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Core Poverty, Basic Capabilities and Vagueness: An Application to the South African Context

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African Context.

This paper applies a framework which addresses the vagueness of poverty. The 'core poor' are those who are unambiguously poor. In applying the framework we use Sen's capability approach and results from a recent survey. These results suggest that some South Africans set tough standards for someone to qualify as poor. Even by these standards, our lower bound estimate of core poverty is higher than existing estimates of the 'most deprived' and 'ultra-poor'. This result is sensitive to the criteria used in applying the framework, though other results are more robust. While there is evidence that respondents adapted to their living conditions, it was not merely those who were deprived in specific dimensions who endorsed very low cut-offs in those dimensions.

Keywords: poverty, vagueness, capability, perceptions of the poor, multi-dimensionality, Africa, South Africa.

0. Introduction

A growing literature has attempted to apply Amartya Sen's capability approach to the measurement of poverty (Sen, 1992, 1993 and 1999, Chiappero-Martinetti, 1994, 1996 and 2000, Balestrino, 1996, Klasen, 1997 and 2000 and Majumdar and Subramanian, 2001 *inter alia*). Related literatures suggest that we need to recognize the many different dimensions of poverty as well as distinct groups amongst the poor, such as the ultra poor, the chronic poor and the transient poor. The differences between these groups relate primarily to the depth, or the duration, of poverty. In this paper, we apply Mozaffar Qizilbash's work which pursues Sen's suggestion (Sen, 1981, p.13) that poverty is a fuzzy or vague concept (Qizilbash, 2003). Qizilbash's work develops on the insights in Kit Fine's 'supervaluationist' account of vagueness (Fine, 1975) and involves the notion of 'core poverty' – which relates to lack of *ambiguity* about whether some person or household is poor.

In making the notion of core poverty operational, we also take our cue from insights in the literature on vagueness. These allow us to use the results from a survey on the ‘Essentials of Life’ (henceforth, ‘the survey’) which was administered in three locations in South Africa in 2001. A central aim of the survey was to select dimensions and critical levels which are relevant to judging deprivation in terms of ‘basic capabilities’. Our methodology connects the literatures on vagueness and the capability approach with work on the perceptions of the poor and ‘subjective’ poverty lines (Narayan et al, 2000, Colastanto, Kapteyn and van der Gaag, 1984 and Pradhan and Ravallion, 2000 *inter alia*). It is also informed by Stephan Klasen’s application of the capability approach in the South African context (Klasen, 1997 and 2000). We compare our methodology and results with Klasen’s throughout the paper to highlight the distinctiveness of our approach. Finally, we consider one potential objection to our methodology which focuses on the worry that deprived groups can adapt to their living conditions and that their responses can be misleading for this reason.

The paper is structured as follows: in section 1, we explain the framework; in section 2 related work on South Africa is discussed; in section 3, we describe the survey and fieldwork methodology; in section 4 we relate the survey results to the framework; section 5 focuses on the nature and extent of core poverty; the issue of adaptation is addressed in section 6; and section 7 concludes.

1. Core Poverty and Vagueness

There have recently been various attempts to develop a framework which allows for the vagueness of poverty (Cerioli and Zani, 1990, Cheli and Lemmi, 1995, Chiappero-Martinetti, 1994, 1996 and 2000, and Qizilbash, 2002 and 2003). Amongst these attempts, Qizilbash’s framework is distinct because it involves two kinds of

vagueness. The first of these is ‘horizontal vagueness’, which relates to vagueness about the dimensions of poverty. For example, if poverty is thought of in terms of a failure to meet basic needs or to realize ‘basic capabilities’, there may be some imprecision about which needs or capabilities are ‘basic’. The second kind of vagueness – ‘vertical vagueness’ – is about the minimal critical level in some dimension at or below which someone must fall to classify as poor in that dimension.¹

In developing a framework which allows for these two types of vagueness, Qizilbash takes his inspiration from Kit Fine’s (1975) ‘supervaluationist’ account of vagueness. In the context of poverty, this involves allowing for a set of ‘admissible’ specifications of poverty. On Fine’s account, a specification of poverty is ‘admissible’ if (roughly speaking) it *makes sense* as a way of articulating the notion of poverty. Furthermore, on this account, a vague statement is ‘super-true’ if and only if it is true on all admissible ways of making it more precise. In the poverty context, for example, ‘x is poor’ is super-true if and only if x is poor on all admissible ways of making ‘poor’ more precise. Since this is a stringent requirement for someone to classify as poor, anyone who is poor in this sense is ‘core poor’.² Given the multi-dimensionality of poverty, judging whether or not some person (household) is core poor involves two steps. Firstly, a person (household) is *definitely* poor in some specific dimension if she (it) falls *at or below* the lowest admissible minimal critical level in that dimension. This is not in itself sufficient to establish that the relevant person (household) is core poor. For person (household) x to count as ‘core poor’, it must also be true that she (it) must be definitely poor in a ‘core dimension’ – a dimension that is part of all admissible specifications of poverty.

