IT'S NOT WINNING THAT COUNTS, ITS THE TAKING PART: SHOULD WE BE ASSESSING CAPABILITY RATHER THAN ACHIEVEMENT?

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ABSTRACT

Economic evaluation is focused almost soley on the achievement of health *outcomes*. Cost-effectiveness analysis, cost-utlity analysis and even cost-benefit analysis treat the objective to be the achievement of a goal. This may be a reduction in blood pressure, a gain in QALYs or the use value from consumption of a pharmaceutical. However, with the increase in chronic disease, issues of lifestyle and an increasingly older population, is this approach too narrow?

Amartya Sen's theory of 'capability' aims to expand the evaluative space from the very narrow utility space of mainstream economics, which is concerned with the pleasure obtained from the consumption of goods and services. Instead Sen advocates the evaluation of programmes in terms of the extent to which they are able to enhance *capability*, defined as the ability to function in relation to particular desirable attributes (or, simply, the ability to achieve a goal). Whether or not this capability is acted upon is a separate issue (that is, whether the person chooses to actually achieve the goal is not of concern). With more and more health care being the joint responsibility of the health care profession and the individual, it is arguable that the role of the health sector should be to enhance capability (the ability to achieve), and the individual be left to decide for themselve if they will act upon this and thus achieve the possible outcome.

Sen's notion of capability was first introduced to health economics by Tony Culyer in his exposition of extra-welfarism. More recently the theory has been the basis both of attempts to evaluate capabilities using panel data and the development of an index of capability (ICECAP) for the evaluation of health and social care interventions.

The authors are all currently involved in the application of this concept in the evaluation of health care. This paper thus outlines these current uses of Sen's capability theory within health economics and discusses a number of other potential uses. The paper is deliberately written as a 'think piece' in order to generate discussion of these issues among the wider HESG community.

INTRODUCTION

The strong and clear recommendation from the National Institute for Health and Clinical Excellence (NICE) for its reference case is that the QALY (quality-adjusted life-year) should be used as the unit of benefit assessment for submissions to its panels (National Institute for Clinical Excellence, 2004). As a result, the importance of the QALY as a measure for economic evaluation has been considerably enhanced in recent years, as both those working on academic appraisals for NICE and those in pharmaceutical companies submitting their products for approval have been obliged to use this measure where at all feasible (National Institute for Clinical Excellence, 2004).

These recommendations, however, belie the lack of there real consensus among health economists about the best way in which to measure the benefits of health care interventions. Traditionally, although there has been some concensus on needing a proxy measure of expected utility, there has been a split (on theoretical as well as methodological grounds) between those wishing to use monetary outcomes (Donaldson, 1990) and those choosing to use QALYs developed from a generic measure(Williams, 1991). More recently, however, researchers have sought to directly measure experienced utility (Kahneman, 2000; Dolan & White, 2006), develop disease specific instruments from which QALYs can be obtained (Brazier, Murray, Roberts, Brown, Symonds & Kelleher, 2005), develop the capability approach (Anand & van Hees, 2006; Grewal, Lewis, Flynn, Brown, Bond & Coast, 2006), and there has even been some return to avoiding the involvement of the research team in weighting elements of benefit with advocation of the use of cost consequences or a so-called "balance sheet" approach (Coast, 2004).

This paper explores one of these new options – the development of capabilities – in more depth. The paper continues in the next section by describing briefly the theoretical underpinnings of the capabilities approach. It then explores the arguments for and against using the capabilities

approach in health care, before describing how the approach ***has*** been, and ***is*** being, used in health care to date. The final section of the paper draws on both theory and practice in providing discussion on the extent to which capabilities can be seen as a promising approach for the future, and also provides the beginnings of a research agenda if this approach is to be taken forward.

WHAT ARE CAPABILITIES?

