best basis for conceptualising and measuring the quality of life? The approach certainly has a number of attractive features. Firstly, it puts the human being central stage, rather than focusing on the means that human beings use to improve their

[4] Positional goods are goods of which the subjective valuation depends strongly on the amounts of this good that are possessed by other people belonging to the reference group of this person. The term was coined by Hirsch (1976) in his influential *The Social Limits to Growth*.

quality of life. Hence the approach satisfies the criterion that means and ends should not be conceptually confused. Secondly, in considering means to happiness, the subjective approach is not limited to material means, which is the major shortcoming of the dominant economic methods. Income has only a limited (but not unimportant) role to play in this approach. But there are some concerns which we want to raise regarding the subjective approach as the preferred route towards an index of the quality of life. Four emerge as especially relevant: problems of mental adaptation and social comparisons, group-differences in subjective well-being judgements, and the usefulness for policy within a country at lower levels of policy making. Finally, there is the ontological question to what extent happiness can be said to reflect the quality of life, rather than being a by-product. We will review these four issues one by one.

(i) Mental adaptation and social comparisons

Our satisfaction is to some extent influenced by mental adaptation problems which emerge from comparisons with the situation of others. This can have problematic implications for public policies aiming at the highest happiness for the greatest number. Take the mental adaptation processes first. How do these emerge?

First of all, there can be shocks in our lives that have a major effect on our quality of life, such as immobility after an accident. Persons confronted with a major setback in health and mobility through such a handicap will first experience a strong deterioration of their subjective well-being, but after a while this effect will weaken. Obviously this adaptation to circumstances is good for the disabled, since they do not remain deeply unhappy for the rest of their lives due to their limited abilities to move around without pain. However, the question is what this implies for policies. A utilitarian will say that the government has to limit itself to creating provisions such that the disabled can return to an acceptable level of life satisfaction, taking into account the corresponding welfare costs for others. But one could also argue that a cost-sensitive policy has to try to reach an acceptable level of functioning for these people, even if this makes little difference in their subjective judgement about their well-being, after adapting to the accident. Subjective indicators focus automatically on the first goal, but this may imply that these quality aspects that relate to the things a person still can do after the accident remain out of sight.

Secondly, people can adapt to an objective disadvantage that is not caused by an external shock, but that shows a more stable pattern. Amartya Sen (1993, 2005) has pointed out repeatedly that people living at the very bottom of the social ladder (such as ‘exploited labourers’ or ‘oppressed housewives’) adapt to their situation and come to suffer less intensely. Another example is the effect of racism. If a society becomes gradually less tolerant towards cultural minorities, and increasingly accepts racist practices, then cultural minorities might get used to a racist social climate. Perhaps they will change their behaviour, in order to avoid contact with openly racist people. By changing their behaviour and mentally preparing for racist practices, it is possible that after a while the negative well-being effect of racism on minority groups will be partially wiped out. However, a policy that anticipates such

adaptation processes is problematic from a democratic perspective: racism should not be tolerated in society, even if it turns out to have no significant impact on the subjective well-being of its victims.[5]

Another form of mental adaptation which is relevant for the government is the adjustment response to income changes. Subjective well-being judgements about income have been shown to adapt asymmetrically to income changes. Income increases go together with higher aspirations for the future, with only one third of the increase being reflected by improvements of subjective well-being (Frey and Stutzer 2002, Layard 2005). Panel-analysis over a period of ten years shows that we adapt strongly to an increase in income, but much less so to a drop in income (Burchardt 2005b). Thus if people change positions in an income distribution which itself remains unchanged, then aggregate satisfaction of the population will decrease. The people who move up the ladder will be more satisfied for a short time, but quickly adapt to the new situation, whereas people who move downwards experience larger drop in satisfaction – and this effect lasts longer as well. Tania Burchardt (2005a) argues that due to similar phenomena of adaptation, people's positions in the distribution of income, health and marital status should preferably remain immobile, according to utilitarianism. Clearly this is a policy conclusion that goes against the principle that people should receive equal opportunities, even if the effect of one person's upward social mobility is not compensated by the effect of another person's downward social mobility.

How serious are these problems of mental adaptation for the subjective approach? In part our response to this question depends on our normative judgements about the counter-intuitive and sometimes perverse policy implications of a policy that single-mindedly aims at promoting maximal average utility. It also depends, however, on the empirical question how strong these mental adaptation processes are in reality. Earlier on we noted that Veenhoven regards life satisfaction on domains as a less reliable indicator of 'happiness' than overall life satisfaction. The reason is that the intuitive judgements on domains such as income, education or marriage, seem to be more strongly based on cognitive judgements rather than on affective moods. If that is true, and if mental adaptation caused by changes in circumstances are primarily based on cognitive processes, then subjective well-being experienced in (at least some) domains will be more strongly influenced by such adaptations than it is at the overall level. According to Veenhoven, overall life satisfaction is indeed primarily determined by the affective component, and therefore it is much less vulnerable to the effects of mental adaptation.

Before examining this point in more detail below, we return to the findings that subjective well-being is also strongly influenced by social comparisons with reference groups. In particular, the well-being effect of income, but also of education, is affected by the levels reached by members of the reference groups to which individuals compare their own

[5] Utilitarians would object to this argument that legislation to ban racism will make society in the long run and all things considered happier (the 'rule-utilitarian response'). However, our point here is that such legislation already exists, and enforcing it becomes more difficult if one claims, based on mental adaptation processes, that minorities should not complain about increasing levels of racism since these hardly affect their happiness.

situation. As a consequence increases in income, or additional educational credentials, contribute less to satisfaction in these domains, the more income or educational progress is achieved within the reference groups. Apparently, these resources have a stronger positional component than other resources do, in particular leisure time, where the comparison effect appears to have a much weaker impact on well-being obtained from an additional unit of free time (Griffith 2005). Much research has been done on these cognitive processes, among others by the school of Van Praag. The panel-analysis of Burchardt (2005b) and the research reported in Kahneman and Krueger (2006) also investigate how effects of social comparisons made in the past impact on present well-being. This research thus integrates social comparisons with processes of mental adaptation.

What is the problem if we adopt a measure of the quality of life in which quality strongly depends on a person's relative resource position in several reference groups? Defenders of the subjective well-being approach rightly claim that uncovering these dependencies in psychometric and econometric research has made a major contribution to the insight that more income and more consumption do not make us happier above a certain threshold level (Nickerson *et al.* 2003 ; Layard 2005). We agree, but at the same time these mechanisms strongly focus attention on devising policy strategies of eliminating or reducing the effects of social comparisons. But it is hard to envisage a set of acceptable policies that would drastically minimise rivalrous behaviour of people, or would create a society in which the many reference groups to which people orient themselves cease to influence their subjective well-being. It may therefore be better to search for indicators of quality of life that put less stress on subjective well-being and more on objective factors.[6]

In the meantime, all of this hardly poses a problem to Veenhoven, since he holds that 'happiness' (understood as overall life satisfaction in the quote that follows) is not a matter of social comparison (Veenhoven 2002a: 26-27):

> "if happiness can be found in being better off than the neighbours, then within one country there must be about as many happy as unhappy people, and the average should be around 5, an a scale from 0 to 10. However, [we have] seen that the average is far above neutral" (our translation).

But this rebuttal is insufficient. The critics do not argue that happiness (in the sense of life satisfaction) is completely determined by comparisons with *all* neighbours or other potential reference groups. In that case average happiness would indeed be in the middle of the scale. The arguments say that social comparisons with selected reference groups play a significant role, not that they can account entirely for scores on reported life satisfaction. In addition Veenhoven (2002a: 26) argues:

[6] We believe that the earlier mentioned findings of the differences in the degrees in which income and leisure time have a positional character, are of great importance to the subjective approach. Whether these findings should lead to the far-reaching changes in the fiscal policies as advocated by Layard (2005, chapter 10) – an increase in the tax on labour and subsidies to leisure activities – is a question we will not investigate here.

> "If happiness is a matter of comparison, then relative welfare would be more important than absolute welfare, but we have seen the opposite above" (our translation).

This strong statement is not supported by Layard (2005), and it also goes against the findings of Clark and Oswald (1996) and those of Van Praag and Ferrer-i-Carbonell (2004: chapter 8). Moreover, Veenhoven's claim that it is precisely cognitively based measures of satisfaction which are susceptible to mechanisms of social comparison and mental adaptation, has been put into question. The work of Kahneman and Krueger (2006: 17-18) shows that mental adaptation processes are clearly present even when predominantly affective measures of overall happiness experiences are adopted.

In conclusion, there seems to be little consensus in the subjective well-being literature on the question whether and to what extent phenomena of mental adaptation and reference groups cause problems for the measurement of overall life satisfaction. However, all researchers do acknowledge that satisfaction on some domains is susceptible to these phenomena, and this may result in the counter-intuitive policy implications we mentioned earlier.

(ii) Group-differences in subjective well-being judgements

The subjective well-being approach focuses on the affective and cognitive responses of people to how their lives go overall, or in particular domains. If groups differ on average in their responses to a situation, then this may cause problems for policies, if those differences correlate with the objective circumstances that one would intuitively judge as important. There are two symmetric possibilities: (1) groups who are in the same objective situation have different levels of life satisfaction, or (2) groups with the same level of life satisfaction are in different situations, whereby it is clear that one situation is worse than the other independently of subjective well-being.

Research has indeed shown that the average level of life satisfaction between demographic groups differs systematically. In other words, if we control for the relevant factors, then some groups are significantly less satisfied with their lives than others. For example, recent Australian research (Cummins *et al.*, 2003) shows that women report a higher level of overall life satisfaction than men, after taking a number of control-variables into account.[7] The researchers cannot pinpoint the exact causes of this finding, but they do not exclude the possibility that women are 'constitutionally' more satisfied than men. This may have a biological explanation, but it may also be the consequence of processes of adaptation that men and women experience differently over their lifetimes.

The question is how government should deal with these findings. From a utilitarian perspective it would be efficient to develop a policy that is advantageous to men. For example, if due to unemployment men experience a larger drop in happiness than women (as

[7] A similar strong and significant gender-effect has been found in recent unpublished research by Lina Eriksson, James M. Rice, and Robert E. Goodin (in progress), 'Temporal aspects of life satisfaction', mimeo, Research School of the Social Sciences, ANU.

reported by Frey and Stutzer, 2002: 419), then a policy that gives men priority on the labour market will minimise the average damage in terms of happiness. But the fact that one demographic group (women, the worst off, the elderly, and so forth) are made less unhappy due to a certain event than other groups, can cause perverse policy implications if life satisfaction is declared to be the guideline for policies. Fundamental political principles such as non-discrimination and equality of opportunities for all citizens are thereby put into jeopardy. This would also be true in the symmetric case where the average level of life satisfaction of discriminated or marginalized groups does not differ significantly from the average level of a group that is not faced with these disadvantages. We do not want to claim here that the subjective well-being approach will always lead to such injustices. But we do think that a central focus on subjective well-being will make policies less sensitive to signalling and combating these injustices. Hence we join Burchardt (2005b: 94) who argues that "… satisfaction – the best proxy we have for the concept of utility- is unsuitable for assessing current well-being, justice or equality."

(iii) Applicability at the national and regional levels of policy making

The third question is whether the subjective well-being indicators are sufficiently refined and sensitive for policy at lower levels of aggregation than the level of a country. In their discussion of the criteria that an index of the quality of life should meet, Hagerty and his co-authors (2001: 2) include the criterion that the index must help policy makers to develop and evaluate policies at all levels of aggregation. Thus, the index should not only be useful for the national government, but also for governments in cities, communities, and regions.

Overall life satisfaction does not satisfactorily meet this criterion. This indicator is too crude for these purposes. Life satisfaction is less suitable for the evaluation of specific policy interventions (Veenhoven, 2002a: 34; Cummins *et al.*, 2003).[8] The effect of one policy measure such as improved child care facilities will hardly or not at all be reflected in reported overall life satisfaction, even if such policies have significant effects on the real opportunities of parents to organise their lives as they think is best. Overall 'happy life expectancy' is, by contrast, well-suited for comparing the effects of fundamental political and economic institutions on subjective well-being. This emerges clearly from the work of Veenhoven, which concentrates on studies whereby the unit of analysis is the country. In other words, Veenhoven mainly uses happy life expectancy as an indicator for *macro-analysis.* The variables that emerge as the determinants of happy life expectancy are therefore typically system-variables such as the degree of political freedom, or the presence of rule of law. But the quality of life in a micro-situation (say, living in a particular community or neighbourhood) is also influenced by many other variables.

[8] We are therefore rather puzzled by the claim of Hagerty *et al.* that Veenhoven's index of happy life expectancy meets their criterion that the index should have a clear policy focus, and should be useful for policy makers to evaluate programs at all levels of aggregation.

Is this objection also valid for the other school within the subjective well-being approach, where life satisfaction is measured at the level of particular domains, such as satisfaction with labour, income or family-life? According to Cummins *et al* (2003) these indicators are sufficiently refined to evaluate the effects of specific policy measures. But apart from the problem that domain-specific indicators of life satisfaction are susceptible to mental adaptation and social comparison, their applicability for policies is problematic, since it is as yet insufficiently clear how domain-specific indicators of life satisfaction can be influenced. In the empirical models presented by Van Praag and Ferrer-i-Carbonell, the explained variation in domain-satisfaction is often very small. The authors report (pseudo-) R^2 of 0.03 and lower. This means that the independent variables, taken together, do not explain more than 3% of the differences in domain-specific satisfaction in the data of the model. This suggests that life satisfaction at the micro-level is to a very limited extent determined by variables that are within the control of policy makers.[9]

(iv) The ontological question: *is* happiness quality of life or is it a by-product?

We want to conclude our discussion by asking the ontological question what quality of life *is*, and whether the answer provided by the subjective well-being approach to that question is satisfying. Are all aspects of the 'quality of life' ultimately reducible to life satisfaction? Research cited by Veenhoven shows, among other things, that Dutch people attach more importance to health than to anything else. From a philosophical perspective, one can ask whether health is important only insofar as it contributes to life satisfaction or happiness, or also because it has *intrinsic value*, that is, has value in and of itself. If someone is in good health, is this a good thing only because health contributes to subjective well-being? Strictly speaking, this is the logical implication of the subjective approach to quality of life. But if we accept the implication, then we must regard health as a purely instrumental factor. We can ask similar questions regarding labour, knowledge, appreciating art and culture, and intimate relationships. If all these things are to be valued purely, or even primarily, because of their contribution to overall or specific life satisfaction, then we would want to say this is a misrecognition of the contribution they make to how well our lives go.

We therefore think that this view is untenable. Ultimately, quality of life is not about how satisfied you are with life, or how happy you are. Hedonistic well-being and judgements of satisfaction rather seem to be *by-products*. How well you are feeling, or how satisfied you are with your life rather follows from the quality of the life you are leading – and this may even not be the case invariably. What the quality of life precisely *is* cannot be captured by a single experiential or cognitive formula. Quality of life may be something that stands much closer to our concrete living processes: the degree in which we can function well, given our views of the good life, and given our perceptions of the possibilities that we have to give shape to our

[9] Van Praag and Ferrer-i-Carbonell comment that while this problem may be addressed by improving the models, "… in most cases we simply have to accept that there is a strong residual random component in human behaviour."(2004: 22).

life. Such a view is much closer to Amartya Sen's capability approach, which will be discussed in the following section.

Of course, nothing has been said so far about measurability. It is surely possible that how well we feel, or how favourable we judge our overall situation to be, given our quality of life, is more amenable to measurement than trying to capture that quality itself. Nevertheless, it is necessary to separate questions of measurability from the ontological question. What quality of life *is*, in so far this can be answered, is a prior problem that precedes the question of the best way of measuring it. Even if it turns out that we can only measure quality of life indirectly, for lack of access to the relevant data, we first have to develop a coherent conceptualisation, since otherwise we can't tell what the best conceivable measures would be. Since we have just argued that quality of life is not the same as life satisfaction (however easy the latter may be to measure), we want to search for other ways to measure the quality of life within the capability approach. This will be discussed in the following chapter.

2.2.5 Conclusion

From the overview presented in this chapter we draw the following conclusions. Subjective well-being indicators, such as satisfaction in domains, or overall life satisfaction, give important insights in the experiences of well-being of the population (e.g the strongly decreasing subjective marginal contribution of income, and the different extent to which income and leisure time are positional goods). However, taken together, the four problems that we outlined above make the subjective approach less suitable as the basis for an index of life quality that is useful for policy purposes. But we certainly do not wish to deny that the approach which gives central stage to overall life satisfaction as the measure of life quality is a coherent one, and is based in a respectable tradition which moreover is developing rapidly in widely based research. We therefore recommend that measurements of life quality which are based on either of the two other approaches should be systematically compared to measures of reported life satisfaction, but without making the latter the decisive criterion of validation.

2.3 The capability approach

2.3.1 It's about our possibilities to function

The third theoretical framework for quality of life is the capability approach. It argues that the quality of life consists in the real opportunities of individuals to function in various areas of social life. The approach is relatively novel, but is connected to centuries-old theories about what makes life valuable. While its concepts are new, some of its core insights can be traced back to a number of intellectual traditions. To us, the capability approach has an intuitive appeal, because it gives a theoretical elaboration of how people experience their lives in practice on the basis of what they are able to do rather than how they feel.

