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A Mixed-method Taxonomy of Child Poverty: A Case Study from Rural Ethiopia

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Abstract

In this paper, we use mixed methods to develop a taxonomy of poverty and vulnerability to study the situation of children and their households in rural Ethiopia over time. The taxonomy is built using qualitative data from Young Lives, a long-term study of childhood poverty, with the specific purpose of analysing the context of children's life trajectories. The approach aims to yield insights into changes over time as well as to reflect multiple dimensions and consider issues of current well-being and future 'well-becoming'. It potentially allows for the identification of underlying mechanisms that influence and determine life trajectories. Until recently, quantitative and qualitative approaches towards the analysis of chronic and transient poverty have developed in isolation with little cross-disciplinary interaction. In this paper, we add to this body of research by using a mixed-method approach to develop a hybrid taxonomy of child poverty and well-being that can be used for a dynamic analysis. The paper also complements existing research and evidence on child poverty and well-being in the context of Ethiopia.

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About Young Lives

Young Lives is an international study of childhood poverty, following the lives of 12,000 children in 4 countries (Ethiopia, India, Peru and Vietnam) over 15 years. www.younglives.org.uk

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1. Introduction

The academic debate about the measurement of poverty and well-being, and the concurrent classification of households and individuals by poverty status, is long-standing. Monetary poverty measures have dominated the discourse since the beginning of the 20th century. Multidimensional measures gained momentum with Sen's seminal work on the capability approach in the 1970s and Streeten's basic needs approach in the 1980s (Sen 1992; Streeten 1981). It is now well-recognised that the measurement of poverty should go beyond the measurement of mere economic resources or purchasing power and should include indicators reflecting other areas of well-being. Child poverty and vulnerability are clearly multidimensional and more time-sensitive than adult poverty as childhood presents a unique window of opportunity for physical, cognitive and social development. Failing to provide a material and relational environment that supports this development can have long-term adverse consequences (Brooks-Gunn and Duncan 1997). However, awareness of future effects, including the potential for the intergenerational transfer of poverty, should not divert attention from children's current experiences and the way that these differ by age and gender (White 2002). Children's needs and values, and their levels of autonomy relative to adults, differ according to their life stage (Sabates-Wheeler and Roelen 2011) and this needs to be reflected in measures of poverty, vulnerability and well-being. Finally, even where households appear to be prospering, there is no guarantee that the benefits will be evenly distributed or that children's time will be protected.

Since the beginning of the 2000s, the use of mixed methods such as wealth rankings combined with surveys to assess and understand poverty have gained considerable traction within debates on poverty measurement and policy analysis. It is now widely acknowledged that the combined rather than exclusive use of quantitative and qualitative data can deepen our understanding of issues pertaining to poverty and deprivation (Kanbur 2003; Kanbur and Shaffer 2007). The combined use of quantitative and qualitative information, also referred to as the Q-squared approach,¹ has been and is being applied in various forms in an expanding body of research (e.g. Adato et al. 2004; Levine and Roberts 2007, Roelen and Gassmann 2011). Davis and Baulch (2011) point out that the different reflections of poverty offered by assessments based on either quantitative or qualitative information should be welcomed rather than cause alarm as, in combination, they offer profound insights into the complex reality that situations of poverty present.

In this paper, we aim to use mixed methods to develop a taxonomy of poverty and vulnerability to study the situation of children and their households in rural Ethiopia over time. In other words, qualitative information is used to inform the decision-making processes around appropriate quantitative indicators and thresholds for the analysis of poverty and vulnerability. The use of both quantitative and qualitative information to assess poverty *dynamics* rather than provide a static picture can be considered a particular area of interest within mixed-methods research. In fact, Addison et al. (2009) suggest that progress needs to be made on three fronts if we are to improve and deepen our understanding of poverty: cross-disciplinary research, research on the dynamics of poverty and research on the multidimensional nature of poverty.

1 The term 'Q-squared' was coined by economist Ravi Kanbur at a workshop in 2001, Combining Qualitative and Quantitative Approaches in Poverty Analysis (see <http://www.kanbur.aem.cornell.edu> for details of Kanbur's work).

This paper seeks to contribute to that effort by developing a taxonomy that is informed by both quantitative and qualitative information from and about children and adults and able to reflect multiple dimensions of poverty and vulnerability over a longer period of time. In another paper (Camfield and Roelen 2011), we use the new opportunities offered within the Young Lives dataset to analyse issues of child poverty and vulnerability from a longitudinal perspective using qualitative and quantitative data (see also Dercon 2012). Conclusions from this paper are largely methodological, pointing towards issues in longitudinal measurement of child poverty and the combination of methods for studying poverty dynamics.

