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Towards A Unified Framework for Understanding the Depth, Breadth and Duration of Poverty

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Abstract – In recent decades there have been considerable steps forward in terms of understanding poverty. This paper identifies three ‘meta dimensions’ of poverty, which relate to: (1) depth and severity; (2) breadth and multidimensionality; and (3) time and duration. The advances that have been made in terms of conceptualising, measuring and analysing poverty in each of these areas are briefly considered. It is shown that the third and final ‘meta-dimension’ – time and duration – has been neglected until relatively recently. It is argued that time, and in particular, duration is an important analytical component for understanding the experience of poverty and the processes that create and reduce poverty. The final part of the paper suggests a way of integrating time into a unified framework for understanding poverty, which can deal with the depth, breadth and duration of poverty. This involves extending Qizilbash’s poverty and vagueness methodology to include duration.

Key words – poverty, time and duration, multi-dimensionality, capability and vagueness.

1. Introduction

In recent decades there have been considerable steps forward in terms of both the conceptualisation and measurement of poverty. By drawing on the available literature this paper suggests it is possible to identify at least three ‘meta-dimensions’¹ of poverty, which are distinct from ordinary dimensions or components of poverty. The first recognises that poverty has *breadth* in the sense that it is multi-dimensional and composed of a range of different capability, rights or need deprivations – such as illiteracy, poor health and physical insecurity – which go well beyond the traditional focus on income, consumption and resources. The second recognises that poverty in a particular dimension – not necessarily income – has *depth* and may be far more serious in one case than another. The third meta-dimension relates to time, and in particular to the duration of poverty, which has been neglected in the literature until relatively recently.²

¹ By meta dimensions we are referring to overarching components of the concept of poverty. Within each meta dimension there may be several dimensions. For example, *breadth* might include malnutrition, ill health, illiteracy, and physical insecurity (amongst other dimensions). *Depth* may incorporate headcounts (the number or proportion of people below the poverty line), the poverty gap (how far on average the poor fall below the poverty line) and a measure of inequality among the poor, inter alia. Finally, *time* typically involves duration (i.e. linear time, which is the focus in this paper), but could be expanded to include rhythms and histories (see section 2). Alkire (2002) discusses the characteristics of dimensions as normally understood in the development literature.

² The case might be made that space (i.e. the geographical distribution of poverty) is a fourth meta-dimension. While the analysis of spatial patterns of poverty is important for

This paper has three main objectives. The first is to show that time in terms of duration is an important analytical component for understanding the experience of poverty and the processes that create and reduce poverty (and thus it is important for policy and action). The second is to consider the advances that have been made in conceptualising, measuring and analysing poverty in recent years – particularly in terms of breadth/ multidimensionality and depth/ severity. This confirms the advances made in these two meta dimensions and reveals the more limited progress in the third dimension, time. The third and final part of the paper explores one possible way of integrating time into a ‘unified’ framework for understanding poverty, which is able to deal with the breadth, depth and duration of poverty. This approach involves extending Qizilbash’s poverty and vagueness methodology to include duration.

This paper is organised as follows. Section 2 argues that time and in particular duration matter and considers some of the reasons why time has been neglected until relatively recently. Sections 3, 4 and 5 consider the advances that have been made in terms of conceptualising, measuring and analysing poverty in each of the meta dimensions. Section 6 investigates one possible way of incorporating time into a framework that can deal with the breadth, depth and duration of poverty. Section 7 provides a summary and some conclusions.

2. Time and Poverty

‘I know what time is if I am not asked’ a wise old man once said, ‘if I am asked, I no longer know’ (Elias, 1992, p.1; cited in Bevan, 2004, p.11).

The ‘breakthroughs’ in conceptualising the breadth/multidimensionality and depth/severity of poverty (see below) have not been matched by equivalent, systematic, theoretical advances with regard to time. While time has been incorporated into poverty analysis in a number of different ways (see below) it is only recently that researchers have begun to explore the alternative conceptualisations that are available.

understanding the processes that underpin poverty and for policy we do not think that the location of poverty needs to be part of the concept of poverty.

It is possible to incorporate time into the conceptualisation of poverty at two fundamentally different levels. The first of these involves treating time as an ordinary dimension of poverty, rather like the second volume of the World Bank's study *Voices of the Poor* has done (see Narayan and Chambers et al, 2000, esp. pp. 21, 34, 92-3). In this approach time or lack of it, is merely another dimension or component of poverty. A person is defined as time poor if he or she lacks the necessary time to achieve things of value, such as adequate sleep and rest or being with family and friends (see Clark, 2002, ch. 4). In this respect time is often viewed as a resource, although it undoubtedly has intrinsic significance as well. This paper is concerned with the other way of integrating time into the study of poverty. That is treating time as a meta-dimension of poverty itself rather than simply an additional dimension to the breadth of poverty.