The capability approach has been gradually developed by the economist and philosopher Amartya Sen (his first programmatic statement was the Tanner Lecture of 1979, published as Sen (1980)). Sen formulated the main theoretical concepts, and has illustrated their relevance with a number of simple empirical applications. In the last few years, Sen has added less new research to the capability approach, and the most prolific contributor has been the philosopher Martha Nussbaum. However, her version of the capability approach is predominantly philosophical, and the empirical part of her work is mainly based on narrative methods, which limits the relevance of her work for policy. In contrast to Sen, Nussbaum has not much to offer on the question how the capability approach can be translated into quantitative analyses or the production of statistics.

2.3.2 Functionings, capabilities, and quality of life

The two core concepts of the capability approach are *functioning* and *capability*. A *capability* is the real opportunity of a person to 'be someone or do something', in other words, the opportunities for flourishing that a person has. Examples are the capability to read, write, dance, being well-nourished, being healthy, even being happy, caring for others and being cared for, being able to work, being able to relax, and so forth. In principle, there are an unlimited number of capabilities.

Capabilities are thus opportunities, not realisations or outcomes. The concept refers to the option set from among which a person can choose the option he or she wants to realise. Such a realised option Sen calls a *functioning*. For example, a decent childcare system can allow both parents to hold full-time jobs, or large part-time jobs, but it also allows parents to care for their children all by themselves. These parents have the capability to combine paid employment with care work, and the precise mix of functionings can be chosen by the parents themselves.

Another important concept of the capability approach is the idea of *conversion factors*. These are factors that govern the conversion of resources into capabilities. Conversion factors take account of human diversity. Sen distinguishes three types of conversion factors: personal, social and environmental. Examples of personal conversion factors are physical handicaps: whether one possesses real options of moving around on one's bicycle will much depend on one's bodily ability to ride it. Hence a disabled person cannot convert this resource into the capability of mobility as efficiently as an able-bodied one can do. A different example of a social conversion factor is racism: in a society which discriminates against black people, a black person can be well trained and have all the necessary educational degrees, but can not use these resources to improve the quality of his life to the same extent as a white person with the same degrees and skills can do. An example of an environmental conversion factor is a rough climate, which may limit opportunities to perform agricultural activities on fertile soil. One could also distinguish institutional conversion factors, such as time-autonomy, the degree in which a person can allocate her time freely between different spheres of life. In

Chapter 3 we make use of this conversion factor when discussing how to operationalize the capability approach.

How does the capability approach apply to research on quality of life? According to Sen, we should be concerned with people's capabilities of functioning in various domains of life, while leaving it up to their own preferences and values which of these functionings they choose to realize, and which ones they would rather leave unused. In discussing the quality of life, one can make the same distinction between what is genuinely possible on the one hand, and what possibilities are in fact realized on the other: hence we can distinguish real accessible quality of life from realised or effective quality of life. Sen conceptualises real accessible quality of life in terms of a person's capability set, and realised or effective quality of life in terms of the vector of (chosen) functionings that persons actually achieve.

It obviously matters which of these two is taken as the relevant basis for life quality measurements in the context of public policy. From Sen's perspective, capabilities are primary. In his view, the political goal is in principle the guarantee of real options, so that citizens can make their own choices regarding the levels of functioning they would wish to realize, given their own ideas about the good life. The two most important reasons for this stem from the liberal premises we discussed earlier: (1) the government is not mandated to decide how citizens should lead their lives, and (2) adults capable of acting should bear responsibility for their own lives, once fair shares of effective opportunities for reaching a good life are in place. As we have noted in 2.1, the resource approach uses these same premises to argue for a public conception of life quality that is strictly limited to the availability of all-purpose means, on the understanding that these are the only legitimate units of account for judging people's opportunities to achieve the lives they wish to live. However, it was also seen that the capability approach criticises this liberal reluctance to specify the good life even in general, as a wrongly conceived retreat from ends to means. Sen's concept of capabilities tries to make up for that supposed defect of the resource-based approach, by taking socially relevant functionings as the space on which to define real opportunities. Thus the claim that capabilities, rather than levels of achieved functioning should underlie public efforts to promote life quality is partly based upon these liberal reasons, but at the same time it must be based as well on the claim that opportunities for functioning *constitute* life quality independently of those reasons. Can this be shown?

Listening to the experiences of people indeed gives some evidential indications that capabilities are a constitutive part of the quality of life. A recently published study by Ini Grewal and her colleagues confirms Sen's claim that people themselves think about their own lives in terms of what they are *able* to do and to be. According to this qualitative research, the quality of life is about capabilities, and not so much about resources, happiness, satisfaction, or even about the degree to which one is effectively functioning (Grewal *et al.* 2006).[10] This research team is currently setting up a further research project that aims at developing an

[10] The description that follows is in part based on this published article, and in part on correspondence with Jo Coase (University of Birmingham).

index of the quality of life for the elderly in the UK, which does not limit itself to health indicators, as most other quality of life measures for the elderly do. In the first phase of this study, which consisted of in-depth interviews with elderly, it emerged that respondents themselves chose to describe their quality of life in terms of capabilities to function. This is an interesting observation, since the researchers had not started their project from a capability perspective, but rather were led into it by the findings of their interviews. Originally, their aim was to stay much closer to the methods and concepts of traditional health economics, but the responses of the elderly actually pushed their conceptualisation in the direction of the capability approach. The research of Grewal and her colleagues suggests that the elderly do not so much see their actual functioning as constituting their quality of life, but rather the real options they have to attain these functionings. In other words, it emerges that their capabilities, rather than their functionings are important. Frey and Stutzer's (2005) research on the subjective well-being that Swiss citizens draw from the opportunities to democratic participation at the local level points to similar results. We return to this research below.

2.3.3 Functionings or capabilities?

In the previous section we gave two reasons why, according to the capability approach, inquiry into the quality of life should primarily focus on capabilities rather than on realised functionings. On the one hand there is Sen's twofold normative argument that the government should not decide how people should live their lives, and that adults bear responsibility for their own lives. On the other hand there is the evidential argument from the study by Grewal and her colleagues that quality of life is experienced, at least in part, as a set of opportunities.

However, there are good arguments not to focus exclusively on capabilities when conceptualising the quality of life. Fleurbaey (2006) argues that, while people do attach intrinsic importance to their opportunities to function in domains they value, one should not conclude from this that the functioning itself does not have any intrinsic value. It would indeed be very strange to think that people would highly value, for example, their opportunities to play in the theatre (hence value that capability), while at the same not being able to imagine that their life quality would be enhanced by actually playing a role on stage. Thus, if research reveals that capabilities are intrinsically valued, then that does not rule out that actual functionings are valuable as well, and might sometimes contribute more to life quality than having the capabilities do. This is important, since the twofold normative argument of Sen in favour of capabilities can be wrongly construed. According to Fleurbaey we should not simplistically interpret this liberal argument as the idea "… that taking account of freedom requires adopting the capability metric *and dropping any concern for achievements*" (2006: 308, our italics). We agree with this important remark. In addition, we want to point out that there are good reasons why the actual functioning of people in several domains may sometimes be taken as valid proxies of their capabilities, in an operationalization of the latter. In some cases, one could thus measure functionings, rather

than trying to assess the whole set of functioning opportunities, which obviously is much more difficult to do. And sometimes it may be advisable try and to do both, as we shall see. In what follows we will give the most important arguments for this view, and we return to it in the next chapter.

First of all, a focus on functionings can be justified when comparing inequalities between groups: if groups differ systematically in the level of achieved functionings, then one may conclude that the members of those groups did not have access to the same capabilities, unless there are plausible reasons why they would systematically choose differently (Robeyns, 2003). This is an example of how we can try to deduce information on capabilities from available information on functionings. A problem with this indirect method is that it does not account for the dispersion around mean group values, and may hence ignore individuals who have preferences and a lifestyle that does not match those of 'their group' (Cookson, 2005a: 820-821). The indirect method can therefore only be applied to some research questions, and is in any case a second-best solution.

Secondly, measuring functionings is recommended for studies on the quality of life when having access to opportunities is arguably less relevant. For example, in the case of small children it is rather evident that one will want to focus on their actual functionings in assessing their quality of life, as Shelly Phipps (2002) has done in studies for Canada, Norway and the USA. The liberal principles that favour capabilities over functionings are not readily applicable to the case of small children. Small children do not always have a good overview over their options, and can in any case only bear limited responsibility for their own well-being. In addition it is rather clear what small children would need to reach a high quality of life.

Thirdly, like other concepts of option sets or opportunity sets, capabilities are subject to several kinds of interdependencies. First, there are interdependencies between capability-levels that follow from the decisions of an individual to allocate scarce resources over different domains. For instance, someone can invest his available resources, including time and money, to the domains of care, recreation, or alternatively to the domain of political participation. If the size of capabilities in these domains depends strongly on the same resources, then in many cases one can assume that the person chooses to allocate these resources in such a way as to realise the functionings that he or she wants to realise, after a process of deliberation. This implies that we could measure capabilities across rivalling domains, by measuring the functionings that are reached in each of those domains. As we will argue in Chapter 3, there are problems with this approach, but the phenomena of optimising the scarce resources that are shared by capability-domains is also an important reason to focus on functionings in the operationalization. An advantage of this method is that one is then focusing on the capabilities that people do in fact value most.

A second kind of interdependency is given by the fact capabilities are to a significant degree determined by interactions between people. Again, this is true for other notions of option sets or opportunity sets. For example, each of two parents can separately have the opportunity to choose a demanding job that cannot be combined with minimal levels of care for their

children, but it may be impossible for *both* parents to do so. When measuring the capability of doing paid work in the domain of labour, we thus cannot simply add up all the options that are available in principle to someone with certain skills and credentials, but we need to distinguish between options of which the realisation depends on the behaviour of 'significant others' versus those where there is no such dependency. If the behaviour of others is within their legitimate domain of freedom, then the effectively realisable opportunities of individuals who stand in a relationship of mutual independence to some extent become indeterminate. This may also provide reasons for focusing directly on realised levels of functionings (Basu, 1974; Basu and López-Calva, forthcoming).

Finally, one could also try to solve the issue of choosing between functionings and capabilities in a conceptual manner, by measuring 'refined functionings' (Sen, 1987: 36-37; Fleurbaey, 2006). Refined functionings are functionings described in such a way that the possession of alternative opportunities is part of the being or doing itself, such as fasting, or choosing a part-time job over a fulltime one, rather than being given a part-time job. A similar way of bringing in choice options alongside achievements consists in not merely measuring realized functionings, but to include in the measure information about the opportunity of effectively making the choice to function in this way (Stewart, 1995; Fleurbaey, 2002). In the domain of labour, for example, measurement of capabilities for labour market participation could include data about the extent to which choice for a certain number of working hours is influenced by the absence or presence of certain conditions (such as childcare), the preferences of the employer, or the labour market position of one's partner.

A final and purely practical reason to measure functionings instead of capabilities has to do with the questions that one can sensibly include in a survey questionnaire. Questions aiming to collect data on capabilities rather than functionings will normally be longer and more difficultly worded, or one is forced to ask many questions in order to collect the necessary information for one capability. For example, in the *British Household Panel Survey* (BHPS), respondents are not only asked if they are in fact going on holiday, buying new rather than second hand clothing, invite their family and friends once a month in their house (and so forth), but respondents answering 'no' are asked the additional question whether they would like to do so, but cannot afford these things.[11] This twofold structure results in three categories of respondents: those who have realised the functioning, those who have not realised the functioning because they do not have the corresponding capability, and those who have not realised the functioning but did have the capability to do so if they wished. In short, research on capabilities will have to balance the risk of a lower response ratio due to unmanageable survey requirements against the theoretically motivated wish to collect as much information as possible about people's opportunity sets, rather than just about the functionings they happen to achieve.

[11] For applications of the capability approach based on the BHPS, and for discussions about the usefulness of the BHPS for such applications, see Anand (2005), Anand, Hunter and Schmidt (2005) and Robeyns (2006a).

We conclude that specific studies on domains of the quality of life in the literature are sometimes rightly focused on functionings rather than capabilities. For the reasons just listed, this is the case quite often. Nevertheless, there is no general rule that can be applied in all cases, and it will always be necessary to take a decision based on careful reasoning. We return to this question in Chapter 3, where more will be said about operationalization of capabilities.

2.3.4 Which capabilities?

The capability approach reaches out into many areas of life, so much may be clear. In the formulations so far thousands of relevant capabilities can be imagined. So if the quality of life is approached in terms of human capabilities, which capabilities should one then focus on? Being healthy? Being well-educated? Being safe? Being protected against wind, water, cold and heath? Being well-fed? For Veenhoven (2002a) the necessity to select among these dimensions is an important reason to reject 'objective' indicators: he argues that making such lists will only reflect the 'delusions of the day', and will therefore be unavoidably ideological.

Before we proceed with this, it should be noted that the question how to select the relevant dimensions for assessing life quality is an issue for *all* multi-dimensional theories, irrespective of whether an individual's quality of life is approached as a vector of available resources, or subjectively as a combination of reported satisfaction on different domains. A one-dimensional indicator such as Veenhoven's life satisfaction does not face this problem, but as we noted in the previous section, overall life satisfaction is not particularly well-suited to develop or evaluate concrete policies. Moreover, the reliance on a one-dimensional indicator doesn't make the overall version of the subjective approach any less problematic, since in the end every theory of the quality of life needs to give convincing arguments why its conceptualisation is the best available.

Sen himself does not present a definite answer to the question which capabilities are relevant for the quality of life (Sen, 1993, 2004b; Nussbaum, 2003; Robeyns, 2003, 2005b). There are two reasons for this. First of all, Sen has not presented the capability approach as a theory that specifically aims to assess the quality of life. Rather, it is a general framework that can be used for the conceptualisation of social justice, inequality measurement, the measurement of poverty, development policies, and so forth. In addition, Sen's framework has a large reach. Capability research can be applied within a wide range of geographical and social situations, such as Alaska, Amsterdam or Sub-Saharan Africa. For such different worlds, Sen believes it makes no sense to propose only one single list of relevant capabilities.

The second reason for Sen to leave open the list of capabilities is the importance of democratic processes when making judgements about the lives of people. He is opposed to letting the philosopher-king, or a group of guardians determine what is good for all; there has to be some scope for the affected parties to have their voices heard. For research on the quality of life, this means that scholars must be prepared to enter into dialogue with several groups in the society, and that no proposal concerning the content and substance of the

quality of life can have the last word. According to Sen, our views about what constitutes quality of life, and how we should understand that notion in a public context are thus made subject to a conversation process that is constantly open to revision.

Nevertheless, philosophers and social scientists have actively pursued the question which capabilities are the relevant ones. Martha Nussbaum has spent more than a decade developing a list of capabilities. Her project is to develop the capability approach into a theory of the political foundations that each political constitution in the world should respect (Nussbaum, 2000, 2003, 2006). Nussbaum defines capabilities more widely than Sen, and she especially highlights the talents, skills and internal capacities of human beings. One could say that while Sen focuses on the socio-economic aspects, Nussbaum stresses the psychological, emotional and aesthetic aspects of the quality of life. This may be explained by the fact that, while both are philosophers, Sen is also an economist, whereas Nussbaum is a scholar of the Classics, and thus inspired by classical works and literary studies of the emotions. To illustrate this contrast, here is Nussbaum's most recent version of the list of capabilities (2006: 76-78):

Nussbaum's Central Human Capabilities

1. *Life.* Being able to live to the end of a human life of normal length; not dying prematurely, or before one's life is so reduced as to be not worth living.

2. *Bodily Health.* Being able to have good health, including reproductive health; to be adequately nourished; to have adequate shelter.

3. *Bodily Integrity*. Being able to move freely from place to place; to be secure against violent assault, including sexual assault and domestic violence; having opportunities for sexual satisfaction and for choice in matters of reproduction.

4. *Senses, Imagination, and Thought.* Being able to use the senses, to imagine, think, and reason—and to do these things in a "truly human" way, a way informed and cultivated by an adequate education, including, but by no means limited to, literacy and basic mathematical and scientific training. Being able to use imagination and thought in connection with experiencing and producing works and events of one's own choice, religious, literary, musical, and so forth. Being able to use one's mind in ways protected by guarantees of freedom of expression with respect to both political and artistic speech, and freedom of religious exercise. Being able to have pleasurable experiences and to avoid nonbeneficial pain.

5. *Emotions*. Being able to have attachments to things and people outside ourselves; to love those who love and care for us, to grieve at their absence; in general, to love, to grieve, to experience longing, gratitude, and justified anger. Not having one's emotional development blighted by fear and anxiety. (Supporting this capability means supporting forms of human associations that can be shown to be crucial in their development).

6. *Practical Reason.* Being able to form a conception of the good and to engage in critical reflection about the planning of one's life. (This entails protection for the liberty of conscience and religious observance.)

7. *Affiliation.*
(A). Being able to live with and toward others, to recognize and show concern for other human beings, to engage in various forms of social interaction; to be able to imagine the situation of others. (Protecting this capability means protecting institutions that constitute and nourish such forms of affiliation, and also protecting the freedom of assembly and political speech.)

(B). Having the social bases of self-respect and nonhumiliation; being able to be treated as a dignified being whose worth is equal to that of others. This entails provisions of non-discrimination on the basis of race, sex, sexual orientation, ethnicity, caste, religion, national origin.

8. *Other species*. Being able to life with concern for and in relation to animals, plants, and the world of nature.

9. *Play.* Being able to laugh, to play, to enjoy recreational activities.

10. *Control over One's Environment*.
(A). *Political.* Being able to participate effectively in political choices that govern one's life; having the right of political participation, protections of free speech and association.

