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## DECISION-MAKER COMMENTARY

## The Capability Approach: A Critical Review of Its Application in Health Economics



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## ABSTRACT

The capability approach is an approach to assessing well-being developed by Amartya Sen. Interest in this approach has resulted in several attempts to develop questionnaires to measure and value capability at an individual level in health economics. This commentary critically reviews the ability of these questionnaires to measure and value capability. It is argued that the method used in the questionnaires to measure capability will result in a capability set that is an inaccurate description of the individual's true capability set. The measured capability set will either represent only one combination and ignore the value of choice in the capability set, or represent one combination that is not actually achievable by the individual. In

addition, existing methods of valuing capability may be inadequate because they do not consider that capability is a set. It may be practically more feasible to measure and value capability approximately rather than directly. Suggestions are made on how to measure and value an approximation to capability, but further research is required to implement the suggestions.

**Keywords:** capability, capability approach, economic evaluation, ICECAP.

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## Introduction

The capability approach is an approach used in well-being assessment developed by Amartya Sen [1] in "Equality of what" and expanded in his later works (see, for example, Sen [2–4]). Sen [2] argued that well-being consists of "functionings," which are the things someone achieves to do or be, and "capability," which are potential combinations of functionings available to an individual. The capability approach can be contrasted with utility-based approaches, which entirely focus on happiness, preference-satisfaction, or choice, and resource-based accounts, which entirely focus on income or commodities [5]. Several articles have discussed the capability approach in relation to health economics theoretically [6–8]. More recently, there have been practical applications of the capability approach with several attempts to develop questionnaires to measure and value capability at an individual level. In this commentary, the new questionnaires are critically reviewed to assess whether they are able to operationalize the capability approach by accurately measuring and valuing capability.

The next section describes two key ideas of the capability approach, namely functionings and capability. The third section reviews existing questionnaires. The fourth and fifth sections discuss and identify problems with the methods used to measure and value capability. The remainder of the article suggests possible solutions and concludes.

## Functionings and Capability

Functionings and capability are two important aspects of an individual's well-being. Functionings are the various activities one engages in, such as work or leisure activities, or various things one is, such as happy or literate. An individual's life and well-being can be described by the combination of the functionings they achieve. Sen [4] has argued that measuring the achieved combination of functionings of an individual is not always enough to assess well-being. Well-being should include an individual's "freedom to achieve." This freedom is represented by an individual's capability [9]. Capability is the set of potential combinations of functionings available to an individual [4,10] and represents the potential ways the individual could choose to live.

The need for capability in the assessment of an individual's well-being is based on the importance of choice and opportunity [9]. An individual's well-being can be improved by having more choices. For example, someone who can choose between multiple careers is better off than someone who is limited to one career only, even if both individuals prefer the same career. The capability approach assumes that additional choices can improve well-being even if the preferred choice of an individual was already available to him or her, and in this respect differs from the standard welfare economic approach to welfare evaluation that assumes that the utility of a set is determined by its most valued or preferred element [2,8,11].

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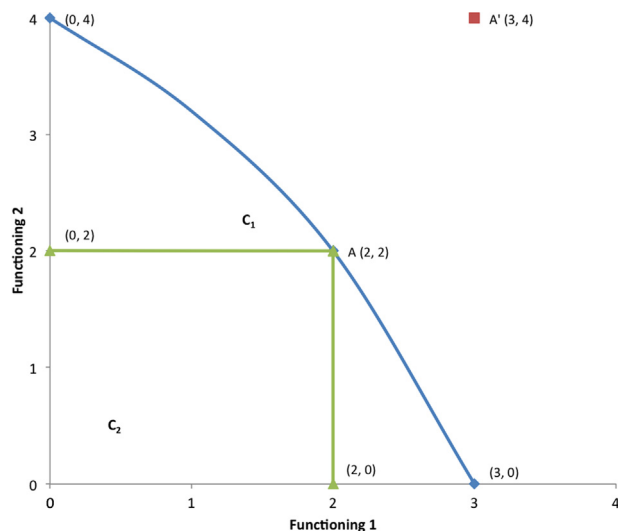
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Capability is also important because an individual may have better opportunities available to him or her than what he or she is currently achieving. An often-quoted example is that someone voluntarily fasting may have the same nutritional intake as someone who is starving. Yet, the individual who is fasting has the capability and opportunity to eat and is therefore better off than someone starving because of poverty. The notion of capability in assessing well-being reflects the importance of both the intrinsic value of having choices and the opportunity to achieve more valuable functionings [4].