Until the late 1980s the main ways in which time was included in poverty analysis was in terms of poverty trends, seasonality, the timing of experiences and historical accounts of poverty. Poverty trends commonly contrasted headcounts of poverty snapshots across a population at two different times. They provided a general impression of whether poverty in a country was increasing or decreasing between two points in time but little or no idea of the dynamic nature of poverty. Comparing poverty trends does not tell us whether households are persistently poor or if they typically move into and/or out of poverty over time (see Hulme, forthcoming; Hulme and Shepherd, 2003a; Carter and Barrett, 2004, p.4). For example, in the case of Vietnam, Karen Moore (2004) – drawing on *The Chronic Poverty Report 2004/05* – observes that:

... during the 1990s, Vietnam experienced [a] significant reduction in poverty: from 1993 to 1998, rural and urban poverty rates fell by about 24% and 15% respectively. But these aggregate poverty trends tell us nothing about what happened to individual households. In rural areas one third of the population remained poor, and another 5% fell into poverty... The urban picture is nowhere near as severe – about 7% stayed in poverty while only 2% moved into poverty... Why did Vietnam's pro-poor growth fail to reach over half of the rural poor and over one-quarter of the urban poor? Looking at the data in more detail provides some indication.

Lawson, McKay and Okidi (2003) report in a similar vein on the case of Uganda. Between 1992 and 1999 poverty in Uganda fell by about 20 percent as the headcount

rate fell from 55.7 percent to 35.2 percent. However, moving beyond conventional poverty analysis by looking at the dynamics of poverty (i.e. what actually happened to individual households over time) provides a richer picture. Almost 30 percent of poor households in 1992 managed to move out of poverty by 1999, but around 10 percent of non-poor households fell into poverty. About 19 percent of households that were poor in 1992 remained poor in 1999 (Lawson, McKay and Okidi, 2003, p.7 and table 1).

The seasonality of income, consumption and access to food was another focus with particular interest in the annual cycles of relative plenty and food shortage/ hunger that occur in many rural areas (Chambers, Longhurst and Pacey, 1981). The significance of specific poverty experiences at certain times in the lifecourse was also highlighted with a particular focus on lack of access to food/ nutrition for pregnant women and children and education. A lack of access to nutrition, basic health services or education in early life (foetal and infant) can have irreversible effects on the physical stature and cognitive ability of people (Loury, 1981; Strauss and Thomas, 1998; Yaqub, 2002). Historical accounts of poverty – seeking to lay out and interpret the main experiences and events in a chronological order – also continued (Geremek, 1994; Haswell, 1975; Hufton, 1974), although Iliffe's (1987) work moved things forward through its contrast of structural and conjunctural poverty in Africa which went beyond the static poverty analyses of his era.

Since the late 1980s there has been growing interest in examining the duration of poverty. Economists initially led the way through studies of transitory and chronic poverty, poverty dynamics and patterns of poverty spells (see section 5). More recently economists have recognised the fact that mortality represents an under-reported aspect of poverty because premature death robs an individual of all the functionings they could have experienced over their 'lost' years (Kanbur and Mukherjee, 2003).³ While these studies have helped to put duration on the research agenda, their narrow focus on income or consumption poverty means that they have,

³ It is not possible to pursue this matter here. Hicks and Streeten (1979), Dasgupta and Weale (1992) and Sen (1998) present cases for viewing human poverty and deprivation in terms of 'life-expectancy', mortality rates and related indicators.

at best, only tangentially linked up with the conceptual advances promoted by Sen and others.

Clearly ‘time’ merits serious attention for the conceptualisation of poverty and there are a number of different ways in which this might be pursued. Much depends on the meaning attached to time.⁴ Bevan (2004) highlights three contrasting approaches. Time might be construed in terms of (1) *clocks and calendars*, which measure linear time mechanically with reference to duration and intervals; (2) *rhythms*, which focus on the mechanisms and power structures built into people and things as they move through time and change; and (3) *histories*, which involve sequences of events and interactions between mechanisms and structures that lead to path dependence. Integrating any of these notions of time into the conceptualisation and analysis of poverty would undoubtedly be a useful exercise. In this paper we will focus on the linear conception of time, which is concerned with the duration of poverty.⁵

We believe that the ‘duration’ aspect of time merits particular attention for four main reasons. First, there is a simple logic that says if x has experienced the same forms and depths of poverty as y , but for a much longer period, then a moral concern with helping the worst off requires that x be prioritised and supported as s/he has experienced more deprivation than y .^{6,7} Second, a failure to analyse the distribution of

⁴ Entire books have been written on the meaning of time (e.g. Elias, 1992; Abbott, 2001), although it is not possible to pursue this subject here.