The notion of capabilities derives from Amartya Sen's seminal work on functioning and capability (Sen, 1993; Sen, 1982a; Sen, 1992). Sen's work moves away from welfare economics, which uses utility as the basis for evaluating programmes or interventions. Instead Sen advocates the evaluation of programmes on the basis of functionings and, ideally, capabilities. Sen distinguishes four different aspects of the relationship between a good (for example a bike) and an individual: a 'good' is the item (the bike); 'utility' is the pleasure or benefit derived from that item (pleasure from having the bike); 'characteristics' are qualities of goods (transport); and 'functioning' relates to the individual's use of the good (moving) (Sen, 1982a). Sen suggests that functionings may include basic functions such as 'moving, being well-nourished, being in good health, being social respected.' (Sen, 1982a), p.30) Although functionings are important, however, it is 'capability', the extent to which a person is ***able*** to function in a particular way, whether or not he or she chooses to do so (Sen, 1993), that is the particularly novel and interesting part of Sen's theory and the basis upon which Sen recommends evaluation.

Sen sees four potentially relevant sources of evaluation, distinguished on two axes. The first distinguishes between an individuals 'well-being' and their 'agency goals' (where 'agency

goals' may include goals other than one's own well-being). The second distinction is between 'achievement' and 'freedom to achieve' – in other words between functioning and capability. Together these provide four categories that are potentially relevant to evaluation: 'well-being achievement'; 'agency achievement'; 'well-being freedom'; and 'agency freedom' (Sen, 1993) (pp.35-36). An example that Sen uses to illustrate the distinction between well-being achievement and well-being freedom is the comparison between the person who is starving because of lack of food, and the person for whom food is freely available, but who chooses to fast: in policy evaluation terms these would clearly need to be considered differently and whereas both persons here are similar in terms of well-being achievement, in terms of well-being freedom they are quite different (Sen, 1993). The focus of this paper is mainly on the distinction between functioning and capability rather than that between well-being and agency.

Sen's theory of functionings and capabilities does not prescribe any particular functionings and capabilities, with Sen preferring to indicate that different capabilities are likely to be important in different contexts (Robeyns, 2003). This lack of prescription of a list of capabilities has, however, been seen as a limitation by others working in the capabilities field (Nussbaum, 2003; Richardson & McKie, 2005; Sugden, 1993), and indeed Nussbaum has generated a list of ten 'Central Human Capabilities' that she argues for as being a list that can be a focus for both "comparative quality of life measurement and for the formulation of basic political principles of the sort that can play a role in fundamental constitutional guarantees" (Nussbaum, 2003) (p.40). Nevertheless, other general lists have also been developed(Robeyns, 2003), and there is clearly room for the generation of lists for specific purposes within Sen's general framework

THE ARGUMENT FOR USING CAPABILITIES IN HEALTH CARE

Robeyns describes the capability approach as being "a broad normative framework for the evaluation and assessment of individual well-being and social arrangements, the design of policies, and proposals about societal change."(Robeyns, 2006)(p.352) The central argument for using capabilities in health care is that the basic normative framework that is provided by the capabilities approach is more appropriate for the evaluation of health care programmes and interventions than other approaches. Sen's particular concern has been to advocate the capabilities approach as an alternative to welfare economics – as Sen states "It differs from the standard utility-based approaches in not insisting that we must value only happiness (and sees, instead, the state of being happy as one among several objects of value)…" (Sen, 1993) (p.48)

The capabilities approach is clearly a non-welfarist approach to evaluation and indeed, Culyer used this theory in developing his extra-welfarist perspective (which provides one of two justifications for the use of QALYs in evaluating health care[1]). Extra-welfarism was developed by Culyer building upon Sen's notions of functioning and capabilities (Sen, 1992; Sen, 1993; Sen, 1982b). Extra-welfarism is defined as transcending traditional welfare by supplementing these welfares with other "non-goods characteristics" of individuals such as health state, freedom of choice and even the quality of relationships between individuals (Culyer, 1989; Culyer, 1990). For extra-welfarists, non-utility information about individuals is allowed to affect comparisons of different social states although, according to Culyer, only some information about characteristics will be deemed relevant (Culyer, 1990). In relation to health care, the characteristic deemed by Culyer as relevant as the principal output of health services is