(B). *Material.* Being able to hold property (both land and movable goods), and having property rights on an equal basis with others, having the right to seek employment on an equal basis with others; having the freedom from unwarranted search and seizure. In work, being able to work as a human being, exercising practical reasons and entering into meaningful relationships of mutual recognition with other workers.

Nussbaum's list is intended to be a list of capabilities, not of realised functionings, as the 'being able to' clauses show. In other words, she does not propose - as some of her critics wrongly argue - that every adult should be sexually active, but rather that every adult should be allowed and empowered to have this opportunity. For Nussbaum the good life entails that threshold levels of the capabilities on her list are provided for all human beings. Hence, for a good life it is important that we are not subjected to bodily violence, but if someone chooses to be a boxer, then this person should be free, according to Nussbaum, to enter the ring.

Although Nussbaum does not want to force anyone into actual functionings but rather deals with people's capabilities, her project has nevertheless received quite some criticism. The critiques are not just about the precise items on the list, but also express concern that this list resembles the Platonistic project of the philosopher-king. Nussbaum argues that her list has been developed by listening to people in several cultures and countries, and that the list is constantly open for revision. But in the meantime it remains her own list all the same, of which she argues that minimal levels should be provide as a constitutional right by all governments to their citizens. Some of Nussbaum's critics find this attitude paternalistic, undemocratic, or even politically illegitimate (Menon, 2002; Robeyns, 2005b). Other authors who have tried to define quality of life in terms of capabilities have therefore suggested

methods for deciding how to select capabilities, and explicitly discussed the question of who should be entitled to take part in this selection (Alkire, 2002; Robeyns, 2003, 2005b). This literature shows that so far, different attempts have been made to identify the relevant capabilities that together constitute a person's quality of life, but that there is no unanimity on how this selection should be done, and which capabilities should ultimately be included.

One could select the relevant capabilities by using a procedure that aims to minimise the risk of incurring epistemological and ideological biases (Robeyns, 2003, 2005b). The general goal is to make the selection procedure as neutral and open as possible. The criteria are the following:

Explicit formulation and debate: the list of dimensions needs to be made explicit, defended, and debated

Methodological justification: the method used to derive the list has to be explained and defended.

Sensitivity to context: the list needs to be drawn up at the level of abstraction appropriate for the goals it serves, and formulated in the language of the debate it enters.

Distinguishing between different levels of generality: if the selection of dimensions aims at an empirical application, or aims to lead to implementable policy proposals, then the list needs to be drawn up in two phases. The first phase involves the drawing up of a kind of ideal list, whereas in the second phase pragmatic considerations come into the picture. Constraints such as measurability, availability of data, or political considerations should only enter in the second phase, since these constraints can change over time, and experience shows that otherwise existing biases in the collected data will be reproduced.

Exhaustion and non-reduction: the list of dimensions should include all possibly important dimensions, and these should not be reducible to each other. For example, non-market activities which contribute to the quality of life are sometimes left out, for reasons that are related to the development of economic science. This kind of bias caused by neglect should also be avoided.

These are exacting criteria, but one simple expedient is to start with a brainstorming session, to do a literature review of all (academic and non-academic) relevant literature, to consult other relevant lists, and to open the draft list for discussion and debate (Robeyns, 2003: 72-74). For some researchers this may appear to be a self-evident method, but many existing empirical applications of the capability approach, and also other approaches that use 'objective lists', are based on *ad hoc* lists of dimensions, with little attention being paid to the justification of the selected dimensions.

2.3.5 Evaluation of the capability approach

Is the capability approach a good candidate for conceptualising and measuring the quality of life? At this stage, it is too early to be sure, since there are only a limited number of

applications. However, based on ontological and conceptual grounds, there are certain aspects of this approach that, in our view, give it some strong advantages.

First of all, the capability approach captures well what the quality of life *is*: it is what we are effectively able to do and to be, and how we can concrete give shape to our life. From an ontological point of view, the selected functionings and capabilities correspond to the quality of life of people, if care has been taken to make the selection process of capabilities sensitive to context in the way described above. We are not the only ones expressing this point of view. The German Ministry of Health and Social Security has used the capability approach as the theoretical foundation of its second report on poverty and affluence (Bundesministerium für Gesundheit und Soziale Sicherung, 2005). The earlier mentioned study by Grewal and her colleagues (2006) also lends some support to our ontological claim.

Secondly, the multi-dimensional character of the capability approach reflects the diversity of the quality of life. It may happen that quality improves in one area of a person's life, but worsens in another area. Multi-dimensional concepts can study these partial aspects of life quality independently.

Thirdly, once a list of capabilities has been drawn up, the capability approach is predominantly objective. This makes it possible to avoid the problems of mental adaptation to which the subjective approach is vulnerable. Policies aimed at improving the sustainable life quality of a population need to focus on the capabilities of this generation, without jeopardizing the potential for future generations to attain capabilities. Even if it were known that future generations would somehow be able to derive the same satisfaction from lesser capabilities, this should not be a valid ground for relaxing intergenerational requirements of sustainability. Contrary to the utilitarian position, we think it is not the main task of government to make people happy, but rather to organise society in such a way that its citizens are offered valuable real opportunities to give shape to their own lives. The government then needs to focus on objective dimensions, for if promoting subjective well-being is the overarching policy criterion, then people or groups with a 'shiny disposition' – the so-called *efficient converters* of opportunities into utility – would often end up being disadvantaged in their real opportunities.

These arguments do not entail that the capability approach wants to do away with subjective indicators entirely. If we study certain aspects of the quality of life, for example time pressure arising from competing desires to function effectively in different areas, then we do need to ask our respondents how they evaluate their situation subjectively, but we also need to collect precise objective information. Take the example of safety in urban environments. Subjective judgements about 'safety on the street' often do not correspond to the real risks of certain groups of people to become a victim of violent attacks. The Dutch Social and Cultural Planning office (SCP) reported that while objective measures showed that the rate of criminal offences on the street decreased, subjective feelings of unease and fear among the population regarding safety issues rose in the same period. If we only take this subjective information into account, we would get a distorted picture. This is not to say that the subjective judgement is unimportant, for it is certainly useful to know that the population is more concerned about

safety issues, even if the real threat of incurring violence is in fact diminishing. The appropriate reaction would be to highlight the discrepancy, inform the public about the objective tendencies, and investigate why people in general, and some groups in particular, are feeling less safe.[12] In conclusion: if subjective and objective indicators give conflicting information, we have to take notice and try to understand the discrepancy. But in a capability-based index of the quality of life we have to give priority to objective indicators. As we will discuss in Chapter 3, however, the capability approach can take subjective information into account when constructing individual weighting factors for functioning-levels in different domains.

2.4 Towards a capability-index

We want to complete our survey of the three approaches to quality of life with a synthesis of how they relate to each other. Figure 2.1 presents the causal relations between the three approaches.

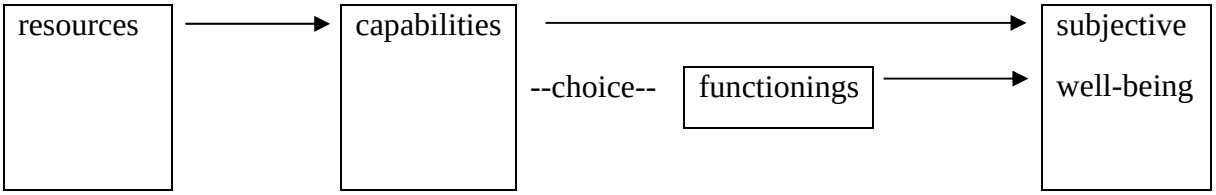

Figure 2.1 The direction of causal relations between resources, capabilities, and subjective well-being.

The resource-based approach holds that the 'quality of life' is what people do with their resources. Questions about the content of the quality of life are not considered to be a legitimate task of the government, which needs to be neutral between the divergent views that people have about the good life. The government needs to restrict its care to guaranteeing access to collective resources and to regulate entitlements to individual resources, and it ought not to impose its own views about the appropriate use of those resources.

The capability approach holds that resources are important *inputs* for the quality of life, but that the quality of life itself is captured by the functionings and capabilities of individuals. In contrast to liberalism, which doesn't want to go beyond identifying resources that can be used for a wide range of goals, the capability approach argues that a debate about the general and

[12] For example, it may be the case that an increase of reported levels of crime is creating the impression among the public that the number of actual criminal offences is increasing. See Wittebrood and Nieuwbeerta (2006) for an analysis of the last 25 years in the Netherlands.

specific opportunities to shape our lives surely lies within the legitimate domain of the government. The subjective well-being approach agrees with the view that resources are means for multiple goals, but in addition holds that the only neutral indicator for judging how well people fare in their achievement of those goals, is their life satisfaction, either overall (Veenhoven) or additionally in specific domains of life (Van Praag and Ferrer-i-Carbonell). This is why the subjective well-being situates quality of life at the righthand end of the causal scheme of figure 2.1. Thus the subjective approach holds that it is the government's duty to advance 'happiness' or 'life-satisfaction', even though not all variants endorse giving an absolute priority to the utilitarian master principle of maximizing average life satisfaction. Against this, the capability approach argues, on ontological grounds, that subjective well-being cannot be regarded as the ultimate measure of the quality of life, but should rather be seen as a (undoubtedly desirable) by-product. In the scheme in figure 2.1, capabilities and functionings, but also subjective well-being, are presented as *outputs* of the all-purpose means at the resource end. However, there are two differences. First of all, capabilities and functionings are outputs that can be intersubjectively identified only within a given society, in open discussion. We should debate and discuss their relevance, for the notion of life quality is not - at least not in our view, which follows Sen rather than Nussbaum - interculturally and universally determinable by philosophical reflection. By contrast, happiness, life satisfaction, or satisfaction on domains, are purely subjective outputs of persons' resource utilisations.[13] However, secondly, in so far as life satisfaction issues from the way in which people experience their opportunities to function, and their actual functioning levels, it is also a causal output of functionings and capabilities. For as figure 2.1 shows, functionings and capabilities are situated as *intermediating* between resources and subjective well-being.

Next, it is important to note that capabilities - the real opportunities to function effectively - can have a strong effect on life satisfaction, independently of the satisfaction that people derive from their actual functioning. Even the secure knowledge that certain opportunities are open to persons can have a positive effect on their happiness. For example, many inhabitants of cities with significant national heritage or cultural centres appreciate the possibilities to enjoy these cultural and historical goods, even if they are leading a secluded life and never actually do visit these sites. Another example can be found in the domain of political rights. Frey and Stutzer (2005) show that the opportunities for direct political participation in Swiss villages and cities has a positive effect on life satisfaction, independently of the level of actual participation. This is another illustration of the upper part of the causal scheme in figure 2.1, whereby the (Swiss) formal democratic rights at the local level figures as the resource, the availability of which contributes to people's opportunities to participate in the collective decision process of their local community. The presence of these capabilities subsequently produces subjective well-being, quite apart from the choices that citizens actually make to divide their time over political participation and other activities that generate

[13] We reject the causal scheme that was presented in Hagerty *et al.* (2001: 79-81) as a theoretical instrument which should be used for all quality of life indexes, since that scheme does not offer us the appropriate space to include functionings and capabilities, and it also does not allow us to recognize that functionings and capabilities are also outputs.

life satisfaction. The capability approach thus allows that causal relations between resources and subjective well-being follow different chains. Thus, even if one ultimately prefers a subjective approach to the quality of life, it may still be important to examine functionings and capabilities, as is in fact being done in some of the literature. A similar observation holds for those who prefer the resource-based approach to life quality. For as we have discussed in 2.1, it is by no means immediately evident what types of resources are actually required for people to realize their own and diverse conceptions of the good life. In order to argue why, for example, civil rights or cultural heritage need to be included among the relevant all-purpose means in a list of vital resources for the quality of life, empirical research concerning the well-being actually generated by those resources is indispensable. And in such research, focusing on functionings and capabilities as direct consequences of resource use would certainly be a good way of proceeding.

In this Chapter we have examined the three approaches in terms of how they conceptualise the quality of life and to what extent they are suitable as a theoretical foundation for a policy-relevant measure of the quality of life. The synthetic overview in Figure 2.1 above shows that the three approaches are closely related, since capabilities and functionings need resources as inputs, and ultimately generate subjective well-being. A choice for one of the three approaches is therefore a choice to locate the quality of life in a particular part of this causal chain. If one favours the capability approach, then quality of life is considered as the intermediate stage in the trajectory from resources to subjective well-being, or, as the political philosopher Gerald Cohen has phrased it, as the "*midfare* derived from resources, rather than preferences satisfaction or welfare" (Cohen, 1993).

If we consider all advantages and disadvantages of the different approaches that were discussed in this chapter, our conclusion is that *on theoretical grounds* the capability approach is to be preferred as the foundation for a measure of the quality of life. However, it must be kept firmly in mind that the *empirical* development of the capability approach is still in an early stage. It is possible that further research will reveal disadvantages of a capability-based life quality-index that are insufficiently appreciated at present. Given the limited brief of this study, we cannot attempt to carry the empirical programme implied by the capabilty approach all the way. Thus we cannot present a full construction of a capability-index, for as we will show in the following Chapter, this involves a lot of hard and detailed work. Rather, our aim is to provide the foundations for such a project of index-construction.

3 Towards a capability-index of the quality of life

In the previous Chapter we argued at length that good theoretical and conceptual reasons exist for choosing a capability approach when developing an index of the quality of life for public purposes. This Chapter discusses three foundational issues in the construction of such an index. In the first section (3.1) we study the selection of domains, and offer a tentative proposal on which domains should be included in an overall measure of life quality. Section (3.2) introduces some novel theoretical concepts that can be used in the construction of capability measures. In the last section (3.3) we focus on the weighting problems that arise if one wants to aggregate a multidimensional concept ranging over a number of domains into a single index figure.

3.1 The list of domains

In selecting domains, we start from the existing literature of the capability approach, and ask what we can learn concerning the general characteristics of the index that we envisage. Next we propose a tentative list of domains, and discuss how it relates to other existing lists. Finally we take stock of the steps that are needed for further operationalization. These are then developed in section 3.2 of this chapter.

3.1.1 What can we learn from the literature?

The literature on the capability approach evolves rapidly: a survey written today may be outdated in six months from now. A recent survey of empirical applications shows that at present, no scholar even has worked out the theoretical foundations of a capability-index of life quality, let alone engaged in the work of operationalizing and testing empirically such a quality index (Robeyns, 2006b). Thus in the prevailing state of the art, developing a capability-index is a pioneering task. Nevertheless, current literature does offer two important insights.

The first insight is that we need to distinguish between the design of an index based on existing secondary statistics, versus an index constructed against a background of sufficient time and resources to collect most of the data on the capability-domains. Existing empirical applications are strongly determined by the available datasets, both with respect to the selection of capabilities, as well as the possibilities to measure capabilities rather than levels of realised functionings. Almost all these applications work with datasets constructed with other purposes in mind. This is a disadvantage. If we are limited by available datasets, then it is likely that we will remain far removed from an adequate capability-index of life quality.

Since in this chapter we are primarily interested in a conceptual exploration, we assume that there are no constraints on the data that can be gathered.

Another insight from the existing literature concerns the character of the index itself: at what level of abstraction and aggregation would one like to construct an index? We can illustrate this question by the work of Ini Grewal and her co-authors, which was discussed in the previous chapter (Grewal *et al.*, 2006). Recall that this British research group is developing an index of the quality of life for the elderly in the UK. Grewal and her colleagues based the selection of capabilities entirely on information received from the elderly themselves. In the interviews, they were asked to state their life-experiences, and how they evaluate their lives based on those experiences. This information was then used to deduce constitutive domains of life quality (called 'attributes of the quality of life'). The researchers try to identify domains that do not overlap, and cover as many as possible experiences of the elderly. The five domains that Grewal and her colleagues propose are *attachment*, *role*, *enjoyment*, *security* and *control*.

Notice that the experiences of the elderly are here classified at a high level of abstraction. This may perhaps be justifiable, if it is clear that findings from the five domains will be used for policies specifically aimed at provisions for the elderly. But is this high a level of abstraction desirable and workable if one is concerned with an index for the entire population, which should be relevant for a wide range of policy domains? In their survey article on indexes of the quality of life for policy purposes, Hagerty and his co-authors (2001: 2) argue that one of the criteria an index should meet is that it be useful for policy design and evaluation. That is also the explicit goal of our study. A capability-index which seeks to inform governmental policies should be formulated at a lower level of abstraction than the five very general dimensions worked out by Grewal *et al.* We believe that it is preferable to select concrete social areas of capabilities to function, rather than abstract aspects of functioning, such as the social roles or the experiences of enjoyment, security or control. For such aspects are bound to have a different significance in each of those social areas, and moreover, a category such as 'social role' may not be entirely understandable to the respondents themselves. Thus it is important to think carefully about the level of abstraction at which one would like to develop an index. This also applies in a somewhat different way to Martha Nussbaum's well-known list, which we discussed in the previous chapter. Again the capability-domains of Nussbaum's list are formulated at a rather high level of abstraction, and correspond to a different goal than ours. They are primarily useful for a philosophical analysis of transcultural justice and constitutional foundations. Note also that a more detailed examination of Nussbaum's list shows that it includes a number of capabilities that are hardly within the scope of governmental influence - or arguably beyond it, for example the capability of 'emotions'.