⁵ Bevan (2004) considers ways of incorporating rhythms and histories into poverty analysis.

⁶ In effect this is arguing that the breadths, depths and durations of the deprivations x and y experience should be multiplied and thus x will score a higher level of deprivation than y . If this computation were pursued it would be necessary to decide whether duration was computed as absolute time or relative time i.e. the proportion of x and y 's lives spent in poverty. The problem with such measures (and aggregate summary statistics generally) is that they conceal at least as much as they reveal about the nature of human poverty and deprivation.

⁷ In this example x is not poorer than y as the form and depth of the deprivation in question are equivalent. X , however, has been poorer for longer than y (possibly for much longer than y), and arguably this ought to count for something morally speaking. In this case we might accept that x is generally ‘worse off’ than y , although not necessarily poorer than y . In this example the lives of both x and y are blighted by their deprivation. If we formally classify x as poorer than y , we risk obscuring the deprivation of y , which may well be quite serious.

There may also be cases in which the form and depth of a deprivation has lasting consequences, even after the initial deprivation has passed. Such deprivation may demand greater weight relative to similar deprivations endured over a longer time horizon. It is possible, however, that the ‘lasting consequences’ in question might show up in other dimensions of poverty (e.g. mental trauma resulting from past physical abuse).

spells in poverty in a population is likely to lead to weak analyses of ‘why’ people are poor and, potentially, to weak policies. For example, hypothetically two different countries might have the same scores for the headcount, depth and severity of poverty. Apparently, poverty in both of these countries is similar. However, in the first country poverty is largely transitory and is a phenomenon that many of its population experience but only for short durations. In the other, most of the population are non-poor but a minority are trapped in poverty for most or all of their lives. In the former country policies need to help those experiencing short spells of poverty – unemployment insurance and benefits, reskilling, microcredit, temporary social safety nets, health services. In the latter, deeper structural problems must be addressed – inclusion of the poor in access to health and education services, asset redistribution, tackling social exclusion, regional infrastructural development. Thirdly, recent important work (Carter and Barrett, 2004; Barrett, forthcoming) has revealed the linkages between the depth of poverty, in terms of material and social assets, and duration with a focus on household level poverty traps. The assumption behind this work is that low levels of assets lead to persistent poverty (at least in the absence of financial markets and safety nets), but a conceptualisation is needed that will also permit an analysis of the ways in which the duration of poverty leads to depleted asset levels. Finally, the duration of time spent in poverty has important implications for individual or household future strategies. This is in terms of physical and cognitive capabilities (see above) and the ways in which past experience shapes the agency (motivation, preferences and understandings) of people.

In later sections of this paper we examine duration in more detail but before then it is worth looking at why duration has not featured more prominently in the conceptualisation, measurement and analysis of poverty. It is possible to identify at least five reasons. First, there are the general difficulties that social scientists, and particularly those using quantitative methods, have in making their analyses longitudinal. It is much easier to conduct static and/or cross country or spatial comparisons both conceptually and methodologically. Most notably the problem of sample attrition and matching makes it increasingly difficult to conduct meaningful analyses over time. An investigation of the Michigan Panel Study on Income Dynamics found that by 1989 the panel ‘had experienced approximately 50 percent sample loss from cumulative attrition from its initial 1968 membership’ (Fitzgerald et

al., 1998). The same investigation found that attrition is ‘highly selective’ and tends to be concentrated among the most deprived and vulnerable groups (although the authors go on to claim that this did ‘not seriously distort the representativeness’ of the Michigan Panel).

Second, empirical studies that attempt to track processes and measures over time face practical problems that are not encountered in static analyses. In particular, they have to ‘wait’ until they can repeat their data collection exercise in the future. Depending on the nature and purpose of the study, this may entail a break of several years – as with most Living Standard Measurement Surveys or National Censuses – before any longitudinal analysis can be attempted. Repeat visits also greatly increase the cost of research, which place strict limits on the number of waves it is possible to administer in most panel surveys. (Many panel surveys are restricted to no more than two or three waves). In addition most funders want to see research projects completed in two or three years, which effectively leaves no time to ‘go back’. Respondents are also more likely to experience interview fatigue if they are repeatedly visited. The ‘shortcut’ alternative is to try to capture household dynamics by asking people to recall their past experiences. While this method has value there are challenges to it because of the increased probability of inaccuracies and the ‘rewriting’ of memories.