2. Literature review

A wide range of studies on chronic poverty have been undertaken from both a quantitative and a qualitative perspective, although they have mostly been undertaken separately. Quantitative studies analysing the dynamics of poverty have relied primarily on the use of monetary poverty measures, with an increasing body of research on how to extend such measures to incorporate non-monetary indicators (see Addison et al. 2009). Panel data or, to a lesser degree, retrospective household surveys (surveys that ask people about their current as well as their past situation) are used to track changes over time. Qualitative studies are more participatory and use methods carried out (mostly) with adults, such as semi-structured interviews, life histories, wealth rankings and other group activities capturing people's understandings and experiences of poverty (see Addison et al. 2009 for examples).

While historically, quantitative and qualitative approaches towards the analysis of poverty dynamics have developed in separate silos, with little cross-disciplinary interaction, since the early 2000s there have been considerable efforts to combine them by the Chronic Poverty Research Centre (<http://www.chronicpoverty.org>), and as part of the 'Moving out of Poverty' study (e.g. Narayan and Petesch 2007). In the following section we look at the ways in which survey and focus group data on understandings of poverty have been integrated, before briefly summarising the conclusions of three participatory poverty assessments (PPAs) conducted in Ethiopia in 1999–2000, 2001–2 and 2004–5 to set the qualitative data used in this paper in context (Rahmato and Kidanu 1999; Sharp et al. 2003; Ellis and Woldehanna 2005).

How mixing methods can enhance and contextualise understandings of poverty

The epistemological benefits of combining qualitative and quantitative data, for example, mixing qualitative wealth rankings and quantitative household surveys by using wealth ranking data to design more accurate surveys, or using criteria generated through wealth rankings to select survey indicators for analysis, are widely acknowledged (e.g. Laderchi 2001; Appleton and Booth 2001). One example is the work of Barahona and Levy (2007) in Malawi, who combined participatory methods and statistical techniques to produce statistically representative and reliable national-level data on the performance of an agricultural intervention. There may be challenges, however, in combining methods coming from different epistemological standpoints. As Appleton and Booth (2001: iv) acknowledge 'the evidence is stronger that surveys and PPAs can enrich and/or explain each other's findings than that they can confirm or refute each other' as 'the two methods do different

things well and generate findings that are non-comparable'. A number of studies in sub-Saharan Africa and India, described below, illustrate the potential of integration.

Scoones's (1995) research in Zimbabwe found that although perceptions of wealth were highly correlated with livestock ownership, farm asset holdings, crop harvests and crop sales, there were some discrepancies which indicated that respondents' rankings were more complex and holistic:

Local rankings include a range of unquantifiable weightings and variables; these will not be picked up by a formal survey of assets and income levels, but are nevertheless important in understanding the nature of rural differences. For instance, prestige, respect, esteem, conduct, behaviour and local political influence may be significant in ranking a particular household and act to trade off against potentially lower asset or income levels. ... For example, households headed by mature or politically influential villagers were ranked higher and those headed by widows lower, regardless of their material circumstances (ibid: 85).

A similar point has been made by Laderchi (2001: 11), who states that even where correlations of rankings are high, the adoption of a single valued indicator might not capture local people's rankings because 'wealth or well-being evaluation takes into account, in fact, several indicators with an implicit evaluation of the trade-offs between achievements in one or the other'. Kozel and Parker (1999) used qualitative data from wealth rankings and other methods, collected from 30 villages in Uttar Pradesh and Bihar, to identify three categories of poor household – destitute, structural and 'mobile' poor – with different sets of assets and liabilities, and demonstrated that the causes of wealth and of social mobility were very different. McGee (2004) identified a divergence between the picture presented by the Uganda household survey data of falling poverty from 1992–7 and that of the Ugandan PPA of deteriorating well-being. She argued that this is primarily due to the survey's use of consumption as a proxy for poverty, because it cannot take into account perverse consumption increases such as medical treatment and food insecurity (a point made in Davis and Baulch 2011). The consumption measure also cannot capture the subjective experience of increasing market dependence and rising expectations (see also Lawson et al. 2003 who make a similar argument using panel data from 1992–9). Other examples of the combination of wealth ranking and survey data are provided by Carter and May (1999) and Hargreaves et al. (2007) in South Africa, Van Campenhout (2007) in Tanzania, Seeley et al. (1995) in Uganda, Howe and McKay (2007) in Rwanda, and Kebede (2009) in Kenya, Malawi, Tanzania and Uganda.

Understandings of poverty in Ethiopia

Understandings of how people perceive and experience poverty in Ethiopia have been enhanced by three participatory studies: the 1999–2000 and 2004–5 PPAs conducted nationwide and a study in Amhara region in 2001–2 in response to

an apparent contradiction between 'official' evidence from household surveys, that poverty in rural Ethiopia has fallen significantly since the early 1990s; against qualitative evidence from NGOs and other 'unofficial' sources that millions of people in the historically famine-prone north-eastern highlands are worse off and more vulnerable than ever (Sharp et al. 2003: x).