An important characteristic of this approach is that if some person (household) is doing sufficiently badly in terms of any one dimension, she (it) is core poor, as long as

that dimension is core. For example, if nutrition is a core dimension, someone who is very seriously malnourished would count as core poor, and we could make this judgement without checking how she is doing on all dimensions. This is a plausible feature of the approach, and it involves taking a view on an important debate about how to deal with the multi-dimensionality of poverty.³ An alternative approach would only classify a person (household) as unambiguously poor if she (it) is judged to be definitely poor in terms of all dimensions.⁴ Information on all core dimensions is necessary, nonetheless, if we want to estimate the headcount ratio index of core poverty (i.e. the proportion of the population which is core poor). To see why, consider two alternative scenarios, involving only two core dimensions, d_1 and d_2 . In the first scenario, 15% of the population fall at or below the lowest minimal critical level on both d_1 and d_2 , while no individual (or household) falls below the minimal critical level on only one of these dimensions. The headcount index of the core poor is 15% in this scenario. In the second scenario, while it is still the case that 15% of the population falls below the minimal critical level on each of d_1 and d_2 those who are definitely poor on d_1 and d_2 are mutually exclusive. In this second scenario, the headcount index is 30%. Without knowledge of the overlap between those individuals (households) who (that) are definitely poor on d_1 and d_2 , we cannot distinguish between the two scenarios.

2. Related Work on Poverty in South Africa

There is now a considerable literature on poverty in South Africa. In this section, we focus on two relevant contributions. In an attempt to allow for vagueness which is informed by Sen's capability approach, Qizilbash (2002) applied fuzzy set theoretic measures with data from the 1996 South African Census. While no attempt was made to examine 'core poverty', inter-provincial rankings relating to 'definite poverty' in specific

dimensions for the provinces of South Africa were presented. Somewhat arbitrary judgements were made about the choice of dimensions and critical levels used in applying fuzzy measures. The same general issue of arbitrariness arises in much of the related literature including Klasen's attempt to apply Sen's capability approach. This approach involves two foundational concepts: 'capability' and 'functioning'. For Sen (1993, p. 31) a person's life is constituted by various 'being' and 'doings' or *functionings* and her capability is the set of lives from which she can choose one. Poverty is seen in terms of a shortfall of 'basic capabilities' or 'basic capability failure'. Such failure involves the inability to achieve certain minimally adequate levels of crucially important functionings (Sen, 1993, p. 41), such as being nourished and being sheltered. Sen explicitly relates the relevant functionings to 'basic needs' (Sen, 1993, p. 40).

Since we compare our methodology and results with Klasen's, we describe his work in some detail here. Klasen uses indices relating to fourteen 'components' of poverty which are related to basic capabilities. His choice of indices is motivated by data from the 1993 Project for Statistics on Living Standards and Development (PSLSD) undertaken by the Southern Africa Labour and Development Research Unit (SALDRU). His estimates of poverty and deprivation also use these data. Interestingly, Klasen includes 'perceived well-being' as one of the dimensions related to capability, whereas data on this indicator is usually used to measure happiness (Easterlin, 1974, Oswald, 1997 *inter alia*) rather than capability. Nonetheless, Sen (1993, pp. 36-7) does treat the ability to achieve happiness as a valuable capability, and to this degree Klasen's approach is consistent with Sen's writings. However, it is not at all obvious that this capability is 'basic'.