3.1.2 The domains: a first attempt

In this section we propose a list of capabilities in a range of domains that we believe should be included in a policy-relevant index of life quality. Our method corresponds to the steps of the selection process described in the previous chapter, but we limit ourselves here to the first step of literature research. We derive the domains from the literature on indicators of the quality of life, together with the literature on the capability approach. For the first we use the large overview of quality of life indexes (Hagerty *et al.*, 2001) and for the second the recent survey article on applications of the capability approach (Robeyns, 2006b). This allows us to draw up a provisional list of capabilities for the quality of life. For each domain discussed in the two survey articles we posed three questions:

1. Does this domain contribute unequivocally to the quality of life, if the domain is conceptualised in terms of capability?
2. Does a low score on this domain refer clearly to a lower quality of life of the person, if all other factors are held constant?
3. Are the capabilities clearly within the legitimate domain of the government?

We present the list of domains that emerged from this process in Table 3.1 below.

Table 3.1: domains for a capability-index: a first attempt

1. physical health
2. mental health
3. knowledge and intellectual development
4. labour
5. care
6. social relations
7. recreation
8. shelter
9. living-environment
10. mobility
11. security
12. non-discrimination and respect for diversity
13. political participation

What are the practical implications of this selection? Our aim is that scores on these 13 domains of the list should together give a reasonable impression of the quality of life of

inhabitants of the Netherlands, which could be used as goals for governmental policies. In other words, this ‘quality of life’ is constituted by the real opportunities that inhabitants of the Netherlands have to function in each of these 13 domains. Domains 1 and 2, physical and mental health, are the most personal domains of functioning. Domains 3 to 8 are societal domains, whereas 9 to 13 are largely determined by the political institutions (even though in the case of domain 12, *non-discrimination and respect for diversity*, the dominant culture plays an important role).

To start with the obvious, *physical and mental health* are generally regarded as core aspects of the quality of life. The justification of separating physical and mental health is somewhat more difficult. We believe it may be justifiable to aggregate all dimensions of health, ‘physical’ as well as ‘mental’ in one single domain. Nevertheless, in the first instance we would suggest the possibility to keep them separate, since the *social* valuation of physical and mental health is rather different. It would take us too far to elaborate this point here at length, but we refer to Layard’s work, where he argues that in Western societies relatively little attention is being paid to taking care of mental health problems which nevertheless cause significant declines in subjective well-being (Layard, 2005: chapter 13).

The capability *knowledge and intellectual development* as a domain of the quality of life requires some explanation, since without doubt there are people who have little or no interest in developing their knowledge and intellectual faculties. It is perfectly legitimate and quite understandable if someone remains indifferent to understanding advanced algebra, or mastering foreign languages such as French or Russian. But making it possible that people with talents for mathematics or languages have the effective opportunity to study, generates a positive contribution to the quality of life, even of those who do not wish to use these opportunities. It is not difficult to see the policy link: this capability is supported by a range of public policies, including the support of high-quality education, the advancement of the arts and the sciences, the development and maintenance of a network of public libraries, and so forth. (Of course, supporting this capability does not imply that all such support should be provided for free; the exact distribution of the costs is analytically a separate question).

While it is possible to understand work as a source of income, the opportunity to perform labour is a constitutive aspect of the quality of life: people want to be put into a position to use and develop their talents, to feel useful, and to perform decent, challenging and meaningful work. It is possible that people living in a radically different culture, or in societies hundreds or thousands of years in the past or the future thought or will think differently about this. But in the Netherlands at the beginning of the present century, it is certainly the case that the opportunity to perform meaningful work is an important aspect of the quality of life. This does not rule out that a large number of people choose not to do (paid) work, for example because they study full-time, or because they have significant caring responsibilities, or because they are undertaking other kinds of projects. But even for these people the *opportunity* to paid labour is extremely valuable. What are the implications for governmental policies? The government can facilitate this capability by removing social obstacles, such as by giving citizens incentives for education and the development of skills,

by actively combating labour market discrimination, by removing unnecessary bureaucratic obstacles, by supporting the work-life balance, and by developing an active labour market policy that creates jobs rather than destroying them (see Schokkaert and Van Ootegem, 1990; Gallie in Esping-Andersen, ed., 2002).

Similarly, the opportunity to provide care, whether for children, the elderly, ill partners or family members, or others, is an important part of the quality of life. The government can play a role to support this capability too, for example by allowing employees to temporarily leave the labour market without losing their job and (part of) their income. This is in fact one of the goals of the Dutch lifecycle-arrangement (*levensloopregeling*), and it is further facilitated by care and parental leave in the Netherlands, and a range of measures in the other Western societies.

Another important aspect of life quality is to develop and maintain *social relations*. This is primarily a responsibility of people themselves, but nevertheless the government can play a facilitating role, for example by subsidising activities organised by neighbourhood committees that have a positive effect on social cohesion in an area, or by reserving public space for parks or playgrounds with places for the young and the elderly to meet. Obviously the issue is not just to provide these public goods, but to attend to their quality: public spaces have to be well-designed and maintained to invite people to use them in order to meet others in safety and comfort. Similarly, social relations in households and families can be fostered by the government, for example by supporting full-time carers of the ill, disabled and the elderly, or by making *het Consultatiebureau*[14] as accessible as possible, and staffed with high-quality professionals, so that its advice and services will be of real use to families who face problems with children's health or their upbringing. Again, quality of life is about real opportunities and not just about the levels of actual functioning: someone who has ample options to engage in valuable social relationships, but who wants to lead a solitary life, does not necessarily have a lower quality of life than someone who is part of a large and happy family. Social isolation thus needs to be evaluated differently when it is enforced by circumstances rather than being freely chosen.

Recreational activities are not just valuable functionings, but generally enjoyable as well: the opportunities to develop these activities are therefore also part of the quality of life. The government can facilitate this capability, for example by guaranteeing that every employee is legally entitled to a sufficient number of days off (something which is currently not the case in all countries), or by protecting nature for recreational activities.

The quality of one's *shelter* is a part of the quality of life that is widely recognized to be relevant for government policies. People's quality of life increases if they can live in a nice and cosy house, with sufficient light and if they are not faced with problems such as damp or dust, which in turn provoke negative emotions and may cause health problems. We

[14] *Het consultatiebureau* is a Dutch public institution which checks the health of mothers of newborns and their children, provides vaccinations, and gives information and advise to parents on a range of issues related to caring for and raising children. The British equivalent are the Health Visitors which are part of the NHS's Primary Care Team.

distinguish shelter from the *living environment*. In the latter case we are concerned about being able to live with clean air, water and surfaces, free of dangerous substances and heavy traffic. One could also include dimensions that relate to the good maintenance of the environmental infrastructure.

A rather different element of the quality of life is *non-discrimination and respect for diversity*. It concerns the functioning in a social environment which is free of discrimination resulting from disrespect of human diversity related to religion, sexual orientation, race, language, gender, lifestyle, etc. Even if this might seem to be a self-evident capability, it is crucial for people's well-being. This capability will be especially valued by people who have experienced discrimination themselves, or within their immediate circles. They will regard the absence of discrimination as an important part of their quality of life. The government can enhance this capability with legal and constitutional tools, for example by establishing and supporting a Commission for Equal Opportunities and Non-Discrimination, and by not reinforcing stereotypes on which discrimination is based by unnecessarily stigmatising particular demographic groups.

Mobility is also an important capability: people want to have the opportunity to move from place to place, without losing too much time on congested roads or being faced with poor service in public transport. The role for the government is clear: to develop and maintain a network of roads that enables this mobility, to develop policies that prevent queues (for example, by introducing systems of electronic pricing for cars, if such systems are effective), and by the exploitation or regulation of public transport. Similar observations can be made for *security*, since the large majority of the Dutch population experience the protection of their valuables, including the absence of physical violence, as a part of their quality of life.

The final capability that we propose is the opportunity for *political participation*. In section 2.4 we pointed at a study by Frey and Stutzer (2005), who showed that the rights to political participation by Swiss citizens have a positive effect on their life-satisfaction, independent of whether they are using these rights. Even if only a limited share of the population becomes active in political organisations and societal debates, many people would protest if they no longer had the *opportunity* to such participation. The general tendency on a global scale is that people prefer democratic over non-democratic regimes. Citizens value their opportunities for political participation and influence on political decision making.

3.1.3 Comparison with other lists

Each proposal for a list of capabilities needs to be justified according to the selection procedure explained in the previous chapter. Here we can obviously not follow this procedure. We can only seek to confront our tentative list with other lists that have emerged from the literature. This will allow us to further explain why certain capabilities are included or excluded.

First of all, let us compare the above 13 domains with the selections made for the 22 rather different quality of life indices which have been analysed by Hagerty and colleagues (2001). Some lists discussed in this detailed overview contain a number of domains that do not fit into a capability approach of life quality for individuals, such as aggregate per capita income, per capita industrial production, or indicators reflecting the current state of scientific and technological knowledge. Other dimensions are subjective indicators (satisfaction or happiness). We explained earlier why we do not include such dimensions, even if this does prevent us from acknowledging that the subjective well-being measures which correlate with scores on functionings or capabilities can be part of a study within the capability approach. A third type of dimensions in the overview of 22 indices are metrics of the distribution of opportunities and means, such as poverty indices, inequality measures and rates of social mobility. Such domains are generally meant to capture the quality of life in an entire society. They are less appropriate as part of a quality index at individual level. As we argued in Chapter 1, there are good reasons not to include distributional measures as constitutive parts of individual life quality (section 1.4).

The Hagerty overview also discusses the Living Conditions Index (LCI) which has been developed by the Dutch Social and Cultural Planning Office (SCP) from 1974 onwards (Boelhouwer, 2002a, 2000b, 2005a, 2005b; Boelhouwer and Stoop, 1998, see www.scp.nl/english). We single out this index for a brief discussion here, summarizing a more detailed treatment in Annexe B of the original report. The initial goal of the LCI was to construct an index which would represent for the social side of life in the Netherlands what GDP per capita represents for economic life. The index does not give absolute values, but allows one to chart trends in the index and its components over time. The LCI is not built on an overarching theoretical foundation. It is said to be loosely related to both the capability approach and an approach focusing on societal opportunities based on the supply and distribution of resources (Boelhouwer 2005a: 297). The domains included in the current LCI are listed in Table 3.2 below, together with the social indicators making up each domain.

Table 3.2: the Living Conditions Index

Domains and indicators of the SCP Living Conditions Index:	
1. Health	Being hampered when - performing daily activities
	- recreational activities, sport, travelling.
2. Housing	Type of building
	Area of living room
	Number of rooms
	House owned or not
	Scare spot in the neighbourhood

3. Purchasing power/consumer durables	Number of household appliances
	Number of hobby articles
4. Mobility	Car Ownership
	Season ticket for public transport
5. Leisure activities	Number of hobbies.
	Number of non-domestic entertainment activities.
	Organisational membership.
6. Social participation	Active contribution to activities of organisation.
	Volunteer work.
	Social isolation.
7. Sports activity	Number of times sporting a week.
	Number of sports.
8. Holiday	Holiday trip in the last year.
	Holiday trip abroad.
	Durable holiday articles.

Source: SCP (1998: 81); Boelhouwer (2002b: 96-97; 2005b).

The aggregation of the different indicators listed in this table proceeds in two steps. First, the eight domains are identified by using a statistical data-reduction procedure, as representing clusters of indicators which are sufficiently closely associated to form a latent dimension. The weights of each indicator are then determined by the extent to which they correlate with the latent dimension. In effect, this dimension receives a substantive interpretation, by giving it the name of the domain in question, on the basis of the content of the indicators. For example, the three indicators of domain 6 turn out to hang together closely enough to regard the latent dimension which emerges from the data-reduction procedure as the ‘domain of social participation’. This method thus rules out that a set of indicators which does not display such a close association in the data will come to belong to one and the same domain, even if there might be substantive reasons for regarding each of these indicators as distinct aspects of quality within a given area of social life. The second stage of aggregation is to give equal weights to the different domain-clusters of indicators, irrespectively of the number of indicators forming a given cluster (Boelhouwer, 2002a: 129). In section 3.3 we shall briefly comment on this procedure.

The LCI-index is to some extent compatible with a capability-based index of the quality of life. We note only a few points of difference here. Our list of capabilities does not distinguish between different kinds of recreational activities and possibilities, in contrast to the

dimensions of the LCI. We do not deny that it can be important to distinguish these for policy goals, but we believe that the LCI-dimensions *leisure activities, sport, and holidays*, can be seen as dimensions of the domain of recreation, whereas *social participation* is a dimension that falls within our domain of social relations. In addition, the SCP discusses the means for good living conditions, such as income, education and employment. Rather than regarding these last two as inputs of 'living conditions', they may also reflect past functionings within capability-options which arguably constitute quality of life. But we admit that whether indicators of 'education' or 'employment' are regarded as capability-supporting resources, or are fitted into the capability framework will depend a lot on how they are measured.[15] A similar point applies to health, which in the SCP-index mainly figures as the absence of physical barriers. Health and employment are part of our list since we believe that the opportunity to function in those domains is not limited to its instrumental value, but also carries intrinsic value. Moreover, we also want to make a distinction between the mental and physical aspects of health.

As we explain in more detail below, it will be important in the operationalization of the domains to clearly distinguish how the intrinsic and instrumental aspects of the quality of life are related to capabilities and realised functionings. Especially in the case of health, knowledge and employment, the instrumental aspects of effective functioning have implications over the entire range of domains. It may therefore be useful to ask respondents about the degree in which they have effective access to decent and useful employment (the opportunities to hold such employment are intrinsically valuable), but also to register the degree to which a person is *de facto* employed at a certain functionings- and earningslevel (since this gives us information about her future options in the domain of employment as well as in other domains). Whether one chooses to do so depends on a number of specific considerations which will be discussed below.

Finally, we would like to mention two domains that have been proposed in the literature that do invite further discussion: *independence* and *time-autonomy*. Independence, conceived as a general kind of personal sovereignty was included in the study by Grewal and her colleagues under the name of 'control' (2006). We have chosen not to include this domain for the following reasons. Firstly, it is possible to have a high quality of life without being strongly

[15] Note added to this English translation: We would like to respond to Boelhower's astute comments on the Dutch version of our report, which is included in the version published on the MNP website, together with our reply. Boelhouwer is right to point out that the logical structure of the capability approach sometimes makes it difficult to judge the extent to which a given item is to be counted as a either a 'resource' or a 'capability', or possibly as both. Our criterion for including an item in a list of valuable functionings or opportunities to function is that such value must be intrinsic, not merely instrumental for other purposes. For example, one can assess someone's net income, without inquiring into its source. In that case, one is surely measuring in the space of resources. However, if we assess someone's income from work, then the size of that income may also be held to indicate the person's *capability to provide resources*. In market economies, having this capability is arguably desirable in itself, quite apart from the goods and services which the income can actually buy. It may therefore be defensible to consider including earnings from work as a proxy measure of this particular capability in the domain of labour, as a dimension distinct from the more familiar measures of life quality in work, such as degree of autonomy in performing tasks, having a private work space and so on. It should also be noted that these quality indicators in the domain of labour need not invariably correlate highly enough to make up a single latent dimension. In the LCI methodology, this would be a problem. But as will be argued below in section 3.3, we do not think that it is necessary to aggregate quality indicators into domains by this method.

independent: a paralysed person bound to a wheelchair is dependent on others to be mobile, but if there are others available to guarantee mobility whenever the disabled wants to go someplace, then that lack of independence may not have a direct negative influence on her quality of life (her disability does, of course). Secondly, independence is at a higher level of abstraction than the domains we propose. Thirdly, it is not clear whether independence properly belongs in a policy-relevant index of the quality of life, since it is not clear to what extent the government can influence this domain, except for guaranteeing fundamental democratic and civil rights.

In contrast to the list proposed by Robeyns (2003) for the empirical evaluation of gender inequality in western societies, our list does not include the domain of 'time-autonomy'. This raises the question whether we should include the abstract capability to allocate one's time as one sees fit as part of a capability index. We will return to this question below, after we have first discussed what else is needed for further processes of operationalization and measurement.

3.1.4 Further elaboration

Merely presenting a list of capabilities is still far removed from a full operationalization, let alone a useful measurement tool. How do we have to interpret this list, and what else is needed for the further development of a capability-index of the quality of life? Further research might develop according to the following sequence of stages.

The first stage is to make the list robust and perhaps refine and modify it, through further discussion and debate, and further empirical research. As we discussed in section 2.3, the selection of relevant capabilities should be based on quantitative empirical research, complemented with in-depth interviews, focus groups, and other qualitative methods. Even if research on capabilities and the quality of life is in its infancy, nevertheless the available empirical studies in this field allow us to conclude that such methods are practically feasible, can lead to interesting insights, and can prevent possible biases in the selection process (e.g. Biggeri *et al.*, 2006; Grewal *et al.*, 2006; Wolff and de-Shalit, 2007). Within the scope of the present study it is impossible to follow this procedure. Therefore our selection of capabilities has to be understood as open and tentative, as a first step on the way to a more in-depth analysis.

Once there is a consensus on a workable list of capabilities, the next stage is to determine the dimensions for each of the domains, and the indicators for each of the dimensions. Again it is beyond the scope of the present study to take this step, but we will indicate how such a process may unfold. For each domain there exists a body of research in which scientists have studied the quality of life in a variety of ways. In these specialised fields a lot of work can be found that can clarify which indicators are appropriate and useful within a capability-index of life quality. For example, for the domain 'labour' one can turn to national labour studies to find indicators, and also to the department of statistics of the *International Labour Organisation*. We believe that the selection of one or more dimensions for each of the

capability domains on the list requires close cooperation with specialists from different fields of research, since a lot of knowledge already exists that is useful for developing a capability-index. However, we also believe that this should be a cooperative effort rather than commissioned research, since otherwise there is a significant risk that the index will become less coherent. If the goal is to develop a genuine capability-index of the quality of life, then it is important that the different parts of the index are integrated by scholars who are well-versed in the theoretical niceties of this approach, and can take responsibility for the 'final editing' of the index.