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[1] The other justification is the so-called "decision-maker approach" in which the QALY is supposed to be justified on the basis of decision-makers objectives in relation to health care (Coast, 2004).

health (Culyer, 1989), and thus information about health status is allowed to directly influence which social state is preferred. This contrasts with welfarism, where health is taken into account only insofar as it enables utility to be derived from the consumption of health care. Culyer explains the different concepts of utility associated with the two perspectives:

> *Under Paretianism, for example, the notion of welfare relates to goods and services and is the utility of the individual affected by their consumption. Under extra-welfarism, while this notion of utility may still apply, there is the further idea that uses utility theory in order to derive measures of characteristics of individuals that are not goods, not services, nor necessarily having a value content that corresponds to the Paretian notion that 'the individual is the best judge of his/her own welfare'. Confusingly, however, these too are called 'utility' measures. (Culyer, 1989) (p.52)*

Under the extra-welfarist approach the individual's own judgements about their utility may not be paramount. Instead, in the example of health care, it is necessary to decide whose weights should be applied to different health states (Culyer, 1989; Culyer, 1990) and then to use these to optimise resources by equalising marginal health output per unit of cost across different activities (Culyer, 1989). This argument for the use of QALYs as a measure of health outcome is therefore fundamentally linked to Sen's work. It is, however, a limited use of Sen's work on at least three counts.

First, Culyer's expression of extra-welfarism is limited in that it focuses only on health, where the capabilities approach is deliberately broad, advocating the use of multiple aspects of capability. Indeed the major criticism of the expression of the extra-welfarist approach in practice has been that it relies purely on health as an outcome (Birch & Donaldson, 2003). This makes extra-welfarism very different from other suggestions for implementation of the capabilities approach which are all multi-dimensional. Nussbaum's list, for example, contains both Life and Bodily health within its list of 10 'central human capabilities' (also including Bodily integrity; Senses, imagination and thought; Emotions; Practical reason; Affiliation;

Other species; Play; and Control over one's environment). Even the Human Development Index which has only three items includes life expectancy alongside national income and literacy. The use of health alone could, therefore, at best be seen as a partial expression of the capabilities approach.

Second, the expression of extra-welfarism seems largely to be concerned with functionings. Culyer talks, for example, about health states (Culyer, 1989), rather than people's ability to function or their capabilities (although it has been argued by Cookson that, in practice, the EQ-5D as a QALY measure incorporates some elements of capability (Cookson, 2005b; Cookson, 2005a)).

Third, the use of extra-welfarism, whilst altering the maximand for economic evaluation from money to health, clearly retains many features of welfarism that Sen breaks with. Within extra-welfarism, the notion of maximising the total benefit gained is retained, whereas Sen's work on capability is much more concerned with issues of equity and poverty reduction.

The question is, therefore, to what extent the capabilities approach can – or perhaps more importantly should – be used in evaluating health care interventions. One clear argument for extending the use of the capabilities approach in health care is the need to evaluate interventions that result in measures that go beyond health outcome. Some of the clearest examples here are the sorts of public health interventions that NICE is now being called upon to evaluate. Such interventions may impact on broader aspects of quality of life, such as the ability to form or maintain friendships, feel safe or retain dignity and self-respect, rather than health per se (Kelly, McDaid, Ludbrook & Powell, 2005), in large part because their benefits may cross outside of the health sector. For example, an intervention to reduce unwanted pregnancies may lead to improved educational opportunities and thus impact on an individual's quality of life through routes other than health (Swann, Bowe, McCormick & Kosmin, 2003). Similarly, an intervention to reduce alcohol consumption may impact on quality of life through changes in criminal behaviour not just health (Waller, Naidoo & Thom, 2002). The use of QALYs to

assess benefits is likely to underestimate the impact of such interventions and thus, potentially, disadvantage them unfairly in decisions about funding. This is becoming especially relevant with moves towards greater integration between health and social care and more general initiatives towards 'joined up government' and cross-sectoral evaluation. Economic evaluation for public health interventions may therefore require measures that go beyond health whilst still being amenable for use within economic evaluation.