The indices that Klasen (2000, p. 41) uses, and the rank order numbers he assigns to levels of achievement in terms of these indices, are shown in Table 1. For illustrative purposes, consider the first row in Table 1 which relates to the average educational attainment of household members. In this case, rank orders are assigned so that: less than two years of education is given a rank order of 1; between 3 and 5 years of education is given a rank order of 2; and so on. Similar exercises are carried out for the other indicators. While Klasen notes difficulties with ranking some categories, he suggests that the 'scoring is quite intuitive and unlikely to stir much debate' (Klasen, 2000, p. 39). Each household is assigned a rank order score on the basis of its achievements in each dimension. Klasen's deprivation index is an unweighted average of a household's rank order scores.⁵

Klasen goes on to classify households as more or less deprived on the basis of their score on these indices. Using the worst-off 40% in terms of these indices yields a cut-off average rank order score of 2.9 for 'deprivation' and applying the worst-off 20% gives a cut-off average rank order score of 2.4 for the 'most deprived'. Since Klasen thinks that a score of below 3 signals basic capability deprivation in any dimension, he associates the 2.9 cut off line with Sen's notion of poverty.⁶

While Klasen's work makes no attempt to address vagueness, his approach to multi-dimensionality differs from that outlined above. Firstly, Klasen takes a household to be deprived if it falls below the relevant cut-off in terms of an average of rank order scores across the various dimensions. By contrast, in Qizilbash's framework a person (household) can count as core poor if she (it) is doing badly enough in terms of any *one* dimension, if that dimension is considered core. It does not matter, in this framework, if the relevant person or household is doing better on other dimensions, so that the average

rank order score is high enough to cross some average of relevant deprivation thresholds. Since the survey provides information on many of the indicators used in Klasen's study, we can contrast the selected indicators, thresholds and estimates which follow from our methodology with his. However, to apply the framework we also need an approach to defining the range of admissible critical levels and identifying core dimensions. The approach we adopt in this paper uses survey responses along the lines developed in related work by David Clark (2002 and 2003).

3. The Survey: Background, Methodology and Key Results

In June and July 2001 a survey was administered in three locations in South Africa to investigate how ordinary people view the essential things in life. An effort was made to select survey sites that are fundamentally different in terms of culture, race and occupation to generate useful comparisons. The first area, Kwanonqaba, is a township adjacent to Mossel Bay in the Southern Cape region of the Western Cape Province. At the time of the survey, the township consisted of around 8,300 people most of whom are classified as Black African.⁷ Those with jobs were mostly employed as wage labourers.

The second location, Murraysburg, is a magisterial district on the cusp of the Northern, Eastern and Western Cape Provinces.⁸ It consists of a small town and sparsely populated countryside and farmland. The town accounts for the bulk of Murraysburg's population (of about 5,900 people in 2001), which is predominantly Coloured with small Black African and White minorities. At the time of the survey, unemployment was high and many local people were forced to migrate to find work. Those fortunate enough to find work in Murraysburg itself were typically employed as domestic servants, contractors, farm labourers or municipality workers (Dokter, 1996, p.3).

The third area, Khubus, is a small isolated village situated in the Northern Cape on the banks of the Orange River, overlooking Namibia. In 2001 around 800 people were living in the village, most of whom were the descendants of the aboriginal Nama people. Virtually the whole population was classified as Coloured for official purposes. The majority of people with jobs were either working in the diamond mines of the Richtersveld or grazing sheep and goats to make a living.

The principal aim of the questionnaire was to find out which needs and capabilities ordinary South Africans think are basic, and where they draw the line between the poor and non-poor in specific dimensions. Responses to the questionnaire are highly relevant to the framework described in section 1, since they provide information about the dimensions of poverty and the critical minimal levels in each dimension. Most poverty surveys are concerned with people's living conditions rather than with what people think the essentials of life are. While some of these surveys include a question on the priorities of life, such questions are usually regarded as supplementary. For example, the PSLSD questionnaire asked: '[w]hat in your opinion could government do to most help this household improve its living conditions? In other words, what do you need most?' (PSLSD, 1994, p. 288). Respondents were asked to name three items and to rank them in order of importance. Responses to such questions are helpful but exclude concerns that lie outside the government's sphere of influence. They are also likely to under report those basic needs that are already satisfied. In short, this question encourages people to provide a 'wish list'. Answers to this question justify the selection of indices which proxy for basic capabilities in Klasen's study (2000, pp. 38-9). To elicit a more complete information base, the survey questionnaire asked respondents to think about the 'most basic aspects of life'. These were described as 'the

bare essentials without which A PERSON cannot *cope or manage at all* and without which *life is unbearable*' (SALDRU, 2001, p. 2). Respondents were reminded that 'these can be aspects of life that people have, or don't have and need' (SALDRU, 2001, p.2). While some studies have asked people to define the characteristics of poverty (e.g. Moller, 1996, SA-PPA, 1998 and Narayan et al, 2000), participants have not generally been asked to abstract from their own situations.