The main well-being criteria for participants from the six rural sites covered by the 1999–2000 Ethiopian PPA (Rahmato and Kidanu 1999) were owning land, livestock (oxen, cows, sheep, donkeys), having food security and being able to buy fertiliser. The very rich could afford to

lend money to the poor, while the poor worked as labourers for others or were too sick to work. Factors that pushed households downwards were drought, agricultural pests and declining productivity of land. The 2004–5 PPA noted the continued importance of agricultural land, livestock and food security (Ellis and Woldehanna 2005). Factors supporting upward mobility not mentioned in the earlier PPA were non-farm activities, ability to irrigate land and agricultural diversification (for example, into fruit and vegetables). Factors that pushed households downwards were the same as in 1999–2000, with a slightly greater emphasis on lack of labour and the age, health and gender of the household head, which led to sharecropping-out (for example, because of traditional restrictions on women ploughing).

The 2001–2 study in Amhara region (Sharp et al. 2003) used a stratified, multi-stage, random sample of over 2,000 rural households for a household survey and carried out qualitative research in nine sites. The qualitative research was used to explore local understandings of severe poverty and set cut-off points for indicators of poverty (for example, eating less than two meals per day or owning less than two *timad* of land). It identified a category of ‘destitute’ who were described as people who have no assets, who cannot meet basic needs, especially food. They are dependent on others for survival because they ‘have nothing to boil except water’ and are ‘on the “last” or bottom level of society’ (Sharp et al. 2003: 13).²

In the next section we describe the data and discuss the creation of measures/taxonomies to capture child poverty in developing countries to highlight the ways in which the paper can add to this body of research.

3. Data

The analysis uses Ethiopian data from Young Lives, a study of childhood poverty in four countries, with the specific purpose of analysing the context of children’s life trajectories. Three rounds of quantitative data and two rounds of qualitative data are now available for analysis, and enable researchers to follow the same two cohorts of children over a period of seven years. The first round of quantitative data collection took place in 2002 when children in the cohort under consideration for this analysis were 7–8 years of age. The second round of quantitative data collection took place in 2006 when the children were 11–12 years old and the third in 2009 when they were 14–15 years old. The Young Lives Ethiopian sample covers 20 sites in the ethnically based regions of Amhara, Oromia, SNNP (Southern Nations, Nationalities and Peoples Region) and Tigray, as well as in the capital, Addis Ababa. Together, these five regions cover different geographical characteristics, levels of development, urban/rural locations and population characteristics (Outes-Leon and Dercon 2008). Thirteen of these sites are classified as rural and it is these that form the basis of our analysis. There were 570 children in the sample in Round 3 (see Table 1).

² See also Sharp (2007) which focuses on the methodological implications of the study.

Table 1. *Sample size and composition in each survey round (%)*

	R1	R2	R3
Boys	52.1	51.9	52.5
Girls	47.9	48.1	47.5
Amhara	25.0	24.5	24.7
Oromia	24.9	24.7	24.6
SNNP	25.0	25.2	24.9
Tigray	25.0	25.7	25.8
Total (n)	599	584	570

Qualitative data was collected from children in three of the 13 rural sites in 2007, 2008 and 2009 (the latter was for a sub-study on social protection, vulnerability and social mobility). In this paper we use data from a group exercise with children on understandings of poverty conducted in 2008.³ Additional information on understanding poverty and on the factors that move households into and out of poverty was collected from children and adults in another four rural sites as part of fieldwork on social protection funded by the International Development Research Centre (IDRC) in Canada in 2008 (Emirie et al. 2009), and from adults in three of the same sites and an additional rural site in 2009 using Krishna's 'Stages of Progress' method (described in the next section). This means that we can draw on data from children and adults in eight rural sites in constructing the taxonomy. Table 2 gives full details of these data.

Table 2. *Description of qualitative data*

Respondents	Study/stage	Focus of research/method	Villages ^a	Regions
Children aged 13–14, n=20 (one focus group per site, with five participants)	2008 general qualitative fieldwork	Characteristics of poor and non-poor families; how families become poor or non-poor ('poverty tree' used as a visual aid)	Leki, Tach-Meret, Zeytuni	Amhara, Oromia, Tigray
Children aged 11–15, n=40 (two focus groups per site, with five participants)	2008 IDRC-funded study on the impact of social protection on children	Perceived fairness and relevance of criteria for wealth or poverty status in relation to inclusion within Productive Safety Net Programme (PSNP); ^b whether and how PSNP supports social mobility	Enkoy, Lomi, Weyn, Gomen	Amhara, Oromia, SNNP, Tigray
Adults, n=80 (four focus groups per site, with five participants)	2008 IDRC-funded study on the impact of social protection on children	Perceived fairness and relevance of criteria for wealth or poverty status in relation to inclusion within PSNP; whether and how PSNP supports social mobility	Enkoy, Lomi, Weyn, Gomen	Amhara, Oromia, SNNP, Tigray
Adults, n=28 (one focus group per site, with seven participants).	2009 sub-study on social protection, vulnerability and social mobility	How households move out of chronic poverty, which expenditures are the first to be made, how these affect children in the household. Asked to identify a poverty threshold and discuss this in relation to criteria for PSNP entry and 'graduation'	Leki, Tach-Meret, Zeytuni, Buna	Amhara, Oromia, Tigray

^a All names are pseudonyms.