The third stage of further research concerns the formulation of survey questionnaires, where the contribution of social scientists who specialize in survey design is essential. Below we provide some preliminary thoughts on the kind of information we need to collect via these questionnaires. In the fourth and final phase, pilot studies should be conducted to test the questionnaires, and to refine the instrument before it can be effectively used in large scale data collection.

3.2 Conceptual choices in operationalizing capability domains

In this section some theoretical notions appear on stage that may be useful when operationalizing the capabilities in separate domains. First we introduce the notion of a capability input mapping (3.2.1) and two related notions, competing capabilities and limited capability inputs (3.2.2). Next we elaborate on the issue of time –since this is the most limited capability input– and discuss the role of time autonomy in the capability approach (3.2.3). Referring back to what has been said in 2.3.3, we also discuss one of the most important problems in operationalizing the capability approach, the question of whether one should measure a capability as a set of functioning opportunities, or rather as a realised functioning level which is indicative for that set, or perhaps a combination of both (3.2.4). Finally (in 3.2.5) we summarize a more specific proposal for operationalizing the 13 domains.

3.2.1 The capability input mapping

A capability input mapping is the set of factors that enable the development or maintenance of capabilities on each of the domains of the list. These capability inputs can be seen as resources, as broadly described in Chapter 2. However, we need to take into account that reaching a certain level of functioning in some domains (think of the domains of knowledge or labour) may also be among the factors that enable a person to develop or maintain certain capabilities in other domains, or even in the same domain. At this point we will ignore this dynamic complication, but we return to it briefly in 3.2.4. In addition, the theoretical literature of the capability approach also stresses the importance of conversion factors in a capability input mapping. These are *indirect* capability inputs, being defined as factors which

facilitate or hamper the conversion of resources into capabilities. We postpone the discussion of conversion factors until 3.2.3.

The tentative illustration provided in Table 3.3 below thus discusses the mapping of resources onto capabilities. For each domain on the list, we ask what the most important resources are, and group these in the last two columns of the table as inputs over which the government can exert control, or which are largely beyond its control.

Table 3.3: Example of a capability input mapping (resources)

Capability	**Capability-inputs under the control of government**	**Capability-inputs beyond the control of government**
1. physical health	Time. Money. Natural environment. Health care.…	Role in society (for example, employment or care). Innate physical health.…
2. mental health	Role in society (for example, employment or care). Health care. Social relations.…	Innate mental health. Education and care within the family. …
3. knowledge and intellectual development	Education and culture. Media. Time. Money.…	Innate intellectual talents. Upbringing. …
4. labour	Time. Labour market policies. Social capital. …	Knowledge and skills. Innate talents. Social class in which one is born. Social network.…
5. care	Time. Money. Public care services.…	Social norms. Size of families and households. …
6. social relations	Time.Money. Social capital.…	Family and social class in which one is born.…

7. recreation	Time. Money. Employment conditions. Sport and cultural policies.…	Population density. …
8. shelter	Housing policies. Traffic infrastructure. Money (wealth). Financial conditions for housing (rental policies, mortgages, …).…	Spatial-geographic limitations. Average size of households.
9. living-environment	Environmental policies. Spatial planning.…	External influences on the environment.…
10. mobility	Time. Traffic infrastructure. Money.…	Population density. Mobility needs of others. …
11. security	Police and legal order. Characteristics of spatial planning. Social capital.…	Social norms. Reporting in the media. …
12. non-discrimination and respect for diversity	Legislation respecting human diversity. Image of minorities as depicted by the government. Education.…	Dominant public morals. Small-scale civil society projects. Social norms. Images created by the media.…
13. political participation	Time. Structure of political organisations. Media. Social capital.…	The constitution and the fundamental legal order of the Netherlands and the European Union.…

This example of a capability input mapping is by no means as precise as is needed for a detailed application of the tool. A more precise mapping requires a separate study of the determinants of each capability, which we cannot provide here. But the example does draw attention to two important issues. First, a well-executed input mapping can take stock of capabilities that can be strongly influenced by the government, versus those that can only be

influenced to a very limited extent (or not at all). This is important when the aim is not only to conceptualise and measure the quality of life, but to develop governmental policies that will improve the quality of life in these domains as well. The input mapping tells us something about how 'malleable' the quality of life within domains is, and which policy instruments might be appropriate. Secondly, the input mapping clarifies how the capability approach and the approach that relies on a broad definition of resources are related. As we mentioned earlier, among the capability inputs are not just resources, but also factors that influence the conversion of resources into capabilities. The government can exert influence on some of these conversion factors, as we will show below.

To illustrate with a hypothetical example, the importance of the resource inputs for supporting capability in a domain is denoted by asterisks. Suppose that after a studying the domain of non-discrimination and respect for diversity we have the following mapping:

Table 3.4: most important inputs for domain 12 (an example)

12. Non-discrimination and respect for diversity	Legislation respecting human diversity** Enforcement of the law, in hiring policies, and in the public communication of government agencies*** Education*	Dominant public morals* Small-scale civil society projects** Social manners. Images created by the media*

In case this would be the correct capability input mapping, items with no asterisk or only one asterisk indicate the areas where government has only limited possibilities to promote that capability, depending on its degree of control. The government can make sure that its legislation is in tune with the constitution, and enforce its laws, but it cannot easily prevent the media from spreading discriminatory content which judges would consider within the provisions of the law and protected under free speech. It can certainly combat discrimination against its own employees, and give good examples by not communicating negative images of minorities through its own agencies, and it can also try to prevent such images from being reinforced within education programs. In addition, the government could try to financially support small-scale civil society projects and not frustrate their emergence by unnecessary bureaucratic hurdles. But whether such projects succeed, will be largely up to the members of civil society itself.

Even the sketchy capability input mapping of Table 3.3 shows that time and money are important resources. This has important consequences for the status of the domain of labour, since performing labour is time-intensive and generates income. Almost all capabilities have money as a necessary resource. For many people labour is the only means to command sufficient amounts of money which can be allocated to different capability domains, in addition to their wealth, and their financial entitlements from the welfare state. But the work

needed to generate this income usually does claim a large share of available time. The domain of labour therefore is pivotal for shaping quality of life, since a person's functioning in this domain is related to important decisions to allocate resources to capabilities in other domains. Those decisions are largely the responsibility of individuals and households. However, a government which wants to advance the quality of life of its citizens will have to carefully consider its labour market policies.

When posing the question to what extent the government can control capability inputs, it is useful to distinguish public provisions from policies that affect the availability of time and money. Public provisions obviously impose costs in time and money through the tax system, but the benefits are targeted on specific domains through a great number of policy instruments. In contrast, policies that aim to affect the available amounts of time and money of citizens – policies related to labour market participation, employment, productivity-improvements and the redistribution of primary and secondary income – are much more general. These policies touch upon all domains in which citizens make trade-offs between time and money, within the options that have been shaped by public provisions. In this study we cannot even begin to discuss all these general policy interventions. By way of example, we focus on the question to what extent the government can redistribute time and money.

As far as money is concerned, the most straightforward instrument is the fiscal regime: through taxes and subsidies the government influences the post-tax income distribution. In addition, the government also influences the pre-tax income distribution, for example by policies which shape the opportunities to generate income. A society which heavily subsidizes education, and in which adult education programs are well developed in particular, will strongly support people to generate a decent income. In various ways government can also provide incentives to firms for hiring workers rather than substituting labour by capital. In some countries the government has a strong influence on the wage level through collective agreements on employment conditions, and in this way it also indirectly affects income distribution between people who derive income primarily from labour and people whose income comes from profits or interest.

Next, the input of disposable time can also be redistributed by the government in a number of direct and indirect ways. An example is the Belgian system of time credits. A time credit allows employees to temporarily interrupt their employment either fulltime or part-time, with a guarantee that one will be able to return to one's employment after the period of leave. The government pays a compensation for forgone income.[16] In addition employees are entitled to so-called 'thematic leaves': paid leave in case one cares for a child under the age of 6, or care leave for family members with illnesses. In the Netherlands, the 'lifecycle policy' has recently been introduced, which also subsidizes the net cost of shifting labour time to unpaid activities of households, even though the subsidy it provided is lower than in the Belgian time credit system. Other countries, especially Scandinavian ones, have even more generous

[16] see http://meta.fgov.be/pc/pce/pcet/nlcet11.htm

systems for employees who are under severe time pressure, generally due to the burden of caring duties at the peak of their working age careers (Gornick and Meyers 2003). Clearly, a detailed evaluation of the impact of such policies on the capability sets of different groups of citizens requires very close analysis. The only point we wish to make is that the existence of these policies demonstrates that governments are perfectly capable of shaping the distribution of time and money between different demographic groups, if reasons for doing so exist. And some of those reasons may be to improve the quality of life.

Nevertheless, governments have only limited means of controlling the allocation of time and money across different capabilities by individuals and households themselves. Policy instruments do influence the allocation between individuals and households, for example those aiming to limit social inequality of capability inputs. But how particular citizens decide to allocate their time, efforts and money among capability domains is not the business of government, at least not on the principle that government should be as neutral as possible between different notions of the good life. However, a government may in some cases decide to interfere in personal allocations in order to safeguard the continuity of individual capabilities, as we discuss in 3.2.4.

In what follows next we build on the capability input mapping. We draw attention to the fact that some capability domains are closely related through the common resources they require. These so-called competing domains are of interest for the question of assessing capabilities through functioning measurements. We also return to the role of conversion factors in the input mapping.

3.2.2 Competing capabilities for limited inputs

As noted, a well-designed capability input mapping provides an overview of the capability-dimensions in the domains of our list that compete for the same resources. ‘Competing capabilities’ thus share inputs which may be invested in producing one or the other capability in different proportions, time and money are the most obvious examples. Resources that are not shared in this way, or only to a limited extent, are more like public goods. For example: the domains of mobility and non-discrimination are not competing. Improved mobility can be achieved without jeopardizing the capability of non-discrimination and respect, since public inputs in these domains are hardly competing at the level of the government budget, and also because legislation which aims to rule out discrimination resembles a pure collective good. In contrast, labour and care are strongly competing capabilities: a parent may work fulltime and decide to care a limited number of hours for her child, or she may work part-time and care part-time, or work little or not at all but invest a lot of time and attention in bringing up the child. Each of us has only 24 hours in a day: it is therefore impossible to maximise all those capabilities of which time is an important input.

The degree to which capabilities are competing is not only influenced by the degree in which its realisation depends on one or more rivalling inputs, but also by the question whether these inputs are ‘strongly or weakly limited’. Time is the most strongly limited capability input: we

can spend our waking time on caring, labour, recreation, moving around, engaging in social contacts, and participating in politics. Each hour spent in performing one activity cannot be spent on another, unless one gives up on the time needed for sleep and personal maintenance. Other capability inputs are less limited: income is of course scarce for most people, but we can to some extent expand our capabilities by working for higher pay, borrowing money or receiving a financial gift. A third group of capability inputs is not limited at all: these are important or necessary inputs for certain capabilities, but their use does not decrease the possibility to realise other capabilities. Emotional intelligence is a capability input for labour, care, social relations (affiliation), and also for some forms of recreation. But applying one's emotional intelligence in paid labour does not imply that less of this intelligence is left for friendships or voluntary work.

Of course many capabilities are competing in various ways to varying extents. But there are few capabilities that do not require time or money for their realisation. Thus some capabilities are clearly *strongly competing*, such as the earlier mentioned example of caring activities, paid labour, and recreational activities. Others are *weakly competing* with capabilities in other domains, such as security (including being safeguarded against sexual and domestic violence and violence on the street). By designing a capability input mapping, we can acquire more information on the degrees to which these domains are competing and thus require allocation decisions for their realization.

3.2.3 Time and time-autonomy

The capability input of disposable time invites analysis of the relation between (1) the selection of capability domains, and (2) the choice of indicators which represent functionings or represent capabilities. First we want to look at the question that was raised in 3.1.3, namely whether time-autonomy should be included as an independent domain. This issue will be seen to relate to another question on our agenda regarding the choice between functionings, capabilities or both, to which we return shortly.

Time-autonomy is a part of the analysis of strongly competing capabilities – opportunities to function that depend to a large extent on the absolutely limited input of disposable time and the strongly limited input of money. It is important to distinguish between strongly and weakly competing capabilities, for the simple reason that strongly competing capabilities are co-realisable only to a limited extent. As we have pointed out, this is the case with capabilities listed among the domains of labour, care, recreational activities and mobility, but also for some other dimensions such as those of social relations and political participation.[17]

[17] Many social relations require 'networking' and long-term maintenance. Political participation in a representative democracy requires, apart from gathering information, rather little time for those who do not want to be a member of a political party, or who are not active in a social movement or activist group. Those citizens only need to go out and vote after they have informed themselves about political issues. But as Max Weber already made clear, *Politik als Beruf* is surely one of the most time-consuming social roles. Robert Dahl has pointed at the fundamental importance of limited time for the organisation of a democratic regime

For example, if someone has no caring duties and has access to independent means of income, then this person can work fulltime, undertake leisure activities fulltime, engage in caring activities (as a volunteer) fulltime, or any combination of those activities. Now when this person is asked in a survey whether she has the possibility to work fulltime, she will respond “yes”; if we ask her whether she could be engaged in leisure activities if she would like so, she would again say “yes”; and so on. But it is clear that she cannot do everything at the same time, and that her financial budget also poses limits.

As a consequence, with strongly competing capabilities it becomes necessary to investigate the entire set of these capabilities in assessing quality of life, and not to evaluate the opportunities in each of the domains separately, since this would give us a misleading idea of the person’s real opportunities as a whole. The extent to which a person has available opportunities to function in strongly competing domains at any given point in time therefore depends on the way this person allocates her time among the functionings she wishes to achieve in each of them. If we want to gain an insight in the overall opportunities in the set of strongly competing domains, then we should in fact consider it as one large domain. Just as a person can choose to achieve one particular way of functioning in one domain while foregoing other functionings in that same domain (say recreating by performing a sport rather than playing music) a person can also choose to expand certain functionings in one domain at the expense of opportunities in another – strongly competing – domain.

This line of inquiry suggests that strongly competing capabilities could be measured simply by assessing the available common inputs. One may be tempted to think that knowing how much money and time a person has at her disposal is enough to determine what her opportunities are over strongly competing domains. However, if we work within a capability framework, we should not just measure inputs. In the capability approach, these are inputs of carefully selected capabilities, and not inputs for just any kind of ‘good life’. But there is yet another reason why the resources of time and money should not be seen as decisive for the quality of someone’s life in strongly competing domains, even if these inputs give us a good impression of the maximal opportunities of the individual to function. That reason is the freedom to allocate time and money usually is limited to a grater or lesser extent - and the limitations of this freedom are especially salient in the case of time.

This brings us to the argument advanced in Robeyns (2003) to include the autonomy that a person has to allocate her disposable time as an abstract capability. The idea is that the freedom to allocate time according to one’s own insights is both an intrinsically valuable part of the quality of life – to be a person of ‘independent means’ traditionally denotes the capability of being able to spend one’s time as one pleases - as well as being instrumentally valuable. The instrumental value of this freedom is that one can realise one’s own notion of the good by allocating one’s time to those activities that one actually deems worth pursuing, and to be able to take time off for rest or simply for doing nothing at all. Both aspects of the

(Dahl, 2000: 105-114) and for the inequalities in political power and influence which emerge as the consequence of differences in political participation (Dahl, 2006: chapter 5)..

freedom to control one's own time are part of the good life of citizens in a democratic society. But even though civil and political rights formally support time-autonomy, the necessity to earn a living within the institutions of the existing economic system imposes a number of binding constraints, and thus limits the temporal autonomy of most of us in practice. Time as a resource becomes more valuable the less the use of that time is subjected to constraints. This could be a reason to include time as an abstract capability in a list designed for assessing quality of life. Following Goodin (2001), Van der Veen and Groot (2006) have tried to measure to what extent different types of welfare states promote the time-autonomy of its citizens. Their research shows that the Netherlands in the 1990s performs well in this area, and there are indications that this is still the case. Similar research has been undertaken by Burgoon and Baxandall (2005).

However, we do not want to include time-autonomy as a domain since we think that the capability domains on our list should include areas of social life that are easily recognisable to citizens, and which can be directly influenced by the policy instruments. Moreover, there is another way to take account of the undeniable importance of time-autonomy, which highlights its instrumental value. Earlier we mentioned that there are two types of capability inputs: resources on the one hand, and conversion factors which facilitate or hamper the transformation of resources into capabilities. One could conceptualise time-autonomy as an institutional (and partly social) conversion factor, in particular a factor which facilitates the individual allocation of resources over strongly competing capability domains.

An example may clarify, and also illustrate the role that the government has to play here. The Netherlands was one of the first countries where part-time workers enjoy the same rights as full time workers *pro rato*. From an international perspective this is surely not a self-evident arrangement: for in the USA a number of important social rights (in particular health care insurance) are only offered to full time workers – and even not to all of them. Those who prefer to work 20 rather than 40 hours a week will then pay a high price in terms of the risk coverage they are giving up. The same may be the case for work-related benefits, such as pension-savings. Thus, in the Netherlands public policies regarding part-time work have improved the time autonomy of citizens. Other provisions, such as care-leaves or parental leaves, or the employee rights to flexibility in choosing working hours, are elements influencing people's time-autonomy.