Third, there are ethical problems associated with revisiting people experiencing hardship without being part of some practical local initiative to provide assistance. Many research projects are specifically designed to address national or global policy issues, but draw on fieldwork conducted in specific localities. Even when these projects are reasonably successful, there is often no sign of tangible results at the grass roots level in the short or medium term. Moreover the link with any long term improvement in the quality of life and the original research may not be obvious. Relatively few research projects lead to highly visible local development initiatives such as the installation of electricity or piped water.⁸

⁸ Most agencies prefer to fund research projects that produce results that can be generalised and used to inform development policy well beyond the boundaries of the original fieldwork sites. DFID, for example, only funds projects with relevance for more than one country.

Fourth, there are pressures on poverty researchers to conduct studies that can guide policy and action ‘here and now’. In particular, there is tremendous political and moral pressure to provide answers and solutions today, instead of waiting for the results of further rounds of interviews. Finally, there is the contextual problem that most poverty occurs in low-income countries where the difficulties of acquiring good quality longitudinal datasets are high,⁹ and where much qualitative work is done by visiting/ peripatetic foreign researchers, rather than local researchers who can more easily conduct repeat visits.

3. The Depth and Severity of Poverty

The dominant approach to poverty has been to view it in terms of lack of income or consumption. The informational requirement of such a measure is fairly limited, which makes it easy to apply – particularly in relation to other more complex notions of poverty. This section considers four different ways of conceptualising and measuring poverty in the income or consumption space. These approaches involve: (a) counting the poor (the headcount); (b) measuring income shortfalls (the income gap); (c) allowing for income inequality among the poor (distribution sensitive measures); and (d) allowing for the specification of vague or imprecise poverty line (fuzzy measures of poverty).¹⁰ Each of these approaches add something distinct to our understanding of poverty and it worth remembering that these methods can be applied beyond the income and consumption space (see Dercon, forthcoming).¹¹

One of the simplest and most widely used measures of poverty is the headcount index, which involves counting the number of people below a defined poverty line, and

⁹ This is because poor official records make samples difficult to identify and track; households and streets in poor areas are often not numbered or named; many migrants do not leave forwarding addresses; several languages may be required in a small area; and interviewers are poorly trained, inter alia.

¹⁰ There is also a literature on the incompleteness of welfare judgments and the use of multiple poverty lines, which relates to the ‘dominance’ or ‘stochastic dominance’ approach discussed by Atkinson (1987) and Foster and Shorrocks (1988) among others. This literature is not pursued in this paper.

¹¹ It should also be noted that for some dimensions of poverty depth is measured explicitly or implicitly in terms of duration. For example, when looking at educational deprivation depth is often measured, in effect, in terms of years out of school.

expressing this as a proportion of the total population. Leaving aside the very real issue of where to draw the poverty line (at least for now), it can be shown that the headcount measure says nothing about the *extent* or *magnitude* of income shortfalls below the poverty line.¹² Thus, a reduction in the income of any person currently below the poverty line will leave the headcount unchanged, *ceteris paribus* (Sen, 1981, p.11).¹³ For this reason the headcount is sometimes supplemented with the income (poverty) gap. This measure gives the aggregate shortfall of income of all the poor from the poverty line. The income gap ratio is then given by the percentage shortfall of the mean income of the poor from the poverty line (see Sen, 1976, pp.220-221, 223; Sen, 1981, p.33). Like the headcount, the income gap ‘is completely insensitive to transfers of income among the poor so long as nobody crosses the poverty line...’ (Sen, 1981, p.33).¹⁴ Unlike the headcount, however, it pays no attention whatsoever to the number or proportion of people below the poverty line (Sen, 1976, p.220; 1981, p.33).