As the main objective of the survey was to investigate the components of a minimally decent life (i.e. the crucially important functionings relevant to basic capability) rather than some higher standard of living, interviewers asked people about the level of achievement in terms of the 'basic aspects of life' required to 'get by' as opposed to that required to 'live well'. To ensure that respondents fully appreciated the significance of these two levels they were repeatedly required to distinguish between them during the course of the interview. The questionnaire was divided into three main parts. Part one consisted of open-ended questions that asked respondents to identify the most basic aspects of life. Respondents were then invited to weigh the aspects they mentioned (by giving a mark out of ten) and to suggest minimal critical levels in terms of these aspects which were necessary to 'get by' and 'live well'. Interviewers were instructed not to suggest possible answers. Part two of the questionnaire asked respondents questions about more 'specific aspects of life, such as housing, education, jobs and health' (SALDRU, 2001, p.5) which were pre-defined. It asked them to endorse or reject these predefined dimensions and select specific cut-offs relating to them. The final part of the questionnaire collected background information regarding personal circumstances and living conditions. The design, wording and translation of the questionnaire were informed by the results of previous studies (e.g. Wilson and

Ramphela, 1989; PSLSD, 1994; Moller, 1996; SA-PPA, 1998; Clark, 2002 and 2003) and issues raised by experienced local researchers and interviewers at brain storming sessions in Cape Town.⁹ The methodology of using two kinds of question – one of which is open-ended and the other involving predefined aspects of life – is in line with the approach adopted by Clark (2002 and 2003). This procedure allows researchers to avoid influencing initial responses (by asking purely open-ended questions at the start), look for consensus (by requesting an assessment of pre-defined needs or capabilities from all people) and test for inconsistencies (by comparing the answers to open and pre-defined questions) that might reflect preferences which are ill-informed or have adapted to personal circumstances.

A balanced sampling frame was employed to ensure that each survey area was properly represented. Random sampling techniques were used for the selection of households and suitable respondents. In each location households were listed by enumerator area (EA) prior to selection. Sample intervals were then calculated by dividing the total number of households in each area by the number of questionnaires allocated to that area. The first household in each EA was selected randomly. Interviewers then proceeded to visit every *n*th household, where *n* represents the sample interval.¹⁰ One person was selected from each household visited using a table developed by Kish (1995, pp. 398-401), which is designed to ensure that the age and gender skew of the sample drawn match the characteristics of the local population. When the selected respondent was unavailable, no other member of the household substituted for him or her.

A total of 941 people aged 18 or over made up the survey sample (see Table 2).¹¹ The sample was split unevenly between the three survey sites as follows: 568 interviews in Kwanonqaba (60.4% of the total sample); 313 interviews in Murraysburg (33.2% of

the sample); and 60 interviews in Khubus (6.4% of the sample). In Murraysburg 297 interviews were completed in the town (31.6% of the sample) and a further 16 interviews (1.7% of the sample) were completed on the surrounding farms. Overall the sample consisted of slightly more women (52.7%) than men (47.3%). The respondents could be classified in terms of the racial categories used in South Africa as follows: 61.4% Black African; 34.5% Coloured; 0.1% Indian/Asian; and 1.4% White.¹² In Kwanonqaba and Khubus the sample was skewed in favour of young people. In Murraysburg the sample was skewed towards middle aged and older people (see Table 2). The sample is, nonetheless, broadly representative of the population in the survey areas, though a strict comparison with 2001 Census statistics (which were not available at the time of the survey) suggests that people in the 18-24 and 25-34 age cohorts (who accounted for 51.6% of the adult population in the survey areas) may have been under-represented.

Tables 3 and 4 summarize some key survey findings. Table 3 presents an ordinal ranking of answers to the open-ended question about the basic aspects of life. Each response was assigned to one of thirty different categories, which are ranked in Table 3. In this table, 1 is the rank of the response that received most mentions, 2, second, and so on. If two or more items have the same number of mentions, they are given the same rank.¹³ Several items ranked in Table 3 can be thought of as distinct *components* of well-being, though sometimes the items are interrelated (e.g. blankets and heat) and some of them (like income) relate primarily to means, rather than the ends these help people to realise (such as respect). It is worth emphasizing that people defined these items without *any* external assistance or interference, which makes them strong candidates for inclusion in any framework for identifying the poor.