This argument, however, suggests that benefits should be broader than health, but not necessarily that they should be conceptualised as either functionings or capabilities. The question as to whether or not to focus on capabilities must be answered by resting on one of two sets of reasoning: theoretical/philosophical; or empirical. Either the theoretical/philosophical arguments for using the capabilities approach rather than, say, the welfarist or extra-welfarist approaches must be compelling or we must have empirical evidence that the people affected by interventions that are being evaluated are concerned about capability.

Taking the first possibility, for many outside of health, particularly in the area of development, these arguments clearly are compelling, with a groundswell of opinion moving in favour of measuring poverty, for example, in terms of capabilities rather than, for example, national income. This groundswell is clearly evidenced by the development of the "Human Development and Capability Association" with its associated journal and strong membership (see http://www.capabilityapproach.com).

The second possibility is that there is empirical evidence that people are concerned about capabilities. This was the case for work conducted by Grewal et al (2006), which found that older people in the UK appeared to be concerned about their (lack of) ability to meet particular functionings. This was qualitative work using in-depth interviewing to talk to informants about what was important to them in their daily lives: there was no distinction in the questioning between functioning and capability. In this work, the ability to function was a major theme that emerged from the findings, and that became particularly clear when informants talked about the

negative influences upon their quality of life. When discussing these influences, informants talked about issues such as their inability to achieve enjoyment because of poor health or their inability to feel secure because of worries about their partner's health (Grewal et al., 2006). In this work, loss of capability was clearly important to informants because it stopped them achieving important functions in their lives (Grewal et al., 2006). There is, then, some evidence that, at least in some contexts, capabilities seem to be important to the people whose care is being evaluated.

Of course, the choice about whether or not to use a capabilities framework is ultimately a normative one. It is, however, a choice that some health economists are already starting to make.

THE USE OF CAPABILITIES IN HEALTH (ECONOMICS) TO DATE

This section will not focus on the use of extra-welfarism in health economics, on the grounds that it is too narrow and that its major concern is functioning rather than capability. Instead this section will focus on work using the broader capabilities approach within a health context, particularly work that is intended to inform health economics and economic evaluation. Three pieces of work being undertaken by the authors will be outlined here, each of which seeks to inform future evaluations of (public) health interventions. However, there is other work in this area which has a greater focus on the application of the approach to other areas within health (and) economics. Zaidi and Burchardt (Zaidi & Burchardt, 2005) and Wiebke Kuklys (Kuklys, 2005), have estimated the additional income needed by a disabled person to reach the same level of well-being as a non-disabled person. Anand has undertaken considerable research in the

area, and has sought to operationalise the approach by exploiting data from the British Household Panel Survey and estimating the relationship between well-being and capabilities (Anand, Hunter & Smith, 2005; Anand, 2005).

Developing an index of capability (Coast et al)

The work cited in the previous section, by Grewal et al (2006) was the starting point for the development of an index of capability. This work was initially concerned with developing comprehensive but mutually exclusive attributes for an index of quality of life for use with older people in measuring the impact of health and social care interventions. The focus of the work was changed towards the development of an index of capability following in-depth qualitative work that suggested that capabilities were the focus of older people's concerns. This measure contains five capabilities: attachment, role, enjoyment, security and control. These have now been reworded in lay terminology (Coast, Flynn, Grewal, Natarajan, Lewis & Sproston, 2006) and values for an index have been elicited from a sample of 300 older people using using best-worst scaling (Flynn, Louviere, Peters & Coast, 2006); analysis is ongoing but preliminary results have been obtained which show that attachment provides the greatest impact on values, and security least impact, with role, enjoyment and control having similar impact. Substantial challenges remain, however, not least the possibility of using deliberative processes to adjust values (deliberative processes rather than preference elicitation are strongly recommended within the capability literature), and the issue of whether to, and if so how, anchor the index so that it could potentially be used in a similar manner to QALYs.