Given these limitations Sen proposes combining information provided by the headcount (how many) and income gap ratio (how far on average below the poverty line) with a measure of inequality below the poverty line. The result is what has become known as the Sen poverty index. This measure uses an ordinal rather than a cardinal system of weights to compare the incomes of people below the poverty line. Foster, Greer and Thorbecke (1984) have refined Sen’s work to produce a measure of poverty that is additively decomposable (e.g. by different sub-groups) and which takes the relevant weights to be the distance between actual income and the poverty

¹² One simple but very partial means of tackling this problem is to identify two or more poverty lines. In the late 1980s Rahman and Hossain (1995) used this device very effectively in Bangladesh to distinguish between the ‘moderate poor’, with expenditures permitting a calorie intake of 2112 calories a day, and the ‘extreme poor’, able to access only 1740 calories per day. An implicit assumption of this work was that the extreme poor are also chronically poor. Later work has shown that this is only partly true (Sen, 2003). This ‘two lines’ approach is now applied at the global level with the \$1 and \$2 poverty lines used by the World Bank and UN (World Bank, 2001).

¹³ The headcount measure therefore violates Sen’s (1976) monotonicity axiom, which demands that: ‘Given other things, a reduction in income of a person below the poverty line must increase the poverty measure’ (p.219).

¹⁴ The income gap measure (like the headcount measure) therefore violates Sen’s (1976) transfer axiom, which demands that: ‘Given other things, a pure transfer of income from a person below the poverty line to anyone who is richer must increase the poverty measure’ (p.219).

line. Their measure is expressed as a combination of the headcount ratio, the income gap ratio and a measure of inequality shown to be the squared coefficient of variation.

All of the measures discussed so far incorporate the headcount, and therefore depend upon the identification of a poverty line. Selecting an appropriate poverty line raises a range of practical and methodological challenges (see Ravallion, 1998; Kanbur and Squire, 1999). For the purpose of making international comparisons the poverty line is often set at 1US\$ per day in terms of 1985 PPP (World Bank, 1990). A related approach involves deriving poverty lines from estimates of ‘minimal nutritional requirements’ or ‘consumption norms’ in particular societies.¹⁵ While this may allow for the fact that nutritional and commodity requirements often vary from one country to another, it neglects the fact that these requirements can also vary quite widely within specific countries (especially among different groups of people and across regions) (e.g. Sen, 1981, p.12). There are also difficulties in terms of defining these requirements, which depend on the choice of commodities and assumptions about the proportion of income spent on food, *inter alia* (see Sen, 1981, pp.11-14).

A different approach involves estimating a subjective poverty line based on qualitative perceptions of ‘consumption adequacy’ among the poor (e.g. Pradhan and Ravallion, 2000). While this approach is clearly bottom up, an allowance inevitably has to be made for ‘heterogeneity’, as views about what constitutes poverty differ (ibid., p.462). Moreover, there is no guarantee that a poverty line derived from this method will permit everyone to satisfy their nutritional/ commodity requirements if these requirements vary.¹⁶ Yet another approach involves abandoning the poverty line altogether in favour of a more inclusive approach that gives positive weight to the entire distribution, e.g. the overall mean (see Ravallion, 1994). This approach, however, does not permit us to distinguish between the poor and non-poor!

¹⁵ The \$1 per day poverty line is, at least in theory, supposed to loosely reflect living requirements in poor countries.

¹⁶ Pradhan and Ravallion (2000) point out that ‘people in poor areas perceive themselves to be even poorer than objective comparisons suggest’ (p.470), which implies they might set higher poverty lines. Clark and Qizilbash (2002; 2005) however, suggest that poor people set very tough standards for someone to qualify as poor.

Once a poverty line is chosen the construction of poverty profiles may be hampered by measurement errors. In the case of poverty profiles relating to households rather than individuals various assumptions have to be made about equivalence scales, which can introduce further distortions (for a discussion of equivalence scales see Lanjouw and Ravallion, 1995; Deaton, 1997, p.241). Finally, the fact that income is often unevenly distributed within the household should also be taken into account. For these reasons many scholars have proposed a more direct method for evaluating poverty, which considers the things people actually manage to achieve (see the following section).¹⁷

Another way of dealing with many of these problems is to allow for ‘vagueness’ or imprecision in terms of defining poverty lines. Cerioli and Zani (1990), for example, allow for the specification of a continuous range of poverty lines and rank the poor according to their level of disadvantage. From this information it is possible to compute the degree to which a person or group of people belong to the sub set of the poor. This measure is absolute and captures the subject’s proximity to the lowest specified poverty line. Cheli and Lemmi (1995) have criticised the arbitrary selection of poverty lines in this approach. They have developed an alternative fuzzy set theoretic measure that is *totally relative* in that it automatically equates the lowest (highest) achieved income with the lowest (highest) poverty lines. In this measure the degree to which a person or group belongs to the sub-set of the poor depends on the proportion of people with higher incomes. Clark and Qizilbash (2002) provide a formal treatment of these measures and consider their relevance for measuring different aspects of poverty.