One way to do justice to the importance of time-autonomy is by including it in a capability input mapping as a conversion factor. This would in any case allow us to take into account the instrumental factors of time-autonomy when designing public policies regarding the quality of life. Yet again there will be limits to what a government can do in this respect. In 2.3.3 we noted that the degree to which a person in fact has opportunities of freely choosing among a range of functionings is not only constrained by institutional factors, but also by interactions within households. Parents generally decide together how to divide the caring responsibilities for their children, and adult children jointly decide who will care for their dependent parents. Thus at the micro-level, the willingness and preferences of other members of the household have a direct influence on the capabilities of an individual person. Again the

degree of time-autonomy plays a crucial role, since it can tell us something about the person's entire capability-set, rather than only about the maximum achievable scores on each of the capabilities taken separately. To get more information, detailed time budget studies are needed (cfr. Gershuny 2000). But government has little control over (legally acceptable) behavioural patterns that influence the division of time within the household.

3.2.4 Opportunities or effective functioning?

In 2.3.3 we discussed the reasons why one might want to measure capabilities, achieved functionings, or a combination of both. At the most general level, capabilities are probably preferred, since they do not impose a specific notion of the good life, and allow us to take into account personal responsibility for how one uses one's capabilities. On the other hand, we do not only value our opportunities to function, but also what we actually 'are and do', by making choices among those opportunities. The question whether in applied capability research we should focus on capabilities or functionings should be decided for each application separately. For each application different theoretical arguments may be relevant. Also each application has its own pragmatic considerations - such as acceptable simplifications in view of collectible data, policy relevance, empirical constraints, reducing the costs of research, and so forth.

We want to analyse this important question somewhat further here. In 2.3.3 it was noted that for some capabilities, the realised functioning level can be taken to indicate the maximum level of the capability (Robeyns, 2003). This is the case for functionings where it makes sense to assume that everyone would try to realise them as extensively as possible. Another consideration in favour of measuring functionings rather than capabilities is related to personal responsibility, for we have seen that part of the liberal argument for preferring capabilities in a policy-relevant life quality assessment was that people can be held responsible for how they choose to utilize their 'fair shares' of capabilities. However, judgements on whether or not someone carries responsibility for his own behaviour may require too much empirical information. Alternatively, it may be decided from a normative point of view that the responsibility issue should play no role in assessing someone's well-being in a certain area. Health may be an example where both of these considerations are relevant: virtually everyone wants to be healthy. Yet not everyone acts to preserve their health. It is often hard to know in the case of an illness or impairment to what extent this is caused by behaviour for which one can be held responsible for bad health, morally or legally. And in any case, medical ethics militates against making the allocation of health care too sensitive to responsible behaviour: even the notoriously irresponsible are entitled to at least some treatment on the principle of need. Thus, if the capabilities for which these reasons hold are not strongly competing ones, then it may be that collecting information regarding the levels of individual functioning is sufficient for assessing their quality of life.

Another independent argument in favour of functionings can be constructed for strongly competing capabilities. As already mentioned in 2.3.3, the basic idea is that if someone is

able to allocate scarce inputs between different domains according to his own views – which requires a large degree of time-autonomy – then one may assume he will choose to allocate these inputs optimally, in line with his preferences. As a consequence, in domains where he prefers to reach a high level of functioning, he will invest to enlarge the corresponding capability up to that level at the expense of capabilities in other domains, in which his preferred level of functioning is lower. This idea of optimising provides an argument for taking the vector of realised functionings as a measure of the person's entire *capability set* of competing domains, unless there are clear indications that his time-autonomy is strongly constrained, so that he is not in fact able to optimise. In the latter case it may become necessary to investigate to what extent people allocate their time differently from what they would prefer. One could do this by making use of existing research regarding time allocation. One could then decide to apply a correction, to discount the degree of time-autonomy in the scores of the realised functionings in strongly competing domains.

Yet a third consideration for measuring levels of functionings however argues in part against the idea that *ceteris paribus* people are better off if they have more time-autonomy. This consideration builds on the fact that some capabilities are not only dependent on resources, but also on *previously realised capabilities* in the same domain, or in other domains. In the mapping of Table 3.2 we did not include these causal relations, in order to keep the table simple, but they should not be overlooked. For example, as noted before, it is almost impossible to function on the Dutch labour market without possessing a minimum level of education. In our society there is almost no work one can do if one does not know how to read, write, and make basic calculations: even domestic cleaners need to be able to read the information on cleaning products, or to be able to read the notes left by their employers on the kitchen table. Similarly, to function well as a citizen one needs a number of basic skills, such as being able to communicate with governmental agencies, health care providers, or teachers. Therefore one may decide to include a minimum level of functioning for the dimension of schooling in the domain of knowledge and intellectual development, since reaching such level is crucial for capabilities in several domains and its lack strongly constraints people's opportunities.

A similar argument can of course be made for the domain of labour. Labour as a capability is generally threatened if one does not use one's capability of performing paid work regularly. Someone who chooses not to participate on the labour market for a long time will lose earning power, and face reduced chances for meaningful and well-paid work in the future, just as much as someone who is non-active due to involuntary unemployment. This may be a reason why in a survey, one should not only focus on the options that someone has to perform paid work of different kinds and remunerations, but also whether the person has effectively held a job for a certain period (for example in the last 5 years).

So there may be good reasons why a metric of the quality of life should include the measurement of minimum levels of activities that are deemed essential, in addition to measures of capabilities. It is important to note, though, that this proposal is to some extent based on a paternalistic consideration which goes against the importance of time-autonomy.

But a certain degree of paternalism in assessing life quality within the domains of education and labour may be acceptable, if it is clear that these minimum levels of functioning are truly indispensable for maintaining one's capabilities in the near future. If it is decided to include such minimum levels in the index of the quality of life, then this reflects that the quality of life of a person should meet some minimum conditions of *personal sustainability* at each point in time.[18]

3.2.5 Towards a capability-index

We have introduced a range of conceptual tools which may be of help when operationalizing the diverse capability-domains in each of the 13 domains. The underlying thought was that a good operationalization takes into account the different relations between different domains, using the capability input mapping. Once this is done, it will be easier to justify the various choices that are needed for a further operationalization of capabilities in specific domains, and in particular to judge in which cases it is advisable to measure functioning levels rather than engaging in the difficult job of assessing entire sets of opportunities. But is it possible to be somewhat more specific about what a capability index of life quality of life would look like? Starting from our selection of capabilities as presented in 3.1, and accepting the arguments presented above in 3.2.4, we may decide to choose indicators for the 13 domains as follows:

Security and *non-discrimination and respect for diversity* can be measured at the level of functionings, since we do not see any good reasons why people would choose to function below the maximum attainable level.

Mental and physical health are more difficult, since there may be a political debate regarding to what extent the government wants to hold people responsible for their health, or for certain aspects of their health. If the government believes that this responsibility cannot be left to individuals, for example due to the large influence of innate factors that one does not control, or due to a strong correlation of health achievement with social class, then these are reasons to measure these domains as realised functionings, and not as capabilities.

Knowledge and intellectual development should be measured as a combination of functionings at a minimum level (certainly for education), and as capabilities for the higher levels. As discussed, the same may be decided for the domain of labour.

[18] This view is analytically distinct from the view that sustainability demands *at the level of the entire society* should enter into the metric of quality of life, a view that we have rejected in Chapter 1.4. If one claims, for example, that an increase in labour market participation in the Netherlands is an essential condition for the sustainability of the health care system in the next 25 years, then a certain average level of labour market participation can be regarded as being part of the sustainability goal listed under cell (1) in Table 2.1. However, we would not want to claim that a society that does not meet this condition *at present* would, for this reason, have a lower quality of life. But it is possible to argue consistently with this last position - that the life quality of a given individual will in fact be lowered when he or she does not achieve a certain minimum level of functioning in the domain of labour, when it can be shown that this deficit diminishes his or her capability to function in other domains after only a short time lag.

Shelter, living-environment, and *mobility* can be analysed as weakly competing capabilities. However, one should take into account willingness to pay the tax costs of public resources that support those capabilities in order to judge how important they are to people. In the next section we say more about this.

Social relations, labour, care and *recreational activities* are strongly competing on the input of time and therefore need to be analysed as a 'competing capability-set'. For the measurement of individual levels of this capability set the vector of realised functionings in those domains is a decent approximation. Note, however, that we have argued that corrections may need to be made for individuals whose time-autonomy is significantly constrained. The design of such correction factors has to take into account the discrepancies between the time one would like to spend in a particular domain, and the time effectively spent in that domain.

For the domain of *political participation*, formal rights of participation are non-competing capabilities, and these are equal for all citizens (but not fully shared by residents). But the time-intensive capability dimensions of participating in political organisations are different from these formal rights. They should be added to the competing capability set.

We stress, once again, that this is only a sketch of how one could proceed in operationalizing the capability approach to quality of life. A more complete proposal for operationalizing capabilities demands much more detailed research on the separate domains, after an in-depth study of the relevant input mappings. Our sketch gives only a first guide in case it would be decided to further develop the capability approach up to the level of a complete set of indicators. The analysis of 3.1 and 3.2 illustrated that a full development of a capability-based index of life quality is a large project indeed. We hope that this analysis has illuminated the steps that are needed for a responsible and justifiable selection and operationalization of capability domains. In the following section we present some suggestions that may be useful for the weighting of the indicators, and for assessing the relative weight of capability-domains in an index.

3.3 Weighting problems in aggregating capability scores

3.3.1 The issue of aggregation

The need for an aggregate capability-index of life quality only arises when it is desirable to catch the quality of life of an individual, a group, or the entire population in one single summary figure. As mentioned in the Introduction (1.1) and in 1.3, having such a summary index may indeed be desirable. It contributes to the political saliency of the (inherently multidimensional) capability approach, because it enables comparison with established indices that seek to measure life quality either by the direct route of overall happiness and life satisfaction, or in indirectly, in terms of resources such as BNP per capita, or the Human

Development Index of the UNDP. The issue of how to weight individual scores, or some group statistic of such scores, across the different capabilities which contribute to life quality thus needs to be clarified. That issue also presents itself when a government is interested in trading off attainable levels of life quality across dimensions or domains in a framework of public policy. From a democratic point of view, it must then assess how people actually value different aspects of their life quality. A different viewpoint for determining the relative weight in 'overall life quality' of specific capabilities, or domains of capabilities, assesses the extent to which achieving a high standard of life quality in various areas may interfere with sustainability constraints of the kind that were discussed in 1.2. In the next chapter we come back to both of these points of interest, in the context of the research undertaken in the *Sustainability Outlook*.

Any aggregation towards a summary measure inevitably involves loss of information. In the present approach this is especially the case, since any given capability is measured by possibly more than one single indicator, and several capabilities may be included in one of the selected domains. Thus there are several levels of aggregation to be considered before an overall index of life quality can be constructed. In this chapter we only provide a rough outline of key issues that arise along the way.

3.3.2 From indicators to dimensions, from dimensions to domains

In principle a capability-domain, such as mobility, is comprised of several dimensions. In the SCP Living Conditions Index for example, private transport by cars and public transport are two such dimensions. Dimensions are distinguished on theoretical grounds – for instance the degree of available freedom for an individual differs across the above two dimensions – but also on policy-related grounds. Public transport and car traffic each require different public inputs, and the choice to promote a combination of these two can have economic and distributive effects which government may wish to take into account.

Once it is known which theoretical dimensions of life quality are to be included in a domain, and why they need to be distinguished from one another (this will also depend on how ambitious one wants to be in measuring quality of life) each of these dimensions needs to be operationalized by selecting the proper indicators. Often the theoretical concept underlying a given capability-dimension will be captured by several indicators, which then need to be summarized in some way informed by statistical data theory. For example, based on the correlations between different indicators, techniques of data-reduction such as factor analysis can be used. In this phase one may need explorative research on a number of indicators that are present in several datasets to construct acceptable measures for quality of life on each dimension in a given domain. One then might find that previous theoretical decisions (such as were discussed in 3.2.4) to operationalize capabilities either in terms of opportunity-sets or in terms of achieved functionings will have to be adapted or reconsidered.

In general the issue of weighting indicators to obtain a measure of a capability-dimension can be treated as an empirical task of (statistical) data-construction. This should be distinguished

from the further question of how several dimensions are to be aggregated into a summary index for a domain of capabilities.

In 3.1.3 we noted that the LCI-index actually uses statistical data-reduction to construct entire domains of 'living conditions'. But we doubt that it is a sensible idea to require that a domain of capability-dimensions should be reducible to one single latent dimension at a higher level, since there is no obvious reason why the scores on those dimensions should closely hang together. For example one might want to include the dimension of being able to move freely without bodily pain, alongside the dimension of respiratory capacity in the domain of physical health, but there is no reason why we should require a strong correlation between scores on these dimensions as a condition for placing them in that domain, as the LCI-method does require.

How to arrive at a useful domain-index, then, will depend on specific conceptual, normative and also policy-oriented requirements. This applies even more to the next level of aggregation, when one is working towards a single unifying figure that expresses the quality of life in a sub-group of the thirteen domains distinguished in 3.1, or ultimately in all of them. In the remainder of this section we shall concentrate on this highest level of aggregation, but some of the issues to be discussed surely also present themselves at the level of domains.

3.3.3 Equal weighting of domains in a reference-index

The pragmatic starting point of index-construction is straightforward: give all variables that need to be weighted an *equal* weight, and only deviate from this default if good reasons to do so exist. The equally weighted index then serves as the reference-index. It is the standard for comparing any indices in which variables receive unequal weights for whatever reasons. This requires clarification of what constitutes 'an equal weight' in the first place. In the context of a capability-based quality of life index, at least two problems need to be addressed here.

The first problem is technical and will only be briefly mentioned. When numerical measures have been constructed for the scores of each capability-dimension, those measures have to be normalised before index-weights can be allocated. But often there are several different procedures of normalisation. The choice to select one such procedure from a range of alternatives may implicitly entail a choice for a certain weighting of the information based on the non-normalised scores on some dimensions, given that it is understood that the normalised scores will receive equal weight. For a discussion of this problem in the construction of the Commitment to Development Index of the *Center for Global Development*, see Roodman (2006: 5-6).

The second problem is easier to understand but nevertheless difficult to deal with: should one weight each *domain* equally, or alternatively, should all *capability-dimensions* receive an equal weight, independently of the domain to which they belong? These two options are identical only when each domain contains an equal number of dimensions, which is unlikely to be the case. One could of course stipulate in advance that this *should* be the case, but there

hardly seem to be good substantive reasons for imposing such a rigid condition. There are two theoretical views here. The first of these holds that quality of life is constituted by the capability-scores on a set of selected dimensions, each of which captures intrinsically valuable aspects, that would be easily recognized by most people as contributing to the quality of their lives. In this case, the groupings of dimensions that we call ‘domains’ are merely pragmatic tools for demarcating the different areas in which quality of life is assumed to be constituted by the selected capabilities. In the reference-index, domains should then receive weights in proportion to the number of dimensions they include.

The second view regards domains rather than dimensions as the primary units of the reference-index. One then assumes that overall quality of life is based upon a prior theory about people’s options to function in different areas of life, each of which has an independent constitutive meaning, whereas making distinctions between different capability-dimensions within one and the same domain has a less principled meaning. This approach thus holds that the identification of domains in making up a list of capabilities for the quality of life is decisive, either for reasons of theory or for policy-related reasons. One will then of course want to assign equal weights at the level of domains, not dimensions. It follows that average weights of dimensions in more (less) numerous domains will get scaled down (up).

We have not seen any explicit discussions of this aspect of the weighting problem in the literature. Our own method for the selection of capability-domains in 3.1 implicitly started from the primacy of the domains, but this was only because it is in line with the available literature, which generally focuses on domains. But from 3.1.2 it can be seen that the demarcation of domains is not that clear-cut. For example, take physical and mental health. In each of these domains one will have to distinguish different dimensions, depending on how ambitious the research design is. We suggested that the physical and mental aspects of health need to be separated in a policy-relevant index, referring to arguments advanced by Layard to the effect that the importance of mental illness is seriously underrated in health policy. Alternatively, however, one might decide on theoretical grounds that health should be regarded as one single domain, possibly including a lot of different capability-dimensions. In the first case, obviously, the dimensions of physical and mental health will receive larger weights in the reference-index relative to other capability-dimensions than in the second case.

In general then, the problem of how to understand ‘equal weights’ poses a challenge to find a good balance between the levels of detail of the capabilities that are to be included in the index. The condition imposing the number of dimensions per domain is an artificial way to guarantee such a balance and therefore not justifiable. Nevertheless, it serves as a reference point that a well-balanced index needs to keep in mind.

3.3.4 Reasons for unequal weights: democracy and sustainability

In the Introduction (1.1) we already mentioned two different viewpoints for allocating unequal weights to capability domains. One is to decide ‘democratically’ on the relative weights of domains, using information about people’s preferences, while the other tries to

determine deviations from equal weights from the point of view of sustainability, for example by looking at the environmental pressures caused by upholding a given level of 'life quality' in each domain. We now discuss these two reasons for deviating from the reference-index, assuming throughout that the reference index is based upon a 'balanced' way of partitioning capability-dimensions into domains. It will be seen that it is by no means easy to work out a systematic weighting scheme for capabilities from either of these two normative viewpoints.