Table 3 indicates that 'housing/shelter' category is mentioned by the largest proportion of people followed, in order, by: food; water; work/jobs and; money/income. Each of these items was mentioned by well over 400 respondents (i.e. over 42.5% of the survey sample). Clothing, education, health, electricity and safety also received a large number of mentions (well over 100 each). Only a handful of people mentioned the last ten items in Table 3. Several items at the top of Table 3 relate to the goals of South Africa's Reconstruction and Development Programme (RDP). This suggests that responses may have been influenced by political factors (Clark, 2002 and 2003). Responses to the second part of the questionnaire – which involve an evaluation of predefined categories – may give us a more complete picture, and help to iron out the distortions which can emerge from such incentives. Table 4 summarises the relevant responses. Virtually all the prominent categories in Table 3 were covered in one form or another in the pre-defined list. So the predefined categories do cover the items which emerged when respondents themselves defined the basic aspects of life. Finally, the last column in table 4 suggests that almost all the predefined dimensions were given, on average, a similar weight.

4. The Selection of Core Dimensions and Admissible Critical Levels

There remains the issue of how to relate the survey results to the conceptual framework outlined above. Some hints on how one might do this can be found in the writings of Max Black (1937). Black thought that in cases of vague terms, various people specify the relevant term in different ways. The degree of ambiguity about the use of the relevant terms might then be measured by the extent of assent or dissent about its use by those who use it (Keefe and Smith, 1996, p. 40). Following this line of thought, one might judge that a dimension of poverty is core if there is little or no dissent about it

being a dimension of poverty. Similarly we might judge that a dimension is admissible if even a small proportion of people see it as a dimension of poverty. In the framework described above, however, a dimension counts as core if it is part of *all* admissible specifications of the poverty concept. If we were to use Black's insight in conjunction with the supervaluationist framework discussed above a natural criterion for a dimension to meet would be unanimity about it being a dimension of poverty. Thus we might require 100% endorsement by the sample population for a dimension to count as core. This effectively involves treating all those interviewed as having a 'say' about what constitutes a meaningful notion of poverty, and treating a dimension as non-core if *anyone* failed to endorse it. It involves the assumption that everyone interviewed was, in effect, attempting to articulate their notion of poverty and that there were no errors in the interviewing process.

On this reading none of the items in Table 4 would classify as 'core' despite the fact that many of these items were endorsed by virtually everyone. The fact that very small numbers of people fail to endorse certain dimensions (e.g. health, clean water, etc.) does not, however, constitute a compelling case for regarding such items as non-core. It is sensible to allow for some margin of error in the interviewing process and to allow for at least a tiny proportion of answers which can be excluded. A small number of answers might be excluded, even in the absence of errors in the interview process, because the framework is concerned with lack of ambiguity, and virtual unanimity, rather than endorsement by everyone interviewed can establish this.

These considerations suggest that we might treat a dimension as core even if a relatively small proportion of respondents – say 1% or 5 % of the survey sample – fail to endorse it. 'Relatively small' is clearly somewhat vague itself, and 1% and 5% suggest

themselves because they are salient. Nonetheless, 10% – which may not seem ‘relatively small’ to some – is also one possible salient way of defining ‘relatively small’. One might, thus, judge that a dimension is core if 99%, 95% or 90% of those who were interviewed, or those who responded to the question, endorsed it. A 99% rule still leaves us with no core dimensions if we look at the full sample (see Table 4). However, a 95% rule does identify various dimensions. Going further and using a 90% rule leads to the result that virtually all the dimensions listed are core. This seems rather implausible, and the 90% rule does not help to distinguish core from non-core dimensions. Of the salient criteria, the 95% rule is thus the most suitable for the purposes of implementing the framework and we adopt it in this paper. It might be argued that the use of this rule is arbitrary. Yet there seems to be no stronger justification for the use of any particular rule, in the present context, other than the fact that it is the only salient rule that adequately distinguishes core and non-core dimensions.

The 95% rule may be sensitive to the manner in which it is interpreted. Here are four ways of making the 95% rule more precise: (1) endorsement by at least 95.00% of those (a) interviewed or (b) who responded; and (2) endorsement by at least 94.50% of those (a) interviewed or (b) who responded. Rules 2(a) and 2(b) imply that if the proportion of endorsements of a dimension is at least 95% when numbers are rounded up the dimension is core. These are suitably ‘relaxed’ versions of the rule, and given our general concern with imprecision, they are used in the remainder of the paper. It is not obvious, however, whether to opt for 2(a) or 2(b). If we opt for rule 2(a), it is clear from Table 4 that twelve dimensions are core: clean water, health, access to health care,¹⁴ housing, jobs, education, freedom, nutrition, safety, self worth and respect, survival and

religion. Rule 2(b) actually yields exactly the same list. To this degree, the selection of core dimensions is robust.¹⁵