Assessing the impact on capability from chronic pain (Smith et al)

This work is the topic of Philip Kinghorn's PhD, which is supervised by the author together with Angela Robinson, with input from panel including a clinical psychologist and doctor who both specialise in chronic pain management. The initial concern was to evaluate a new therapy for treating people with chronic pain (which, distinct from acute pain, serves no useful purpose in warning of imminent harm to the person's body and last for more than six consecutive months). However, in preparing the protocol for this evaluation it became apparent that chronic pain has a fundamental impact on the person's ability to achieve many aspects of what we would consider 'normal' life.

There was thus some anxiety in using the QALY as a measure of benefit for the evaluation. For example, a lot of those in chronic pain can walk a specific distance, but this will be in pain, they may not be anxious or depressed as they have adapted and integrated coping mechanisms, and may maintain aspects of usual activites in the sense of a reduced set. In this sense, they may only score less than 1 on the EQ-5D on the pain dimension and the instrument may not be sensitive enough to determine differences due to new interventions. It was therefore decided that a far broader measure, and especially one that captures ability rather than achievement, of goals (as many measures more specific to pain measurement focus on milestones that individuals may not have sought to achieve without pain, such as walking a specific distance), was more appropriate.

No such measures existed, and it was thus decided to evaluate the feasibility and desirablity of a capability-based approach. This work began in January 2006, and to date the qualitative element has been completed which attempts to establish the specific capabilities of relevance to this population. At the time of writing this data has not been analysed and thus this list not identified, although hopefully by HESG there will be some preliminary information that may be shared. Work planned for 2007 involves quantitative assessment where substantial challenges

arise – not least the concern that attaching numerical weights may lead to 'reinventing' the QALY! Discussion of this element would be very welcome at HESG!

Developing an instrument for evaluating public health interventions (Lorgelly et al)

This project was conceived as a result of the involvement by the project team (Paula Lorgelly, Liz Fenwick and Andy Briggs) in the evaluation of a number of complex public health interventions (e.g. housing and neighbourhood regeneration programmes); interventions which do not readily lend themselves to the application of established economic evaluation techniques because their outcomes are complex and varied. The capabilities approach appears to have the potential to provide a framework within which to undertake such evaluations.

The project takes a different approach to that outlined above, as rather than determining which capabilities are important and then measuring these, we are using a predesigned questionnaire. Furthermore, unlike the other two approaches, we are not dealing with specific patient/client groups, and are instead assessing the capability of the general public. The questionnaire we are employing was developed by Anand et al., in response to an earlier attempt at measuring capabilities (Anand & van Hees, 2006). There are 65 capability indicators/questions, all of which are nested within Nussbaum's list of ten capabilities. However, the large number of questions limits its usefulness as an evaluation tool; for this reason, this projects seeks to reduce and refine the questionnaire, and validate it for use in public health evaluations.

The project began in November 2006 and is funded for 18 months. There are three phases: phase one will use focus groups to inform the design and layout of the questionnaire, as well as to elicit information on the public's understanding of capabilities and wellbeing. Recruitment for these should begin in late December. The result of the focus groups will be used to revise (and possibly reduce) the questionnaire and the revised version will be piloted via semi-

structured interviews with the general public. Phase two will use factor analysis to reduce the questionnaire further, and the reduced questionnaire will be subjected to further interviews and a postal survey. The results from this second stage will be used to test the reliability and validating of the instrument. The third and final phase of the project seeks to generate an index of capability.

Ingrid Robeyns notes, in a valuable drawing together of the empirical research on the use of the capability approach more generally, that “As far as the choice between functionings and capabilities is concerned, all applications have focused on functionings rather than capabilities.” (Robeyns, 2006) (p.359) A recent publication by Anand and van Hees (Anand & van Hees, 2006), however, does focus more clearly on the assessment of capabilities, as do the pieces of research outlined above.

This does suggest, however, that in applying the capabilities approach for use in health care decision making a number of challenges remain. The final section of the paper discusses some of these challenges in the context of thinking about the extent to which capabilities might offer a promising approach for the future.

DISCUSSION: DOES THE CAPABILITY APPROACH OFFER PROMISE FOR THE FUTURE?