The difference between capability and functionings can be shown graphically [2,8,12]. In Figure 1, the two axes represent two functionings. Points A and A' are two combinations of functionings, represented by the points (2,2) and (3,4). A capability set can be represented as the equivalent of a budget constraint, showing all the various combinations of functionings that an individual can achieve [2,8,12]. For example, the area  $C_1$  represents all the functionings combinations an individual can achieve. An individual with the capability set  $C_1$  can achieve point A, but not point A'. Capability is thus described in functionings terms and is a set made up of points in the space of functionings; that is, capability is simply a set of combinations of functionings [9]. Note that the capability set  $C_1$  implies a trade-off between the two functionings but a trade-off is not necessary. A capability set with no trade-offs between the two functionings can be represented by a rectangular area such as  $C_2$  [12].

## Overview of Existing Capability Questionnaires

A number of capability-based questionnaires have been developed for use in health care. The OCAP-18 for use in public health [13] and the Oxford CAPabilities questionnaire-Mental Health for use in mental health [14] are both based on previous work on a generic capability questionnaire [15,16]. The ICEpop CAPability (ICECAP) family consists of the ICECAP-O for older people [17], the ICECAP-A for adults [18], and the ICECAP-SCM for end-of-life settings [19]. There is a measure for those experiencing chronic pain [20]. There is also the Adult Social Care Outcomes Toolkit (ASCOT), which combines both functioning and capability [21]. The questionnaires are described in Table 1. The next paragraphs discuss the methods the questionnaires use for measuring and valuing capability.



**Fig. 1 – Graphical representation of two functionings and two capability sets,  $C_1$  and  $C_2$ .**

All the questionnaires mentioned above, except the ASCOT, attempt to describe an individual's capability set by including phrases such as “being able to” or “can” in each item. For example, to identify potential functionings within the capability set regardless of whether they are achieved or not, they may ask whether one is *able* to feel secure, *free* to decide, or *can* enjoy. In comparison, questions that focus on functionings would only ask whether one feels secure, does decide, or is enjoying. The ASCOT considers “whether or not people are able to achieve their desired situation” as a measure of capability [21].

None of the capability questionnaires have used the choice-based techniques of time trade-off or standard gamble but their valuation techniques resemble preference elicitation methods used in health economics. The measure by Kinghorn [22] was valued using the multiattribute value method, which is similar to the multiattribute utility theory but does not use uncertainty or choice. The ICECAP-A, the ICECAP-O, and the ASCOT questionnaires use best-worst scaling, in which respondents are presented with a state and asked to pick the best and worst attribute in that state given the attribute level [17]. The pair of attribute levels chosen represents the maximum difference “in the part-worth utilities” of the state, which can be used to obtain utilities for each attribute level [23]. These methods are similar to those used in health economics to value preference-based measures such as the health utilities index 3, the EuroQol five-dimensional questionnaire, and the six-dimensional health state short form (derived from 36-item short form health survey), and no particular aspect of the valuation task is changed for valuing capability.

The next two sections consider whether these questionnaires are able to overcome two difficulties in operationalizing the capability approach: measuring and then valuing capability sets [8].

## Problems with Measuring Capability

The capability questionnaires aim to measure an individual's capability set, but the method of using phrases such as “are you able to” or “can you” fails to achieve a valid measure of capability because it measures each domain independently of other domains. The questionnaires, in effect, ask an individual to respond with the highest possible achievement on each functioning, and therefore measure the vector of  $(\text{Max}(f_1), \dots, \text{Max}(f_n))$ , where  $f_i$  are the various functionings measured. If an individual's capability set was  $C_1$  in Figure 1, combining the highest achievable level for each functioning would result in the measured capability set (3,4); if an individual's capability was  $C_2$ , the measured capability set would be (2,2).

There are two problems with using phrases such as “are you able to” or “can you” in the question as a method of measuring capability. The type of problem depends on whether there are trade-offs between the functionings, that is, whether the capability set is more like  $C_1$  or  $C_2$  in Figure 1. First, if there are trade-offs between any of the functionings, this method will measure a point outside an individual's actual capability set. The elicited set therefore will be a combination that is not achievable by the individual. For example, the point (3,4) would be measured for capability set  $C_1$  in Figure 1, but this point is not in the capability set  $C_1$ . The extent of this problem depends on how many trade-offs there are between dimensions, but there is little empirical research available on this issue.

The second problem is that one combination of functionings is not an accurate description of an individual's entire capability set. If there are no trade-offs between functionings, this method will identify the unique dominant functionings combination, one that is better than all other functionings combinations on one functioning and at least as good as all others on all other

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