The idea of 'democratic weighting' poses the social choice problem of how to aggregate information on the relative weights attached by individuals to different capability-domains. Such information is hard to come by, and below we shall very briefly discuss a few of the issues that have to be faced in empirical research. But supposing that this information is available, we think that the most defensible principle from a democratic point of view is not to use 'majority rule'. It is based rather on a more abstract notion of democratic equality: to let each adult individual count for one in the determination of relative domain weights, assuming the 'virtual representation' of children by parents. Chakraborty (1996) argues convincingly that the democratic relative weighting factor for a capability should then be calculated as the mean of individual weights, and we extend this to capability-domains here. The main reason for using such weighting factors rather than the equal weights of the reference-index is 'democratic' in the following sense: government policy seeking to allocate scarce resources among policies designed to promote quality of life in various domains should take those weights into account, especially if the variance of the averaged weights is small and the averages turn out to differ considerably across domains.

If democratic weights do indeed strongly deviate from equality, one way of arguing that an overall index of life quality be sensitive to such deviations consists in saying that the (democratically aggregated) *subjective evaluations* of how various domains are in fact ranked in importance by people must enter into the construction of a capability-index. The capability-approach then is forced to accept the idea that subjective evaluations play a part in determining the aggregate 'amount' of measured life quality for the population a as whole, not unlike the utilitarian approach. We do not think that this is a disturbing implication, once the averaging principle is accepted. If it is, then the task of constructing an overall index based upon democratic weighting will require the design of good survey questions from which individual rankings of capability-domains can be derived. It may be wise to start such a design by using qualitative findings obtained from deliberative focus group data, in which the selection of domains is also discussed beforehand, in line with the methodology outlined in section 3.1.

A related but distinct way of arguing for democratic weighting can be found within the resource approach to quality of life, in which subjective evaluations of different resources pose a central problem as well. Here the idea is that one should try to ascertain how individuals rank resources such as income, wealth holdings, free time and access to public amenities of various kinds. For even though such 'strategic resources' figure as all-purpose means for pursuing an individual plan of life, different life-plans require different bundles of such resources, hence subjective evaluations inevitably enter once the aggregation question

arises. In 3.3.1 we have seen how capabilities and functionings are related to resource inputs (Table 3.3), and we later suggested that when capability-domains compete for the same resources, the subjective importance assigned to such competing domains may to some extent be revealed by the time and money people want to invest in them, on the optimising choice model. This idea can be extended to the public goods that figure in the capability-input mapping, by asking people in a survey how much they would be willing to pay (in increased tax) for additional units of, say, health care, public transport or education. Evidence of this kind provides a different way of assessing individual domain-weightings and can be used alongside subjective ranking questions that do not include considerations of willingness to forego resources in one capability-domain in order to be able to spend them in another domain.

From these remarks it will be clear that arriving at a trustworthy set of democratic domain-weights for the purpose of an overall index is quite difficult. Thus there may be pragmatic reasons for dispensing with the task. Two such reasons were already mentioned above. Even a well-constructed average 'democratic weight' of a domain may not represent the distribution of individual weights in the population very well, due to large variance, or it might not deviate much from the equal weight in the reference index. In these cases it may be better to be less ambitious and concentrate on the (already considerable) problems involved in constructing proper 'equal weights' for the reference-index. Even so, however, there may be other reasons not to drop the project of measuring subjective rankings of capabilities. For as will be explained in Chapter 4 below, it can be highly useful for policy analyses undertaken in the context of the *Sustainability Outlook* to gather information on the *actual variety of views* among groups in the Dutch population on desired life quality in different domains. In that context, the problem of averaging over these views is obviously less relevant. It would thus seem possible to use equal domain weights for index purposes, while at the same time gathering information on the subjective valuation of capabilities for the purposes of identifying group differences.

Thus for example, the SCP Living Conditions Index uses equal domain weights, even though its authors surely are interested in subjective evaluations of separate domains (such as health, transport, recreation and housing conditions). The SCP does remark, however, that such "…subjective preferences need not coincide with what government deems desirable from the point of view of the collective interest" (Roes, 2005: 14). A democratically legitimated government in principle has a mandate for determining what policies are in the 'common interest'. But often it will seek guidance for articulating the common interest in widely shared normative principles. One salient principle which may recommend deviations from subjective weighting factors is the wish to avoid suboptimal social outcomes, when there is evidence that collective action problems exist with respect to the underlying allocation of resources. As is well-known from happiness research, income-intensive activities may turn out to be overvalued compared to time-intensive ones, to the detriment of attainable well-being. According to Layard (2005, Ch.4) this is explained by two facts related to interdependencies of individual choices: earned income is a positional good, in contrast to free time, and increases in income are subject to habituation effects more strongly than free time is. This

produces a social dilemma. In seeking to remove the dilemma, government operates on the assumption that correcting for the bias in favour of income-intensive activities is conducive to overall life quality. In Layard's utilitarian framework, for example, overall life satisfaction could be increased by optimally taxing income from work, in such a way that people are induced to substitute income for free time. In the capability approach, it is less easy to determine the optimal intervention, but the same social dilemma would have to be addressed in a similar, though more indirect way. This means that government policy will then not endorse subjective weighting factors, to the extent that these weights are derived from individual preferences in favour of relatively income-intensive capabilities and against time-intensive ones.

Similar indirect reasons for deviating from democratic - or even from equal - weights are given by constraints of sustainability. Such constraints are always linked to the availability of resources, and thus indirectly to capabilities, by way of the capability-input mapping. Thus if it is easier to satisfy the moral demands of sustainability (discussed in 1.3) by promoting time-intensive capabilities in the society rather than capabilities which require high inputs of income and expensive public outlays, then in principle this creates a basis for a 'socially optimal' weighting of capability-domains by the government (and of capability-dimensions within domains) on the normative grounds of sustainability. In the next chapter we will see that the knowledge and information problems of such a weighting scheme are daunting, and may held to be insurmountable as a basis for policies of sustainable development. Working out a generally authoritative scheme of this kind could thus be ruled out in practice, due to the uncertainties and the controversial nature of some of the assumptions underlying the construction of 'sustainability weights'.

In conclusion, the issue of weighting the capabilities in different domains of social life involves two stages: the construction of a balanced scheme of equal weights, and working out reasoned departures from this standard of reference from different normative points of view on such as democratic equality, avoiding suboptimalities due to interdependencies, and respecting constraints of sustainability. In theory this looks fine enough, but as our discussion indicates, any serious attempt to carry out this second stage requires a lot of empirical work which will inevitably be based upon contestable theoretical assumptions. In order to assess whether this work should be undertaken in a research project of constructing an overall index of life quality, it would be prudent to carefully investigate in advance to what extent the equally-weighted reference index is sensitive to changes in domain-weights, for a given dataset. This can be done by correlating the reference-index with several indices constructed from unequal weights (see Roodman, 2006: 8-9 for a discussion of this exploration procedure).

4 Dealing with plurality in sustainability policies

4.1 Charting plurality: the method of action perspectives

An important starting point of the methodology used in the *Sustainability Outlook* is that it is wise not to try and answer the large question 'how well the Netherlands is doing with respect to sustainability' on the basis of a *uniform* set of norms and principles which are assumed to be binding for society as a whole, and on a purely scientific analysis of the restrictions on resources that such norms and principles would place on the pursuit of well-being. The *Sustainability Outlook* rather favours a bottom-up approach, by starting to asking what people actually think about these issues. It therefore focuses on the various ways in which the existing *plurality of moral values and empirical beliefs* among different groups in the Dutch population works its way into the diversity of their views on both sustainability and life quality. In short, the idea behind this research effort of MNP is that one can identify different *world views* which are shared by sections of the public, each of which has its own implications for trends in sustainable development, and each of which also poses its own risks in case the world view in question would become politically dominant. Policy advice based on a scenario analysis of these trends is held to be useful. In this section we want to comment on the policy logic of the MNP research programme. In the next and final section we offer tentative suggestions for developing the world view method of charting plurality with respect to issues of sustainability and life quality within the framework of the capability approach set out in the previous chapters.

We start out by examining the logic behind the *emphasis on plurality* by discussing a pathbreaking report of the Netherlands Scientific Council for Government Policy (WRR), originally published in 1994 and entitled *Sustained Risks: A Lasting Phenomenon* (WRR, 1995). This report expresses fundamental doubts about the feasibility of translating normative demands of sustainability - for example safeguarding a certain level of need-satisfaction for the coming generation - into objective ecological and economic requirements, which should then be taken as the basis for polices of sustainable development. The Council especially questions the ruling approach adopted by the Dutch environmental policy plans, according to which the administrative and instrumental aspects of environmental policy can be straightforwardly based upon a scientifically ascertainable *carrying capacity* of the environment, a carrying capacity which is to be preserved for the future in the interest of sustainable development. To achieve this goal, environmental policy should formulate general constraints, from which quantitative behavioural targets are then derived for a range of actors in different policy sectors. It is indeed true that the architecture of Dutch environmental policy plans is based on this general idea, and even has included the Dutch consumers among the actors which should obey environmental targets, by approaching

consumers in their role as responsible citizens through a range of social policy instruments including information campaigns and moral persuasion (see Pellikaan and Van der Veen, 2002, Ch, 2).

However, the Council's report is driven by criticism of this grand and centralistic policy scheme. The authors are convinced that the state of knowledge of environmental developments, and of the impact of human actions on these, is radically inadequate for objectively determining an environmental 'carrying capacity' of the society, and deriving from it a set of necessary behavioural changes for sustainable development. (WRR, 1995: 18). More fundamentally, the Council notes that the knowledge which would required for operating the policy sequence "carrying capacity/constraints/behaviour" is not merely insufficiently available, but also that the knowledge actually at hand is riddled with untested factual assumptions and normative presuppositions, for example concerning the extent of future technological change and the acceptability of risk-estimates of environmental harms. In addition, quite different views exist on the feasibility of obtaining behavioural changes in society for sustainable development, as well as different opinions about the social costs of such changes. All these views and opinions are clearly contestable, and they are often hidden away in the scientific analysis of environmental problems used by policy-makers.

Thus according to the Council, it must be conceded that policy knowledge for sustainable development is not only uncertain, but that its very status is socially contested, because this kind of knowledge is inextricably bound together with diverging values and conceptual constructions which can at most command an intersubjective basis of assent between groups, but cannot be claimed to be objectively valid. However, the Council goes on to note that both in scientific circles and policy communities, as well as in society at large, it is possible to discern systematically different patterns of values and beliefs, each of which represents a distinct 'action perspective' on sustainable development, and on the need for behavioural adjustments to be brought about by policy efforts.

The report actually follows up this basic methodology of policy analysis by presenting four stylised action perspectives, each of which represents distinct responses to the problem of tying economic activity to environmental desiderata. On the side of production, two options are distinguished: *p1* 'adaptation of production methods' versus *p2* 'change in the nature of production methods', whereas on the side of consumption, the two options refer to preferences for a 'high' (*c1*) or 'low' (*c2*) level of consumption. This produces a two-by-two scheme of action perspectives respectively labelled *Utilizing* (*p1c1*), *Managing* (*p2c1*), *Saving* (*p1c2*) and *Preserving* (*p2c2*) (WRR, 1995: 44, Table 2.1).

Each of these perspectives is regarded as the result of a more or less tightly reasoned and empirically supported narrative with its own implications for policy. The method of policy analysis consists in juxtaposing different action perspectives and comparing their implications over time with the aid of scenario techniques, both for government policy as a whole, and separately for important policy sectors such as energy, water management and world food supply. It is expected that this novel method will both generate systematic and reciprocal learning effects across adherents of different perspectives, and will also enable the

identification of common policy options, which are based upon more inclusive factual information. Compared to traditional methods, the recommendations issuing from this kind of policy analysis will be conditional on action perspectives rather than authoritative of what the 'scientific community' thinks, but the Council does not regard this to be a disadvantage, for the principled reasons discussed above.

In this new approach to policies of sustainability, then, plurality of values and beliefs in society assumes a central place. In the more recent research efforts of MNP within the programme of the *Sustainability Outlook*, this is the case as well, and even more markedly so, as can be explained by noting three differences with respect to the Council's 1994 report. First of all, the MNP's exploration of trends in the scenario format is based upon a more broadly conceived notion of sustainable development, which does not limit itself to confronting economic production and consumption with environmental necessities, but rather seeks to bring the wider set of sustainability concerns discussed in Chapter 1 to bear upon the goal of 'maintaining the quality of life'. In contrast to the Council's purely conceptual scheme, secondly, the MNP attempts to distinguish different action perspectives on the basis of empirical research. Thirdly and finally, the construction of these action perspectives on sustainable development is elaborated in two consecutive empirical stages as follows.

First, existing plurality among the Dutch population, as conceptualised within two related typologies of *value orientations* and *world views*, has been examined in several rounds of public opinion surveys, from which the world view typology emerges as the most salient one. The scheme underlying that typology consists in grouping different clusters of value and belief attitudes along two conceptual axes. The horizontal axis captures orientations of respondents on a 'distributive' dimension representing the opposition between solidarity and economic efficiency, whereas the vertical axis collects scores on a dimension representing the extent of 'international interlinkages', ranging from a regional (local or national) orientation to a global orientation on the world as a whole. Combination of the two axes generates a fourfold typology of action perspectives - the world views - which are respectively called *Global Market*, *Global Solidarity*, *Safe Region* and *Caring Region*. The empirical validation of this survey instrument is the first stage of the MNP method.

The second stage is to derive more specific action perspectives on sustainability, in connection with views on desired life quality. This is done with the aid of another survey instrument, which is made up of questions concerning the relative importance people attach to a large number of social problems on an inventory list. That list covers environmental problems, for example the ozone layer, the greenhouse effect, energy utilisation and depletion of national resources, which easily fit into the Council's more traditional four-way typology discussed above. But the inventory is far more inclusive, for it also deals with economic issues such as pensions, government debt, unemployment and the tax burden, cultural problems such as influx of foreign immigrants, as well as questions relating to the large global issues of poverty, hunger and human rights. Respondents are asked to rank the items on the inventory list in order of urgency, where the more 'urgent' social problems are defined as the ones judged to be of more pressing concern now and in the future.

This second survey instrument exemplifies the interdependency view on the relationship between life quality and sustainability that we discussed in section 1.4 under the catch phrase of *sustainability in life quality*. For in its report reflecting on the methodological background of the *Sustainability Outlook*, the MNP notes that in these measurements, 'quality of life' is implicitly being approached as the extent to which people think that there is progress in dealing with the social problems that they deem most important (MNP, 2006: 24). But at the same time, the rankings of those social problems also implicitly reflect the particular views of persons on sustainable development, both at home and elsewhere. We return to this point in the next section.

To round off our brief exposition of the MNP method, the two stages of empirical inquiry into the plurality of values and beliefs are finally connected, by statistically correlating respondent rankings of social problems with scores on the two dimensions of the world view typology. Thus systematic differences between ranking patterns of respondents are explained by the particular world views they turn out to hold (see the table in *Sustainability Outlook*, MNP-RIVM, 2005: 12).

To sum up, following the lead of the 1994 report by the Netherlands Scientific Council on Government Policy, the MNP has developed a distinct and sophisticated way of charting the plurality of views on sustainability issues among the Dutch population, with the aim of bringing this information to bear on policy analysis which is informed by scenario methods.

4.2 Sustainable life quality and world views: an alternative suggestion

As will be recalled from section 1.4, we argued for the position that it is advisable to regard sustainability as a set of objectives and constraints on the pursuit of life quality in a national society, but not to incorporate demands of sustainability in the metric of life quality itself. After the concept of life quality was elaborated more concretely in terms of the capability approach in chapters 2 and 3, this position implies a more specific understanding of the notion of *sustainable life quality*, for it then follows that that various demands of sustainability set normative conditions on the extent to which a national government can attempt to advance the capabilities of its citizens to function in several domains of social life.

In itself, this position is compatible with the basic idea of policy analysis discussed in the last section, according to which it is necessary to gain an empirical understanding of the plurality of values and beliefs which forms the background for a diversity of specific views regarding life quality and sustainability. It is also compatible with the first stage of the research design underlying the *Sustainability Outlook*, which captures this plurality by means of the stylised action perspectives exemplified by the world view typology. But at the same time, our position to keep sustainability outside of the metric of life quality is at variance with the second stage of the MNP research design, which attempts to capture different views among

the population regarding the relative importance of both domestic and global 'social problems' on an inventory list. For in that survey instrument, as we have seen, the concepts of quality of life and sustainability are implicitly bound together in a way that does not allow them to be clearly distinguished.

For example, a respondent who ranks domestic unemployment at the top of the inventory list, above human rights and global poverty, might indirectly be expressing a view on the good life as well as a view on competing claims of justice. The first view could be interpreted to hold that a good quality of life in the Netherlands depends on (or may even be constituted by) regular access to paid work, while the second view could be construed as saying that this element of quality should be properly secured for the present generation at home, before policy efforts are undertaken to secure human rights (even to economic opportunities) and adequate nourishment of people elsewhere in the world, either currently or in the more distant future.[19] To what extent these two views are held separately, however, is difficult to tell. And to what extent the second view would be motivated by empirical beliefs regarding the possibilities of securing access to work through international transfers or market mechanisms is also hard to tell. In the method of the *Sustainability Outlook*, in any case, such a ranking answer must be interpreted as one holistic response to the general issue of *sustainability in life quality*. But this is perhaps less informative for purposes of policy analysis than a method which separates judgements on life quality from judgements concerning international and intergenerational norms of distribution more clearly.

The question we now wish to address is whether it is possible to reshape the second stage of the research design of the *Sustainability Outlook* along such lines. We can only offer some suggestions here. In short, the proposal would be to design three distinct sets of questions.