Table 5 gives the breakdown of the responses according to location. It shows that in the smaller sub-samples – Murraysburg and Khubus – a relaxed 100% version of rule 2(b) – i.e. one which would treat a dimension as core if it was endorsed by 99.50% or more of the sub-sample which responded – selects various core dimensions. For Murraysburg they are: clean water, health, housing, nutrition, jobs and religion. In the case of Khubus they are: access to health care, clean water, education, family and friends, freedom, nutrition, religion, safety, self-worth and respect, economic resources and survival. The larger Kwanonqaba sub-sample does not, however, produce any core dimensions with a relaxed 100% rule, or even with rule 2(a). Indeed, only three dimensions – housing, education and clean water – pass the test using rule 2(b) on this sub-sample. It is not clear how far this difference relates to the nature of the locations – Kwanonqaba is urban, whereas Murraysburg and Khubus are rural – rather than the quality of the data.¹⁶ It is clear, nonetheless, that despite some variation across the regions, some items appear repeatedly on these lists. Furthermore, virtually all the relevant items are among the twelve selected by rules 2(a) and 2(b) when they are used with the full sample. This suggests that these rules are credible, and we treat these twelve items as core for the remainder of the paper. Notice that much the same set of dimensions classify using rules 2(a) and 2(b) when the sample is broken down in terms of gender. Table 6 gives the gender breakdown of responses. It is surprising that ‘economic resources’ only appears in one of the lists just presented. Finally, a happy and carefree state of mind does not appear on any of these lists. This suggests that the ability to ‘be

happy' is not a basic capability (at least as long as happiness is seen in terms of mental states).

If we use a relaxed 95% rule for a dimension to be core – thus excluding up to 5% of respondents – consistency suggests that we ought to use a 'relaxed' 5% rule – which requires endorsement by at least 4.50% of the sample – for admissibility of critical minimal levels. However, the case of admissibility of critical minimal levels is more complex than that of core dimensions. This is because the survey questionnaire asked people what was needed to just get by. The level at which one is definitely poor must, thus, fall *below* the lowest level to get an endorsement of at least 5%. However, in the framework outlined in section 1, the lowest admissible minimal critical level in a dimension is that *at or below* which a person is definitely poor. So the notion of admissibility involved in using the 5% rule is subtly different to that involved in the framework when it comes to the lowest admissible critical level.

In this case, as with the 95% rule, there is also the issue of whether to use 5% of those interviewed, or 5% of those who responded. It turns out that both alternatives give the same results. To see how the 5% rule works, consider Table 7. This shows the proportion of people interviewed who endorsed a specific level in terms of some indicator. With the exception of perceived well-being, sanitation facilities and energy source for cooking, the indicators chosen relate exclusively to dimensions which have been identified as core. In Table 7, all those levels which have been shaded satisfy the relaxed 5% rule. Consider, for example, a case where there is a clear horizontal band of grey: years of schooling. In this case, our methodology implies that only someone with no schooling is definitely poor.

In some cases, use of the 5% rule results in apparent anomalies. For example, in the case of sanitation (toilet facilities) the 5% rule implies that a bucket or latrine is admissible but that an improved pit latrine or chemical toilet is not. In cases where the ordering of categories is well defined, it makes sense to use an 'adjusted 5% rule' which treats categories as admissible even when they score less than 5%, if they lie between the lowest and highest admissible minimal levels as defined by the 5% rule. Using the adjusted 5% rule, the category 'improved pit latrine or chemical toilet' would automatically qualify. Similarly in the case of water source, if, as seems plausible, we can rank a borehole, well etc. above a dam or standing water, the adjusted 5% rule implies that access to a protected spring, well or borehole (which does not qualify using 5%) is admissible.¹⁷

While the use of the 5% rule for admissibility is consistent with the use of a 95% rule for a dimension to count as core, it is worth considering alternative rules for admissibility. Salient alternatives would treat a critical level as admissible if it were endorsed by 1% and 10% (interpreted in the same 'relaxed' manner as before) of those who responded. The implications of using these rules are clear from a brief inspection of Tables 8 and 9. They are unsurprising. The use of a 1% rule means that virtually all levels are admissible, so that virtually no-one would count as definitely poor in the relevant dimensions. Only the homeless would count as definitely poor in the dimension of housing and those without any form of toilet at all would count in the dimension of sanitation. On the other hand, the use of a 10% rule means that many groups which do not qualify under the 5% rule would qualify as definitely poor in specific dimensions. For example, anyone who does not have a flush toilet (either inside the house or outside the house) would qualify as definitely poor as regards sanitation. This is surely too

permissive. Like the 95% rule, the 5% rule yields results which are more plausible than salient alternatives.