4. The Breadth and Multidimensionality of Poverty

While the concern with measuring poverty in terms of income and commodity command has persisted, economists and other social scientists have increasingly recognised the need to broaden their conceptions of human poverty and development.

¹⁷ The income approach, however, does preserve an element of freedom by focusing on the ability to meet needs (irrespective of whether or not the person actually chooses to use that ability) (Sen, 1981, pp.26-7).

Writing in the late 1960s and early 1970s – often under the auspice of the International Labour Organisation – Dudley Seers was amongst the first to call for the ‘dethronement of GNP’. According to Seers

[t]he [relevant] questions to ask about a country’s development are... What has been happening to poverty? What has been happening to unemployment? What has been happening to inequality? If one or two of these central problems have been growing worse, especially if all three have, it would be strange to call the results development, even if per capita income had doubled... (Seers, 1969, p.3).

Such concerns gave rise to the emphasis on ‘growth with redistribution’ and then to the basic needs approach to development in the 1970s and early 1980s (see Streeten, 1995; Stewart, 1996 and forthcoming), which provided the impetus for the social indicators movement. Increasingly the emphasis moved from securing the *means* for eliminating poverty and achieving development (e.g. employment, equitable growth, access to basic need goods and services) to promoting the *ends* of human development.¹⁸

The shift in emphasis from means to ends gave rise to the development of Amartya Sen’s capability approach (CA), which was first described in his 1979 Tanner Lectures at Stanford University (Sen, 1980; 1984; 1985; 1999). The foundations for the CA stem from Sen’s critiques of utility (happiness, pleasure, desire-fulfilment) and resource (income, wealth, commodity command) based concepts of human poverty and development (see Crocker, 1992; Clark, 2002, ch.2; forthcoming). In particular, Sen (1982) argued that many types of non-utility information are relevant for the assessment of poverty and well-being.¹⁹ Moreover, there is no guarantee that this information will be adequately reflected in utility functions due to various distortions typically associated with poverty (e.g. adaptation, social conditioning, etc). It follows that we should concern ourselves with the full range of human function(ing)s (‘beings’ and ‘doings’) and capabilities (opportunities to function) that constitute a good form of life. According to Sen (1983, p.754) ‘being able to live long, escape avoidable morbidity, be well-nourished, be able to read, write and

¹⁸ It has also been argued that a broader commitment to human development lies behind narrow economic concepts of development (see Clark, 2002, pp.19-21).

¹⁹ According to Sen the relevance of non-utility information ‘is the central issue involved in disputing welfarism’ (Sen, 1982, p.363 and part 4).

communicate and take part in literary and scientific pursuits and so forth' are all examples of valuable capabilities. In this framework poverty is construed as 'basic capability failure'. Notice that while poverty is absolute in the capability space, it is relative in the income or commodity space. In other words the CA recognises that people are heterogeneous and typically require different resource endowments to achieve the same functionings (see Sen, 1999, pp.70-71). While resources have considerable instrumental significance, they are not valuable in themselves²⁰ and typically provide misleading proxies for human poverty and development.

The CA has become increasingly influential in recent years and provides 'the strong conceptual foundation' for the human development movement (Fukuda-Parr, 2003, pp.302-303). Along with Mahbub ul Haq and others, Sen played a crucial role in terms of refining and broadening basic concepts and measurement tools for the *Human Development Reports* (published annually since 1990), which have tackled a variety of issues ranging from consumption and sustainable development to poverty, human rights and democracy (see Haq, 1995; Fukuda-Parr, 2003). Moreover, despite initial resistance, Sen played a crucial role in terms of developing a human development index (HDI) and human poverty index (HPI) based on three basic components relating to economic means, survival and education (UNDP, 1990; 1997). While 'Sen was persuaded by Haq's insistence that only a single number could shift the attention of policy makers from material output to human well-being as a measure of progress' (Fukuda-Parr, 2003, p.305), he remains concerned that such crude summary statistics cannot capture either the breadth or complexity of the human development approach:

The Human Development Index (HDI) was devised explicitly as a rival to GNP – indeed as a similarly coarse measure as the GNP but not oblivious of everything other than products and incomes. Not surprisingly, it has a boorishness that is somewhat similar to that of the GNP... By focusing on some of the aspects of human lives – such as longevity and education – the HDI takes us well beyond the narrow limits of concentrating only on objects of convenience. It is a quick and imperfect glance at human lives, which – despite the crudeness it shares with the GNP – is sensitive, to a significant extent, to the way people live and can choose to live.