^b The PSNP, which was introduced in 2005, aims to reduce household vulnerability, improve resilience to shocks, and decrease dependence on food aid. The programme has over 8 million participants and provides food or cash for work such as digging ditches, and direct support to a smaller number of households with no adult labour.

³ An exercise on understandings of well-being was conducted in 2007 (see Camfield and Tafere 2009); however, this asked participants to describe the characteristics of children of the same age and gender living well or badly. The 'understandings of poverty' exercise, which was conducted the following year, was broader in focus and so comparable to the data collected from adults.

As the collection of Young Lives qualitative data was not designed to classify households as poor or non-poor, the information gathered does not allow for a poverty analysis on purely qualitative terms. The data do, however, contain valuable information about what children and adults think constitutes poverty and what is required to move out of this situation or prevent a fall into vulnerable conditions. In this paper, we use this information to inform the choice of quantitative indicators for the taxonomy used to classify the households. Using all three rounds of Young Lives data for the Older Cohort allows for verification of such indicators over time, which increases the robustness of the approach in analysing children and households' life trajectories.

The availability of such longitudinal quantitative and qualitative data on the lives of children in developing countries is unprecedented and thus offers unique opportunities. However, despite this wealth of information, there are also notable challenges and limitations when using the Young Lives data for a mixed-method analysis of child poverty dynamics. First, the questionnaires for quantitative data collection have changed and evolved over the three rounds, creating problems with respect to consistency. The questionnaires used for Round 1 hold the smallest number of questions but have been greatly expanded in Rounds 2 and 3. For this reason the Round 1 questionnaire was used as the main frame of reference to ensure availability of information across the whole period. In addition to the number of questions included, changes across rounds also pertain to the formulation of questions. Although questions on particular issues may have been used across all three rounds, the phrasing of those questions differed to such an extent that they may no longer reflect the same issue. In terms of the intake of food, for example, the relevant question in Round 1 asks about children's perceptions about the sufficiency of food intake ('Do you get enough food to eat?') while the relevant question in Rounds 2 and 3 pertains to actual food intake in terms of the number of meals. Although both formulations capture (lack of) food intake, the difference between perceived sufficiency and actual intake is problematic when trying to capture changes over time.

A second challenge in using the Young Lives data for the purpose of this study pertains to the fact that the quantitative questionnaires were not specifically designed to create a taxonomy of poverty and vulnerability or to measure poverty and vulnerability per se as the sample was 'pro-poor' (from Round 2 onwards, consumption data was used to classify households and identify differences in their trajectories). Also, Young Lives is a four-country study using a common set of questionnaires with a small number of country-specific questions. The questions need to reflect very different livelihoods in urban and rural areas, which in Ethiopia are studied by separate research groups (Universities of Gothenburg and Oxford respectively). As a result of all these factors, the number of indicators that could be drawn from the data to capture and reflect the living situation and levels of well-being of children and the household they live in is limited.

4. Developing a taxonomy of child poverty and vulnerability

Measures of child poverty, vulnerability and well-being have greatly expanded over the last decade and the individual development of such measures has largely been undertaken following the same steps. Roelen et al. (2009) identified a 'generic construction process' on the basis of a review of existing approaches and applied it to the measurement of multidimensional child poverty in Vietnam (Roelen et al. 2010). The process specifies five different steps to be undertaken, including (1) identification of the rationale or purpose of the study, (2) formulation of the conceptual framework, (3) and (4) selection and formulation of domains and indicators and (5) construction of outcome measures. The choices made at each of these steps are all subject to a degree of arbitrariness and value judgements and are highly interdependent (see also Alkire and Foster 2008). Nevertheless, following the construction process as a guide can support an explicit and transparent decision-making process. We follow the five different steps as proposed in the remainder of this section.

In terms of 'rationale and purpose', this paper combines quantitative and qualitative longitudinal data to gain more comprehensive and profound insights into changes over time with respect to child poverty and its underlying drivers. In doing so, it prepares the ground for further work analysing poverty dynamics and mobility for children in rural Ethiopia by creating an analytic taxonomy based on distinctions important to children and their carers. As a conceptual framework, we build on the notions of child well-being and 'well-becoming' (Uprichard 2008) and the asymmetrical position of children vis-a-vis their parents, carers and direct environment. An underlying premise is that such notions are highly context-specific and ideally to be formulated by children and their carers themselves rather than to be assumed by researchers or outside experts. For the identification of indicators to capture understandings of poverty and vulnerability, and consequently formulate our taxonomy of child poverty and vulnerability, we use Krishna's (2006, 2007, 2009) Stages of Progress method as the main underlying conceptual framework.