Starting first with life quality, respondents are asked to identify the capability-domains of social life which they regard most important, and the extent to which they can command the connected resource inputs for realizing these capabilities. Secondly, responses to desiderata of sustainability are to be gathered, in which respondents are asked to choose from among normative *menus* containing alternative views on domestic, international and intergenerational sustainability issues. And thirdly, the same respondents are to be questioned about their views on the possible consequences of their chosen positions on the various issues of sustainability for pursuing the elements of life quality they favour in Dutch society, including some specific questions about the type of government policies they would hold to be desirable and viable.

If these three sets of questions are designed carefully, then it must be possible to detect systematic patterns in the overall responses, which may be compared to the scores of these respondents on the dimensions of the world view typology. The exciting question will be

[19] As can be seen from the Table on p. 12 of the English summary of the *Sustainability Outlook*, this particular response to ranking social problems is predicted by respondents' positions on the efficiency side of the horizontal axis, irrespective of their position on the axis of international interlinkages. For the table shows that unemployment gets significantly ranked at the top of the inventory list in the *Global Market* and *Safe Region* world views, but not in the *Global Solidartity* and *Caring Region* world views.

whether scores on world views are good predictors of these systematic patterns. If so, then this would show that the action perspectives captured by the world view typology are useful for summarizing a wealth of specific information on diverging views with respect to both desired life quality and sustainability, separately conceived. This could form an alternative basis for extracting conditional policy recommendations from scenario extrapolations of the world views, and be of use in searching for risk-minimizing policy programs that combine common elements across different scenarios, in the general way envisaged by the *Sustainability Outlook*.

To illustrate the possible value of this alternative suggestion briefly, we sketch some points of departure for designing each of the three sets of questions, and connecting the responses with the world view data. For the modelling of questions concerning views on the quality of life, it is important to keep in mind that the capability approach recognizes variety among individuals with respect to the subjective valuation of capabilities, both across domains and within given domains. Earlier, we examined the possibility of attaching 'democratic' domain-weights for the purpose of constructing a summary index measure of life quality in 3.2.3. We there mentioned two different ways of measuring subjective valuations, one of which is simply to let respondents rank domains in order of importance, while the other is to ask to what extent they are willing to invest the resources of time and money in different (strongly competing) domains. In this more indirect 'revealed preference' method, it is also useful to have information on people's willingness to pay for the crucial inputs of public provision that support capabilities in different domains, as shown by a capability input-mapping.

For the design of questions aiming to catch variety in normative desiderata of sustainability, we once again refer to the typology of requirements contained in our national definition of sustainability and set out in the four rubrics in the cells of Table 2.1. We claimed that it is extremely important not to lose sight of the fact that sustainability - in the sense of viably maintaining a good quality of life for the present generation within national boundaries - is an overarching goal for the government, which should be clearly distinguished from the international and intergenerational constraints that refer to the interests of people elsewhere and/or later. In 1.3, additionally, we suggested that a policy-relevant elaboration of sustainability requirements would profit from a systematic overview of the actual commitments undertaken by successive governments to promote sustainability objectives, because such commitments can in principle be regarded as being democratically legitimated. This is also of relevance here, for it is obviously useful for policy purposes to use the items in such an overview as a basis of comparison for in measuring normative differences in opinion among the population, rather than asking people to respond to more vaguely worded choices between the economy and the environment, or between the well-being of our own children thirty years later and the fate of children in poor countries at this moment. It is also good to be aware of the fact that in order to respond to actual sustainability commitments in force within their society, people first need to be *informed* about what these commitments are, in fact.

The third set of questions on beliefs concerning the consequences of sustainability objectives for life quality should also be reasonably concrete. It may be a good idea to take the lead from the action perspectives proposed in *Sustained Risks: a Lasting Phenomenon* which we discussed above. For one may assume, as a starting point at least, that what is required by sustainable development at home and abroad will largely be perceived by the public as bearing on long-run policy choices with respect to production methods and consumption levels.

From this short sketch, finally, one can derive a methodological point concerning the connection between patterns of responses on life quality and sustainability on the one hand and patterns of responses on world views on the other. If the typology of world views (and the typology of value orientations that is related to it) is to serve as a good basis for policy analysis in the format of scenario studies of different sectors, as described by the *Sustainability Outlook*, then that typology should actually prove its usefulness by its ability to predict significant differences among the population with respect to relevant aspects of life quality and relevant convictions and beliefs about sustainability. In this section, we have tried to outline how to set up a survey for researching these two basic concerns among the population in conformity with the position that life quality and sustainability are conceptually distinct. In the design of proper survey questions, however, the aim of collating the responses with scores on world views also requires that care is taken not to frame these new questions in ways that ensure a statistical association in advance.

References

Alkire, S. (2002) Valuing Freedoms: Sen's Capability Approach and Poverty Reduction. Oxford University Press, New York.

Anand, P. (2005) QALYs and capabilities: a comment on Cookson. Health Economics 14, 1283-1286.

Anand, P., Hunter, G. and Smith, R. (2005) Capabilities and well-being: evidence based on the Sen-Nussbaum approach to welfare. Social Indicators Research 74, 9-55.

Anand, P., Hunter, G., Carter, I., Dowding, K., Guala, F. and van Hees, M. (2005) The Development of Capability Indicators and Their Relation to Life Satisfaction. The Open University, Milton Keynes, mimeo.

Basu, K. (1987) Achievements, capabilities and the concept of well-being. Social Choice and Welfare 4, 69-76.

Basu, K. and López-Calva, L. (forthcoming) Functionings and capabilities. In: Handbook of Social Choice and Welfare, Volume 2 (eds K.J. Arrow, A.K. Sen and K. Suzumura). North-Holland/ Elsevier Science, Amsterdam.

Biggeri, M., Libanora, R., Mariani, S. and Menchini, L. (2006) Children conceptualising their capabilities: results of a survey conducted during the first children's world congress on child labour. Journal of Human Development 7, 59-83.

Boelhouwer, J. (2002a) Quality of life and living conditions in the Netherlands, Social Indicators Research 58, 115-140.

Boelhouwer, J. (2002b) Social indicators and living conditions in the Netherlands, Social Indicators Research 60, 89-113.

Boelhouwer, J. (2005a) De leefsituatie. In: De Sociale Staat van Nederland 2005. SCP, Den Haag, pp. 296-237.

Boelhouwer, J. (2005b) Bijlage 12.1: Veranderingen in het onderzoek tussen 2002 en 2004. In: De Sociale Staat van Nederland 2005, Bijlagen. SCP, Den Haag, http://www.socialestaat.nl/2005/ 12/1/index.html.

Boelhouwer, J. (2005c) Bijlage 12.13: Geluk door de jaren heen en samenhang met indicatoren van de leefsituatie. In: De Sociale Staat van Nederland 2005, Bijlagen. SCP, Den Haag, http://www. socialestaat.nl/2005/12/13/index.html.

Boelhouwer, J. and Stoop, I. (1998) Measuring well-being in the Netherlands. Social Indicators Research 48, 51-75.

Bundesministerium für Gesundheit und Soziale Sicherung (2005) Lebenslagen in Deutschland: Der Zweite Armuts- und Reichtumsbericht. Bundesanzeiger, Berlin.

Burchardt, T. (2005a) Happiness and social policy: barking up the right tree in the wrong neck of the woods. Paper presented at the Priority in Practice workshop, University College London, 7 April 2005.

Burchardt, T. (2005b) Are one man's rags another man's riches? Identifying adaptive preferences using panel data. Social Indicators Research 74, 57-102.

Burgoon, B. and Baxandall, P. (2005) Three worlds of working time: the partisan and welfare origins of working time in OECD countries. Politics and Society 32, 439-473.

Chakraborty, A. (1996) On the possibility of a weighting system for functionings. Indian Economic Review 31(2), 241-250.

Clark, A. and Oswald, A. (1996) Satisfaction and comparison income. Journal of Public Economics 61, 359-381.

Cohen, G. (1993) Equality of what? On welfare, resources and capabilities. In The Quality of Life (eds M. Nussbaum and A. Sen). Oxford University Press, Oxford.

Cookson, R. (2005a) QALYs and the capability approach. Health Economics 14, 817-829.

Cookson, R. (2005b) QALYs and capabilities: a response to Anand. Health Economics 14, 1287-1289.

Cummins, R., Eckersley, R., Pallant, J., Van Vught, J. and Misajon, R. (2003) Developing a national index of subjective wellbeing: the Australian unity wellbeing index. Social Indicators Research 64, 159-190.

Dahl, R. (2000) On Democracy. Yale University Press, New Haven.

Dahl, R. (2006) On Political Equality. Yale University Press, New Haven.

Diener, E. (1984) Subjective well-being. Psychological Bulletin 95, 542-575.

Diener, E. and Seligman, M. (2004) Beyond money: towards an economy of well-being. Psychological Science in the Public Interest 5(1), 1-31.

Dworkin, R. (2000) Sovereign Virtue: The Theory and Practice of Equality. Harvard University Press, Cambridge, Mass.

Esping-Andersen, G. *et al.* (2002) Why We Need a New Welfare State. Oxford University Press, Oxford.

Frey, B. and Stutzer, A. (2002) What can economists learn from happiness research? Journal of Economic Literature 40(2), 402-435.

Frey, B. and Stutzer, A. (2005) Beyond outcomes: measuring procedural utility. Oxford Economic Papers 57, 90-111.

Fleurbaey, M. (2002) Development, capabilities, and freedom. Studies in Comparative International Development 37, 71-77.

Fleurbaey, M. (2006) Capabilities, functionings and refined functionings. Journal of Human Development 7, 299-310.

Gershuny, J. (2000) Changing Time: Work and Leisure in Post-Industrial Society. Oxford University Press, Oxford.

Goodin, R.E. (2001) Work and welfare: towards a post-productivist welfare regime. British Journal of Political Science 31, 13-39.

Gornick, J.C. and Meyers, M.K. (2003) Families that Work. Russell Sage Foundation, New York.

Grewal, I., Lewis, J., Flynn, T.N., Brown, J., Bond, J. and Coast, J. (2006) Developing attributes for a generic quality of life measure for older people: preferences or capabilities? Social Sciences and Medicine 62, 1891-1901.

Griffin, J. (1998) Happiness. In: Routledge Encyclopedia of Philosophy, version 1.0 (ed E. Craig). Routledge, London and New York.

Griffith, T. (2005) Progressive taxation and happiness. Lecture for the Colloquium on Tax Policy and Public Finance, UCLA School of Law, 14 April 2005

Hagerty, M., Cummins, R., Ferriss, A., Lan, K., Michalos, A., Peterson, M., Sharpe, A., Sirgy, J. and Vogel, J. (2001) Quality of life indexes for national policy: review and agenda for research. Social Indicators Research 55, 1-96.

Hirsch, F. (1976) Social Limits to Growth. Routledge and Kegan Paul, London and Henley.

Jackson, T., Marks, N., Ralls, J. and Stymne, S. (1997) Sustainable Economic Welfare in the UK. Center for Environmental Strategy, University of Surrey.

Kahneman, D., Krueger, A.B., Shkade, D.A., Schwarz, N. and Stone, A.A. (2004) A survey method for characterzing daily life experience: the day reconstruction method. Science 306(5702), 1776-1780.

Kahneman, D. and Krueger, A.B. (2006) Developments in the measurement of subjective well-being. Journal of Economic Perspectives 20, 3-24.

Kuklys, W. and Robeyns, I. (2005) Sen's capability approach to welfare economics. In: Amartya Sen's Capability Approach: Theoretical Insights and Empirical Applications (ed Wiebke Kuklys). Springer verlag, Berlin, pp. 9-30.

Layard, R. (2005) Happiness: Lessons from a New Science. Penguin, London.

Menon, N. (2002) Universalism without foundations? Economy and Society 31(1), 132-169.

MNP-RIVM (2004) Kwaliteit en toekomst: verkenning van duurzaamheid. Milieu- en Natuurplanbureau (MNP) - RIVM, Bilthoven.

MNP-RIVM (2005) Quality and the Future: Sustainability Outlook. English Summary. Netherlands Environmental Assessment Agency (MNP) – RIVM, Bilthoven.

MNP (2006) Methoderapport Duurzaamheidsverkenning, Rapport 550031001/2006 (ed A.C. Petersen). Bilthoven: Milieu- en Natuurplanbureau, Bilthoven.

Neumayer, E. (1999) The ISEW – not an index of sustainable economic welfare. Social Indicators Research 48, 77-101.

Nickerson, C., Schwarz, N., Diener, E. and Kahneman, D. (2003) Zeroing in on the dark side of the American Dream: a closer look at the negative consequences of the goal of financial success. Psychological Science 14, 531-536.

Noll, H.-H. (2002) Towards a European system of social indicators: theoretical framework and system architecture. Social Indicators Research 58, 47-87.

Nussbaum, M. (1995) Human capabilities, female human beings. In: Women, Culture and Development: A Study of Human Capabilities (eds M. Nussbaum and J. Glover). Clarendon Press, Oxford, pp. 61-104.

Nussbaum, M. (2000) Women and Human Development: The Capabilities Approach, Cambridge University Press, Cambridge.

Nussbaum, M. (2003) Capabilities as fundamental entitlements: Sen and social justice. Feminist Economics 9(2/3), 33-59.

Nussbaum, M. (2006) Frontiers of Justice: Disability, Nationality, Species Membership. Harvard University Press, Cambridge, Mass.

Pellikaan, H. and van der Veen, R. (2002) Environmental Dilemmas and Policy Design. Cambridge University Press, Cambridge.

Phipps, S. (2002) The well-being of young Canadian children in international perspective: a functionings approach. Review of Income and Wealth 48, 493-515.

Pogge, T. (2002) World Poverty and Human Rights. Polity Press, Cambridge.

Rawls, J. (1999) A Theory of Justice (Revised Edition). Oxford University Press, Oxford.

Robeyns, I. (2003) Sen's capability approach and gender inequality: selecting relevant capabilities. Feminist Economics 9(2/3), 61-92.

Robeyns, I. (2005a) The capability approach: a theoretical survey. Journal of Human Development 6(1), 93-114.

Robeyns, I. (2005b) Selecting capabilities for quality of life measurement. Social Indicators Research 74, 191-215.

Robeyns, I. (2006a) Measuring gender inequality in functionings and capabilities: findings from the British Household Panel Survey. In: Gender Disparity: Manifestations, Causes and Implications (eds P. Bharati and M. Pal). Anmol Publishers, Delhi, pp. 236-277.

Robeyns, I. (2006b) The capability approach in practice. Journal of Political Philosophy 17(3), 351-376.

Roes, T. (2005) Opzet en verantwoording. In: De Sociale Staat van Nederland 2005. SCP, Den Haag, pp. 11-16.

Roodman, D. (2006) Building and Running an Effective Policy Index: Lessons from the Commitment to Development Index. Center for Global Development Essay, http://www.cgdev.org/content/publications/detail/6661.

Schokkaert, E. and Van Ootegem, L. (1990) Sen's concept of the living standard applied to the Belgian unemployed. Recherches Economiques de Louvain 56, 429-450.

SCP (1998) Sociale en Culturele Verkenningen 1998. SCP, Den Haag.

SCP (2005) De Sociale Staat van Nederland 2005. SCP, Den Haag.

Sen, A. (1980) Equality of What? In: The Tanner Lectures on Human Values (ed S. McMurrin). University of Utah, Salt Lake City.

Sen, A. (1987) The standard of living. In: The Standard of Living (ed G. Hawthorn). Cambridge University Press, Cambridge.

Sen, A. (1993) Capability and well-being. In: The Quality of Life (eds M. Nussbaum and A. Sen). Clarendon Press, Oxford, pp. 30-53.

Sen, A. (2001) Reply. Economics and Philosophy 17, 51-66.

Sen, A. (2004a) Why we should preserve the spotted owl. London Review of Books 26(3), http://www.lrb.co.uk/v26/n03/sen_01_.html.

Sen, A. (2004b) Capabilities, lists, and public reason: continuing the conversation. Feminist Economics 10(3), 77-80.

Sen, A. (2005) The economics of happiness and capability. Harvard University, Cambridge, Mass., mimeo.

Stewart, F. (1995) Basic needs, capabilities, and human development. Greek Economic Review 17, 83-96.

UNDP (2005) Human Development Report 2005: International Cooperation at a Crossroads. United Nations Development Programme, New York.

Van der Veen, R. and Groot, L. (2006) Post-productivism and welfare states: a comparative analysis. British Journal of Political Science 36, 593-618.

Van Praag, B. and Ferrer-i-Carbonell, A. (2004) Happiness Quantified: A Satisfaction Calculus Approach. Oxford University Press, Oxford.

Veenhoven, R. (1996) Happy life expectancy: a comprehensive measure of quality of life in nations. Social Indicators Research 39, 1-58.

Veenhoven, R. (2000) Leefbaarheid: betekenis en meetmethoden. Study commissioned by the Ministerie van WVZ.

Veenhoven, R. (2002a) Het grootste geluk voor het grootste aantal: geluk als een richtsnoer voor beleid. Inaugural address Erasmus University Rotterdam, 31 May 2002.

Veenhoven, R. (2002b) Why social policy needs subjective indicators. Social Indicators Research 58, 33-45.

Wittebrood, K. and Nieuwbeerta, P. (2006) Een kwart eeuw stijging in geregisteerde criminaliteit: vooral meer registratie, nauwelijks meer crininaliteit. Tijdschrift voor Criminologie 48, 227-242.

Wolff, J. and De-Shalit, A. (2007) Disadvantage. Oxford University Press, Oxford.

WRR (1995) Sustained Risks: A Lasting Phenomenon. Report to the Government no. 44. Netherlands Scientific Council for Government Policy, The Hague.