However, the breadth of the human development approach must not be confused with the slender specificity of the Human Development Index. The latter – the HDI – can

²⁰ 'A person's well-being is not really a matter of how rich he or she is... Commodity command is a means to the end of well-being, but can scarcely be the end itself...' (Sen, 1985, p.28).

compete with the GNP in terms of ready usability, in a way that the very broad and sophisticated human development analysis – with many tables and complex concerns – cannot. This explains why the HDI, despite its rough and unrefined nature, has been used as something of a flagship of the ‘human development approach’ since its initial appearance in the Human Development Report... (Sen, forthcoming; see also Sen, 2000, p.22).

In contrast to the HDI/ HPI and other summary statistics of human poverty and development (such as the physical quality of life index), the CA has the potential to accommodate the entire range of ‘beings’ and ‘doings’ that constitute a good form of life (see, for example, Clark, 2002, ch.2; forthcoming). There is, however, a crucial stumbling block. While Sen provides isolated examples of intrinsically valuable capabilities (and more recently has admitted to using various lists of capabilities), he has refused to endorse a unique list of functionings or capabilities as ‘objectively correct’ for practical and strategic reasons (Sen, 1993, p.43; 2004; see also Clark, 2002; Qizilbash, 2002b).

One well-known attempt to complete the CA has been made by Martha Nussbaum. Drawing heavily on Aristotle, Nussbaum (1990; 1995; 2000) has developed a list of central human capabilities. The latest version of this list (which has not changed that much over the years) covers: (1) *Life*; (2) *Bodily health*; (3) *Bodily integrity*; (4) *Senses, imagination and thought*; (5) *Emotions*; (6) *Practical reason*; (7) *Affiliation*; (8) *Other species*; (9) *Play*; and (10) *Political and Material Control over one’s Environment* (Nussbaum, 2003, pp.41-42).²¹ Attempts to identify valuable capabilities can be criticised on the grounds that they are potentially paternalistic or tend to neglect historical or cultural differences. Nussbaum, however, argues that later versions of her list reflect ‘years of cross-cultural discussion’ (Nussbaum, 2000, p.76). Closer inspection, however, suggests that nearly all the items on Nussbaum’s list are derived from the writings of Aristotle (see Nussbaum, 1990, n.52-65; Clark, 2002, ch.3). Moreover, confronting Nussbaum’s list of central human capabilities with the values and experiences of the poor implies some revisions might be in order (see Clark, 2000; 2002; 2003; Okin, 2003).

²¹ See Alkire (2002, ch.2), Clark (2002, ch.3) and Saith (2001) for summaries and discussions of other prominent lists. Ingrid Robeyns (2003) has recently developed a procedural account of human capabilities for evaluating gender inequality in Western Societies.

While the CA provides the philosophical foundation for a broad concept and measure of human poverty and well-being, there are well-known difficulties in terms of making the approach operational.²² In particular, the CA requires a great deal of information (about the various functionings and capabilities involved), which may not be readily available – especially when it comes to making international comparisons. Moreover, it is not only necessary to identify the relevant capabilities for the task in hand (over which there may or may not be broad agreement),²³ but to take a stand on the relevant cut offs or thresholds that denote poverty (well-being) for each of the capabilities in question. One promising response to these kinds of difficulties involves developing a methodology that can capture some of this imprecision. Enrica Chiappero Matinetti (1996; 2000), for example, has developed a version of the CA that views deprivation (well-being) ‘as a broad and fuzzy concept that is intrinsically complex and vague in the sense that it is not possible to contain within clear and unquestionable boundaries’ (Chiappero Matinetti, 2000, p.213). Instead of drawing clearly defined cut offs between opposite modalities (e.g. poor and non-poor), she recognises that deprivation (and well-being) are vague predicates that manifest themselves in varying degrees (ibid.). Arguably, however, Chiappero Matinetti approach does not capture all of the ambiguity or imprecision that resides in the CA. An alternative approach that considers an additional level of vagueness (which is concerned with the actual dimensions of poverty and well-being) is considered in the final section of this paper.²⁴

Despite the rapid increase in interest in the CA and poverty generally in recent years, virtually nothing has been written about time in the context of multidimensional concepts and measures of poverty. Nearly all studies that attempt to integrate time into the conceptualisation, measurement and analysis of poverty are concerned with the income or consumption space (see McKay and Lawson, 2003, p.425) rather than

²² Alkire (2002), Clark (2002) and Saith (2001) have tried to pave the way for making the CA operational.