Krishna's Stages of Progress method was developed in Rajasthan and has subsequently been applied in Gujarat and Andhra Pradesh, Kenya, Uganda, Peru and North Carolina. The method uses structured group activities to generate criteria that are used to classify households and track them over time. It then creates a pseudo-panel as it asks community groups to classify households according to where they are now and where they were 25 years ago. This group activity is further complemented with household histories that look at why some households progress and others fall back. Krishna argues that in some contexts the method is better than a panel dataset, and not only for reasons of cost: although panel datasets 'deliver more precise numbers for escape and descent ... these numbers are precise only in the terms of their definition ... the poor themselves do not use dollar-a-day' (2007: 9).

Although Krishna's method is used as the main guiding framework, this study diverges from its strict application in two important ways. First, only part of the qualitative information underpinning the Stages of Progress and selection of appropriate indicators was collected on the basis of Krishna's method; that is, by explicitly asking respondents about the progressive

steps from ultra-poverty into poverty. As presented in Table 2, other qualitative information used to inform the taxonomy was collected on the basis of gaining a more holistic understanding of experiences of poverty from children and adults. Second, the actual classification of children and the households that they live in according to the taxonomy of poverty and vulnerability is not community-based. If we had sought to follow Krishna's method strictly, we would have had to ask community groups to classify households following the newly developed taxonomy. In this study, we use a taxonomy partially based on the Stages of Progress method to classify children and their households on the basis of the quantitative household data. Given the use of quantitative data for the actual classification, data availability to reflect Stages of Progress across the three rounds was a crucial aspect in the selection of indicators.

Given the constraints posed by the inconsistencies across three rounds of data collection, and the questionnaire in Round 1 being restrictive, some issues that were considered important were not included because of data limitations. Appearance in the form of appropriate clothing, for example, was mentioned on numerous occasions by children as being an indication of progress. Although information on appearance (and the extent to which appearance prevented children from interacting with others) was collected in later rounds of Young Lives, it was not part of Round 1. The inclusion of information on medical treatment proved problematic because information was only available for a sub-sample of children or household members, as the question was only asked when someone had experienced severe illness since the previous survey

The final step in the generic construction process refers to the development of measures of poverty such as the proportion of the population who are poor (poverty headcount), the extent to which these people fall below the poverty line (poverty gap), and the degree of equality among the poor (poverty severity); in other words, the calculation of indicators that summarise and present the findings on child and household poverty. In this study, we employ the dual cut-off identification strategy as put forward by Alkire and Foster (2008) and applied to (child) poverty studies in Bhutan (Santos and Ura 2008), Vietnam (Roelen et al. 2010) and Afghanistan (Ahmed and Gassmann 2010). Its application to a progressive taxonomy of poverty implies that a child belongs to a particular category when meeting the criteria for at least two indicators within that category. If a child is deprived with respect to less than two indicators within that category, the child is considered to belong to the less stringent category.⁴ Findings will refer to the proportions of children belonging to particular categories of household in the taxonomy.

The development of a mixed-method taxonomy to classify children and their households with respect to their living situation over longer periods of time is largely unexplored, with little previous research to build on. Before proceeding to the discussion of results and findings, we point towards two methodological challenges in developing such a taxonomy by combining qualitative and quantitative information and measuring child poverty over time. First, Krishna's method was developed to be participatory and community-based, with the development of taxonomy *and* classification of households to be undertaken at the community level and informed by qualitative information. The partial and explicit use of the method in this paper gives rise to an interesting inconsistency between the poverty classification and the delineations identified by children and adults, and questions regarding

4 For example, no organisational membership, no iron roof and no irrigation of land are indicators of the category 'nearly poor'; if a child is deprived with respect to at least two out of these three indicators, he or she is considered to be 'nearly poor'. If he or she is deprived with respect to one or none of these indicators, the child is considered 'non-poor'.

the extent to which these various classes actually represent a progressive or linear process out of poverty in the quantitative survey data. For example, whilst the ownership of draught animals may be defined as a distinct stage and a considerable improvement in living conditions, following progress made in nutritional status or school enrolment, survey results show that some children suffer under-nutrition despite having draught animals in the household. In other words, although the children and households identify a linear process of progress in interviews and focus group discussions, the quantitative survey findings point towards a more iterative process. The concurrent discrepancy calls for careful translation of the qualitatively informed taxonomy into a quantitative classification of households.

Second, the analysis of longitudinal child poverty, whether on the basis of quantitative, qualitative or combined sources of data, requires careful consideration in terms of the underlying indicators used to reflect changes in poverty and vulnerability. It is widely accepted that children's needs and requirements (food, health and education, amongst others) are age-specific and also that a denial of meeting such needs has different adverse impacts depending on age. Hence, a single set of indicators may not be able to adequately reflect children's levels of poverty as they move across various stages of childhood, and therefore may not appropriately capture poverty dynamics. Under-nutrition in early childhood can have serious (even permanent) consequences for physical, mental and cognitive development. By the same token, denial of high-quality education only becomes an issue for children in Ethiopia when they are aged 7 or upwards. Given the early stages that the body of longitudinal research on multidimensional child poverty finds itself in, no consensus has yet been reached on how to deal with this challenge. As does Roelen (2010), we have opted to use only indicators that are deemed to be an appropriate reflection of children's levels of poverty at that particular stage in childhood. For example, enrolment rates are excluded from the taxonomy in Round 1 when the children were aged 7–8 as many rural Ethiopian children would not be going to school at this age.