The lowest admissible cut-offs implied by the survey results with the 5% rule are quite different from those used in Klasen's work, which involve a rank order score of 3 in Table 1. The survey results do, nonetheless, sometimes support Klasen's choices, when combined with another rule. Consider a rule which selects the crucial critical minimal level as the category which achieves the *highest* level of endorsement.¹⁸ In Table 7, this category is indicated for each dimension with an asterisk. Of the dimensions presented in Table 7, access to health care and energy source for cooking are ones where the cut-off Klasen uses is selected according to this rule. In some cases – such as toilet facilities and water source – the category which is endorsed by the largest proportion of people falls *above* a rank order score of 3 in Table 1. So it is the particular framework we employ, and the choice of the 5% rule that leads us to such a low 'bottom line' for 'definite' poverty in various dimensions.

5. The Nature and Extent of Core Poverty

In this section, we restrict our attention to the twelve core dimensions. This means that we exclude a number of indicators (including income and perceived well-being) which were used in Klasen's study. Since we are interested in various different ways of applying the capability approach and in comparing the implications of our methodology with Klasen's, we focus on the 1993 PSLSD data. These data can be used in conjunction with the survey results for indicators relating to: the type of housing; the source of clean water; access to health care; educational attainment; and jobs.¹⁹ In particular, Table 7 suggests that a number of groups might classify as definitely poor in these dimensions, so

that they are core poor. These include: the homeless; those living in traditional dwellings; those with no access to water at all; those with no education; and the unemployed.

How widespread was core poverty in 1993 if we restrict attention to these groups? The core poor would include the 17.7% of South Africans with no access to health care. As regards housing, those living in shacks would *not* classify as core poor. Furthermore, since there were no homeless people in the PSLSD sample (which was restricted to residences), only the 10.3% of households living in traditional dwellings might count as core poor. It is not obvious, however, whether we should treat this group as core poor. On Klasen's ordering of the various levels of disadvantage, it is classified as better off than those living in shacks. That suggests that they should not count as core poor. Yet one may want to allow for the possibility that those living in traditional dwellings are core poor, given that some such dwellings are worse than shacks.

In terms of water source, our methodology suggests that only those with no source of water at all (even from a dam or standing water) count as core poor and this group is not picked up in the PSLSD survey. It also suggests that the 14.7% of South Africans with no schooling are core poor. Finally, as regards jobs, 30.1% of the workforce was unemployed (if one includes 'discouraged workers'). This estimate relates to individuals rather than households. In the PSLSD data, the proportion of households with no adult member in employment is 27.4%, while Klasen (1997, p. 71) estimates that in 29.5% of households there was 'nobody working'. Finally, in Klasen's classification (in Table 1) households with 0-19% of adult members in work are the most disadvantaged. In 1993, 31.5% of households fell into this category. While it is not easy to choose between these estimates, 30% is a plausible rough estimate of core poverty for households in this dimension.

Nutrition is also a core dimension. We have not discussed this dimension, since no question in the survey related to the standard anthropometric measures of under-nourishment. Nonetheless, it might be argued that those who are classed as seriously malnourished according to such measures should be counted as core poor. The PSLSD data does contain information on a measure of ‘stunting’ (PSLSD, 1994, p. 280). According to this data about 25.4% of South Africans were chronically malnourished in 1993.

While we are primarily concerned here with the disaggregated picture of poverty across the various dimensions, it is interesting to ask whether the use of our methodology implies a very low headcount index of core poverty because it implies such low cut-offs. In particular, does our methodology lead to a much lower estimate than Klasen’s estimate of the most deprived? Estimating a headcount index of the core poor is riddled with difficulties. The chief problem lies in the fact that in some dimensions (such as access to health care, undernourishment and educational qualifications) the data relate to individuals, while in other cases (such as water source and type of dwelling) the data relate to households. In rare cases (such as employment), data are available for both households and individuals. Issues about multi-dimensionality which are relevant to arriving at a headcount index of core poverty were discussed in section 1, and these also pose problems. In combination, these difficulties mean that providing a headcount index of core poverty is beyond the scope of this paper. Nonetheless, a lower bound estimate of core poverty is implied by the disaggregated picture, since all the estimates given above are of groups who were core poor. A lower bound estimate of core poverty amongst households would thus be the highest headcount index for the specific core dimensions listed. The highest such index relates to unemployment, and it stands at roughly 30% for

households. Even though this is a lower bound estimate, it is nonetheless considerably higher than Klasen's estimate of 25.4% 'most deprived' households. It is also higher than the estimated headcount index of 'ultra-poor' households (defined as those in the lowest quintile of the distribution of adult equivalent expenditures) for 1993, which stood at 28.8% (Klasen, 1997, p. 56). So while our approach implies lower cut-offs for definite poverty than Klasen's thresholds for basic capability failure in specific dimensions, it implies a higher lower bound estimate of core poverty for households than estimates of the 'most deprived' and the 'ultra-poor'.²⁰ This is a surprising result, though it is easy to see how it follows from our methodology.