²³ Defining the parameters of the CA requires us to make value judgements, which may be controversial (see Sugden, 1993). While Sen is not willing to endorse a universal list of capabilities, he is reasonably optimistic about the chances of reaching agreement about the basic functionings relevant for poverty analysis (see Alkire, 2002, p.157 and n.19; Clark, 2002, pp.53-54).

²⁴ The existence of this type of vagueness is controversial (see Qizilbash, 2005, pp.19-20). To date it has only been discussed by Qizilbash (2000; 2003; 2005).

with some broader notion of human poverty and deprivation – although the available evidence suggests such studies may tell a very different story about the nature and dynamics of poverty (see Baulch and Masset, 2003). A notable exception is Marco Grasso's (2002) attempt to explore the possibility of making the CA operational using system dynamics. Grasso tries to simulate a set of three functionings over time, given various assumptions about commodities and personal and social conversion factors that transform these commodities into human function(ing)s or well-being. In the end, however, Grasso recognises that his assumptions are 'rather restrictive' and insists that '[t]he ultimate purpose of the model, at this stage, is to verify the use of system dynamics in order to clarify knowledge and understanding of the empirical potentiality of the capability approach, and not to offer conclusive information regarding well-being...' (Grasso, 2002, p.14). While this line of inquiry may prove fruitful, this paper is primarily concerned with measuring, and assessing the dynamics of, various capabilities over time, rather than with the prediction or projection of future functionings.²⁵

5. The Duration of Poverty

The advances of the 1970s and 1980s that characterise multidimensionality and depth/severity in the conceptualisation of poverty were not matched for the meta dimension of time. In particular, serious work on duration only began to emerge in the late 1980s (Bane and Ellwood, 1986; Gaiha, 1988; 1989). An unwritten assumption of much poverty research at that time was that the persistence of poverty at household level was highly correlated with the severity of poverty in income/consumption measures. The empirical testing of this assumption (Gaiha, 1989) helped to stimulate

²⁵ There are signs that capability theorists are beginning to recognise that time should explicitly feature in their analysis of poverty and well-being. For example, the fourth international conference on the capability approach at the University of Pavia in Italy (September 2004) included four papers on 'dynamics and adaptive preference' (see <http://cfs.unipv.it/ca2004/program.htm>). One of these papers argues that 'time is a central element in the objective assessments that individuals make about their lives, in the criteria that individuals choose to evaluate their well-being, and in their sense of agency and autonomy' (Comim, 2004). These papers represent work in progress and have not been formally published yet.

interest in duration in a period when panel datasets were just becoming available for a number of developing countries.

In the early 1990s the number of conceptual and empirical studies began to increase (Gaiha, 1992; Gaiha and Deolalikar, 1993; Morduch, 1994; Grootaert and Kanbur, 1995) but it was not until 2000 that a collection of papers on this theme was brought together (Baulch and Hoddinott, 2000). Three important observations must be noted about the literature that evolved over this period. First, that it was largely the work of economists and econometricians trying to distinguish chronic poverty from transitory²⁶ poverty by analysing panel data and identifying factors that correlated with mobility or lack of mobility. Secondly, virtually all empirical work used income or consumption measures as its main variable. Flows, not assets or entitlements or capabilities, were the primary analytical focus. Thirdly, these studies were almost entirely quantitative and findings were, at best, only partially contextualised. We look at each of these points in turn.

The dependence of this work on the manipulation of panel data led to it being mainly of interest to econometricians and there were few links with other disciplines (e.g. sociology, anthropology and philosophy) and the less reductionist insights that they might bring. Econometricians adopted two quite different procedures for distinguishing between the chronic and transitory poor – spells approaches and components approaches (Yaqub, 2000a,b). The intuitively appealing spells approach identifies the chronic poor by the number or length of spells of poverty they experience. By contrast, the components approach isolates the permanent component of household income or consumption from its transitory variations and identifies the chronic poor as those whose permanent component is below the poverty line. Both approaches have their difficulties. For the spells approach it is the difficulty of specifying the threshold at which transitory poverty shifts to chronic poverty: should this be two years, or five years or ten years or more? There is inevitably a degree of

²⁶ Much of the literature uses the term transient poverty. We prefer the term transitory as ‘transient’ also refers to temporary visitors and workers and this can cause confusion.