5. Results

Table 3 presents the information collected through focus group discussions, reflecting Stages of Progress (indicators), as identified by children and their carers. The second column points towards the importance of the particular indicator on the basis of the number of times it was mentioned or the relative importance that was assigned across the various sites. The third column provides illustrative quotations supporting the importance of a particular Stage of Progress.

Table 3. Focus group data to inform taxonomy and selection of indicators

Indicators (Stages of Progress)	Importance	Illustrative quotations	Mapped to quantitative?
Food (frequency, quantity, variety, quality)	Mentioned first in all sites	‘They eat only <i>shiro</i> sauce all the time but we eat a variety of sauces every time.’ (children, Aseb) ‘They are carrying <i>kitta</i> [homemade bread] as [carelessly as if] it were cow dung while our children chase them begging for the <i>kitta</i> .’ (men, Tana)	Could not capture variety or quality
Clothing	Mentioned first or second in almost all sites	‘They are well clothed and hence are proud to mix with the community in places where the community meets.’ (female household heads, Tana) ‘We always buy new clothes for our children at the time when school begins [otherwise] they will complain and their morale to attend education declines.’ (mixed adults, Negele)	x Mentioned in R2 and R3 only
Animals (poultry, sheep, goats, cattle)	Mentioned in almost all sites, usually ranked third, fourth or fifth	‘Those who are wealthy milk the cow. They herd goats and sheep which they have never [done] before. Yes, they have improved their lives.’ (women, Tana) ‘An individual can start by buying one goat, then he can add one sheep, then he can add a donkey, then one ox, or a cow and he can go that way up to buying a mule and a camel.’ (mixed adults, Semhal)	
Oxen	Mentioned in the majority of sites, usually as the threshold between poor and non-poor	‘If an individual buys a pair of oxen then he is considered as ... equal to others since he is able to farm his own land independently.’ (mixed adults, Leki) ‘[Oxen are] the source of livelihood as they can be shared out [lent to and borrowed from neighbours] and it saves the household from renting two oxen for farming.’ (mixed adults, Tach-Meret)	
Land	Mentioned in the majority of sites	‘The [selection] criteria [for the PSNP] give more weight to having land than oxen. This is because cattle are mortal, but land is fixed.’ (male household heads, Tana) ‘We are starving. Why? We don’t have land. I used to rent land. But the price has gone up, and I can’t afford it any more.’ (man, Negele)	
Access to medical treatment	Mentioned in the majority of sites	‘People prefer to go to holy water because they don’t have money for medical expenses.’ (children, Aseb) ‘If parents have money at hand, no doubt that they will take the ill child to the health centre. But the difference comes when there is no money at hand. In such cases [rich families] are in a better position because they have sheep and goats that they could sell for such emergencies.’ (children, Tana)	x Only asked in response to severe illness so the number of respondents was small
Daily labour	Mentioned in at least a third of sites	‘The demand for daily labour in our village is too low and periodic. [There is money only] in big cities like Addis Ababa, where there is continuous demand for day labourers.’ (mixed adults, Galafi)	x
Irrigation	Mentioned in at least a third of sites	‘Irrigated land helps the household to produce different kinds of crops, including onions, tomatoes, etc. The income obtained from the sale of the vegetables helps the owners to expand the irrigated land by renting land from the poor [who lack labour or oxen to farm it].’ (children, Leku)	
Having a corrugated iron roof	Mentioned in at least a third of sites	‘They eat as they like and have covered their house with corrugated sheets of iron.’ (women, Tana)	
School performance	Mentioned in at least a third of sites	‘The school performance of our children is getting better [now we have more money]. For example, my daughter came third in her class. Our children are being recognised for their achievements.’ (mixed adults, Galafi)	x Mentioned in R3 only
Uniforms and school materials	Mentioned in at least a third of sites	‘If they go without wearing their uniforms, they will be sent away from school. Because of fear of that, they miss school days.’ (children, Negele)	x Mentioned in R2 and R3 only
Connections to govt.	Mentioned in at least a third of sites	‘Those who have nothing, not even a single hen to dig the compound, let alone an ox, are excluded [from the PSNP] ... It is those government elites and local elites. They include their relatives until the quota is full.’ (men, Tana)	
Children not doing paid labour	Mentioned in at least a third of sites	‘Being poor is thinking about daily labour in class because daily labour is the work of the poor.’ (children, Leku)	

Note: Not needing to migrate and own one’s house were mentioned by all the groups in Tigray, but nowhere else, illustrating the need to be sensitive to local priorities.