It might be argued that the picture of core poverty implied by our methodology is not robust. This certainly is true. In particular, we have already seen that if a 99% rule were used for the selection of core dimensions, none would be selected so that there would be no core poverty. Equally, if a 90% rule were used virtually all the dimensions listed in Table 4 would be core and many groups which do not classify as core poor under the 95% rule would be so classified. Similar observations can be made about the use of alternative rules (such as the 1% rule and a 10% rule) for the selection of critical levels. However, it is easy to check that whichever of these rule is used for critical levels, those living in shacks are not core poor. That is a robust result. The homeless are also definitely poor irrespective of which rule is used. Nonetheless, given the lack of robustness of some of the results, our justification of the use of 95% and 5% rules is particularly important.

6. Adaptation

One serious worry about our methodology relates to the possibility of adaptation. This worry is of particular importance in the context of this paper, since advocates of the capability approach see adaptation as a problem for *alternatives* to that approach. Sen

often argues, for example, that desire satisfaction and happiness views of the quality of life are unreliable because severely deprived groups might adjust to their living conditions and sometimes learn to be happy or satisfied with those conditions (Sen, 1987, 45-46, 1992, 6-7 and 1999, 62).

Inasmuch as our work is informed by the capability perspective and is concerned with basic capability failure, this worry must be addressed. In the context of the survey, in particular, it might be argued that respondents may simply have become accustomed to their living circumstances, and were happy or satisfied with these circumstances even though they were seriously deprived. This argument might be made in relation to those respondents who endorsed the category of ‘traditional healer, family member or friend’ in the dimension of health care. Similarly, it can be argued that only those who are genuinely poor and have become accustomed to their poverty would think that a shack is enough to just get by. These arguments challenge our methodology for selecting core dimensions and admissible critical levels on the basis of questionnaires administered in deprived areas. They might also undermine the case for ‘listening’ to the poor in forming a qualitative picture of poverty and in formulating poverty eradication policy more generally. Similar objections can be levelled at studies of ‘subjective’ well-being and ‘subjective’ poverty lines.

There are at least three distinct, albeit crude, ways of testing for adaptation using the survey results. The first involves comparing the responses to open and closed questions – in line with the methodology outlined in section 3 – in order to see if respondents systematically changed their view of the essentials of life or whether they raised their aspirations after some alternatives were suggested. The results of this exercise suggest that deprivation did not significantly diminish aspirations, as most respondents

could imagine the defining features of a minimally decent form of life (compare the results summarised in Tables 3 and 4).²¹

The second way of testing for adaptation involves asking whether *all*, or an *overwhelming majority* of those who endorsed categories such as a shack or a traditional healer were themselves living in very straitened conditions in the relevant dimension. If this were true, then the endorsement of particularly low thresholds would indeed be a worry. However, it turns out to be false in the case of two dimensions for which data was available. In fact, in the case of shacks over half (52%) of those who endorsed this category were living in a house, while 45% were living in shacks. Of those who said that a traditional healer was enough to get by, 51% had received no health care at all during their last illness. Nonetheless, 39% had used a public hospital, clinic or shop during their last illness. Our results thus suggest that on this way of checking for adaptation – which is particularly relevant to our results – there is none.

The third, more general, way of testing the adaptation hypothesis involves checking whether people living in deprived conditions are satisfied with their living conditions. Unfortunately, relevant information about respondents' level of satisfaction was only recorded in Murraysburg and Khubus. It is fairly easy to establish on the basis of the questionnaire responses that these would be classified as deprived communities on the basis of most standard indicators. In Murraysburg, 19% of respondents had never been to school, 39% were unemployed, and around 33% of respondents did not have access to health care during their last illness. In Khubus, while only 1.67% of respondents had never been to school, 37% of them were unemployed and 53% of them had no access to health care during their last illness. Yet the level of satisfaction in these communities was remarkably high. In Khubus around 73% of respondents were either satisfied or very