There are many challenges involved in using and applying the capabilities approach to the evaluation of health care interventions in the future. Some of the most important for health

economists are considered here, and form the beginnings of a research agenda by the authors for the capability approach within health economics.

First, there is the issue of justifying the choice to use the capabilities approach. As indicated earlier, such justification needs to be made on theoretical and/or empirical grounds. There are health economists who may clearly agree with Sen's analysis of evaluation and may decide to use the capability approach on these grounds. There is also clear evidence (Dolan, Shaw, Tsuchiya & Williams, 2005) that the maximisation of health gain is not all that citizens are concerned about in relation to health care decision making. Given this position, there are various ways forward for health economists. One is to ignore this evidence and to continue to advocate on either a welfarist or extra-welfarist basis on theoretical grounds; another is to try in some way to adapt these approaches; a third is to base decision-making purely on the views of citizens; and a fourth alternative is to seek a theoretical perspective that is more closely aligned to people's views. The capability approach would, potentially, be one such approach.

Second, there is the deliberately underspecified nature of the capabilities approach (Sen, 1993) which is in one respect a strength but which can also cause frustration. Sen notes: "Quite different specific theories of value may be consistent with the capability approach, and share the common feature of selecting value-objects from functionings and capabilities. Further, the capability approach can be used with different methods of determining relative weights and different mechanisms for actual evaluation." (Sen, 1993) (p.48). This strength of the approach can also give a sense of its being too vague to be of use: indeed it has been criticised broadly on these grounds by at least one economist (Sugden, 1993). Applying the approach empirically in health care is currently ground breaking work and, although there are now a small number of applications of the approach (Robeyns, 2006), to date these have tended to remain qualitative, or based on the analysis of large data sets, rather than providing tools that can be used in quantitative evaluations such as conducted for health care interventions. Many challenges are only starting to be dealt with, such as: whether to assess functionings or capabilities; how to

decide which capabilities should be evaluated; how to measure these capabilities (in particular, is the aim only some sort of objective measure such as availability of nutritional intake, or can we measure perceived capabilities?); how, or whether, to value these capabilities; and, of particular concern to the health economist, whether or not to anchor any resultant index. (These are dealt with in much greater depth in a previous HESG paper (Coast et al., 2006)).

Third, there is also a broader issue of the acceptability of using capabilities to assess the impact of interventions in health care, in relationship to the extent to which people believe that the output of the health sector can be captured through use of such a measure. For example, in the work by Grewal et al (2006), the dimensions obtained were attachment, security, role, control and enjoyment. There is no single dimension that refers specifically to 'health' and for this reason decision-makers may potentially be unwilling to make use of such a measure unless there is clear evidence that such measures can capture the impacts of health interventions.[2] Although, of course, one needs to bear in mind that healthcare produces health and health is desirable for the ability to undertake other activities, rather than as an end in itself. Health care decision-makers, particularly, may need to be mindful of this point.

Fourth, there is the issue of how capabilities should be used. Should they merely provide an alternative measure for use in evaluation, but essentially be retained within an economic theory that advocates maximisation? Or should they be used more in the sense advocated by Sen and colleagues, as a measure that can be used to assess equity? Or could they be used in the sense of aiming to maximise the number of people achieving a particular threshold of capability?

[2] Thanks to John Brazier for this point.

Conclusion

The capability approach is both old and new within health economics. It is old in the sense that its use in a partial manner has formed (at least in part - the ‘decision-maker approach’ could make an equal claim) the theoretical underpinnings of what has become the dominant approach to evaluation in health economics: the extra-welfarist use of QALYs. It is new, however, in the sense that health economists are beginning to draw upon rather more of the theory, both in relation to Sen’s orginal development and in relation to the interpretations of others.

We would welcome comments from HESG on any aspect mentioned in this paper, and although not wanting to be too prescriptive, would suggest the following points for discussion:

- Are there other uses of the capabilities approach in health care that we haven’t drawn upon here?
- What are the relative advantages & disadvantages of using the capability approach?
- What aspects of the proposed research agenda appear strongest and weakest?
- Views on any of the three specific pieces of work outlined.

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