Table 4 then presents the indicators as selected on the basis of the qualitative information in tandem with the available quantitative information across three rounds of data. Issues of food security and access to livestock and land were repeatedly mentioned as being amongst the first Stages of Progress. Small quantities of food as well as not having any livestock or land for agricultural use were clearly associated with ultra-poverty. Owning any draught animals was considered the most important threshold suggesting progress out of poverty, as these enabled households to plough their land at the correct time and share their oxen with their neighbours. Other issues that reflected a gradual increase in living standards and well-being include having land they could use rather than working as a day labourer,⁵ having a corrugated iron roof and connections to government or other contacts (see the Appendix for a detailed description of indicators and thresholds used across the three different rounds of data).

Table 4. *Indicator deprivation rates across three rounds of cross-sectional data (%)*

Category	Indicator	R1	R2	R3
Ultra-poor	Under-nutrition	7.4	0.3	0.5
	Not enrolled in school	n/a	8.1	14.9
	No animals	18.4	12.8	10.0
	No land used for agriculture	9.4	10.1	8.4
	Unreliable credit	6.5	10.6	7.2
Poor	Insufficient food	24.7	5.1	6.0
	Child worked for money	11.4	8.2	5.8
	No draught animals/oxen	53.4	31.5	24.7
Nearly poor	No membership of organisations	25.2	7.4	6.8
	No iron roof	77.5	87.2	47.9
	No land irrigated	93.0	90.2	86.8

Indicator deprivation rates suggest that they are largely reflective of concurrent classes of poverty and a gradual path out of poverty. A more in-depth discussion of the various indicators included in the taxonomy does, however, suggest a more nuanced picture, as we explain below.

Deprivation rates are generally lowest for those indicators pertaining to the category of *ultra-poverty* and rise across the taxonomy with higher deprivation rates for indicators reflecting poverty and near-poverty. The rate of under-nutrition is 7.4 per cent in Round 1 and drops substantially, to respectively 0.3 and 0.5 per cent, in Rounds 2 and 3. The substantial drop in under-nutrition outcomes from Round 1 to Round 2 can partly be attributed to the fact that the underlying items of this indicator change across rounds. While under-nutrition in Round 1 is based on indicators pertaining to BMI-for-age, weight-for-age, and height-for-age, Round 2 only contains weight-for-age and height-for-age and Round 3 only has height-for-age. It can also be argued that anthropometric measures are more able to capture under-nutrition for younger rather than older children (McMurray 1996). Notwithstanding the potential source of discrepancy across rounds, under-nutrition rates are lowest in comparison to other indicators and a clear indication of ultra-poverty and an initial Stage of Progress.

5 Some poor people had land, but because they did not have labour or oxen to work it, they rented it to others for a share of the crop ('share-cropping').

Enrolment is only reported here for Rounds 2 and 3 as some children were too young in Round 1 (age 7–8) to expect them to be enrolled in school (many children in rural Ethiopia start school aged 8 or older). Deprivation with respect to school enrolment increases considerably from Round 2 (age 11–12) to Round 3 (age 14–15), suggesting that children are likely to drop out of school when growing older. It may also be a result of the change from the first to the second cycle of primary school since there are fewer second-cycle schools (which means that longer journeys are required) and progression is by examination. Not having any animals in the household was considered an important indication of ultra-poverty in almost all sites.

The findings in Table 4 show that the proportions of children living in households without any animals have steadily decreased over time. Such a monotone decrease in deprivation across rounds cannot be observed for the remaining two indicators of ultra-poverty, pertaining to the availability of land to use for agriculture or taking credit from informal money lenders. The lack of change in availability of land may be due to Ethiopia's land-tenure system, according to which land cannot be bought or sold and is divided into smaller and smaller plots as households expand. The increased use of credit in Round 2 probably relates to the drought in the earlier part of 2006 (the year Round 2 data were collected), followed by flash floods, overflowing rivers, and outbreaks of watery diarrhoea in the latter part of the year.

Indicators pertaining to the stage of *poverty* include the insufficiency of food, children working for money and having no draught animals or oxen. In Round 1, 25 per cent of all children lacked sufficient food, which compares to respectively 5 and 6 per cent in Rounds 2 and 3. The sharp decline in these deprivation rates can largely be attributed to the different phrasings of the questions underlying this indicator. Whilst the question in Round 1 captures children's perception of the sufficiency of food, the question in Rounds 2 and 3 counts the number of meals that a child eats per day. The other two indicators associated with poverty, working for money and having no draught animals or oxen, are consistent over time in their formulation and indicate strong improvements from Round 1 to Round 3. Notably, the proportion of children living in a household without draught animals or oxen dropped by more than half, from 53 to 25 per cent. Given that the ownership of such animals was considered a strong indication of moving out of poverty, the improvement with respect to this indicator over time is reflected in the classification of children and households according to the taxonomy.

Finally, indicators of *near-poverty* also suggest improvements over time and thereby indicate that many children have moved out of poverty, following our taxonomy. While one in four children were living in a household without membership of an organisation providing potential access to political power or credit in Round 1, this was reduced to less than one in ten in Rounds 2 and 3. Part of the improvement with respect to this indicator can be attributed to the underlying questions; Round 1 only included a limited number of organisations to indicate membership, whilst this list was greatly expanded in Rounds 2 and 3. The questions pertaining to the roof material of the house and irrigation of land were consistent across the three rounds and point towards strong improvements in living conditions as access to irrigation enables farmers to diversify into cash crops such as tomatoes and onions.

Following our analysis of outcomes by indicator (Table 4), Table 5 reports on the poverty rates by category across the three different rounds.

Table 5. *Child poverty rates by category (%)*

Category	R1	R2	R3
Ultra-poor	7.0	8.6	8.4
Poor	49.8	24.0	17.2
Nearly poor	35.6	55.5	41.8
Not poor	7.7	12.0	32.6

Despite the potential inconsistency between the Stages of Progress as identified by children and adults and their reflection in the quantitative data, results point towards the validity of this taxonomy in capturing upward and downward mobility across three different rounds. They suggest an overall increase in living standards for these children in rural Ethiopia with large shifts from poverty to near-poverty between 2002 and 2006 (Round 1 and Round 2) and from near-poverty out of poverty between 2006 and 2009 (Rounds 2 and 3). Despite these positive trends, it can also be observed that the proportions of children in ultra-poverty remained largely the same over all three rounds. Camfield and Roelen (2011) conduct further analysis on poverty mobility across rounds among the same sample, considering exit- and entry-rates from poverty to assess the extent to which the children and households identified as ultra-poor in Round 1 remain the same across the three rounds.

6. Discussion and conclusion

This mixed-method taxonomy builds on qualitative data to inform the selection of quantitative indicators to assess children's lives. Children and adults' views on what would make them perceive themselves or the households they live in as poor or well-off are used to formulate indicators and define appropriate thresholds. The views that are taken into consideration are from one qualitative round of information and therefore represent children's attitudes, perceptions and beliefs at a particular time in their lives, when they were aged 13–14. One could question the extent to which the views expressed at one stage in childhood adequately and appropriately reflect views at other stages of childhood. We have argued in previous papers that children's understandings of well-being enhance understandings of poverty derived from, for example, such methods as PPAs with adults (Camfield and Tafere 2009). However, when children are asked to focus on what makes households rather than children poor, their responses are very similar to those of adults (and at 14 they are, in any case, proto adults). Although applied in previous contexts (Krishna 2009, Davis and Baulch 2011), this is the first time such a mixed-method taxonomy has been developed for considering *child* poverty over time and used in Ethiopia. The development of a mixed-method taxonomy in this paper and the analysis of its outcomes lead to a number of substantive and methodological conclusions.

Living standards for children in rural Ethiopia have increased considerably from 2002 to 2009, as is reflected by national statistics. The proportions of children living in poverty and near-poverty within this sample have dropped over time from 50 per cent of all children living in poverty in 2002 to less than 20 per cent in 2009. This positive trend, however, does not pertain to ultra-poverty, with poverty rates persistently hovering around 7 and 8 per cent. Reasons for the changes in households' classifications include the availability of food, access to livestock and draught animals, and acquisition of a corrugated iron roof.

Methodologically, this paper points towards challenges in the use of particular indicators for the measurement of child well-being from a longitudinal perspective. These challenges pertain to the methods used and the fluidity of the very concept of child well-being across stages of childhood, both in terms of notions of children themselves and of measurable outcomes. As pointed out in Roelen (2010), certain indicators are specific to particular stages in childhood and are able to reflect changes within that particular stage but not beyond. Education, for example, is an area in which a child will only make progress once they are of school-going age, with educational indicators being unable to capture any aspect of children's well-being before or after they leave school. Similarly, under-nutrition indicators are particularly pertinent during infancy and are less able to capture the level of well-being of older children, although lack of food was clearly an important issue for children aged 13–14.

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Appendix

Detailed description of indicators and thresholds used across the three data collection rounds

Indicator	Item in R1	Item in R2 and R3	Cut-off	Notes
Under-nutrition	z-scores height-for-age (stunting) and weight-for-age (underweight)	z-scores height-for-age (stunting) and weight-for-age (underweight)	R1: based on BMI (<-5, >5), waz (<-6, >5) and haz (<-6, >6); R2: based on waz and haz; R3 based on haz only	<i>Items were used solely for indicators of under-nutrition for which flags were available in the data. WHO has no reference values for waz>10 years of age</i>
Not enrolled in school	Is this child currently in full-time education?	Is this child currently in full time education?	Not currently enrolled	<i>Most appropriate for children R2 onwards due to customary age in enrolment in rural Ethiopia</i>
No animals	Has anyone in the household owned any livestock in the last 12 months?	Has anyone in the household owned any livestock in the last 12 months?	Having no animals at all, or having only chickens, rabbits or bees	
No land used for agriculture	In the last 12 months, has anyone in your household owned, borrowed or rented any land? If yes, is it used for living plus garden, farming, pasture, gardening or grazing livestock?	In the last 12 months, has anyone in your household owned, sharecropped-in, borrowed or rented-in any land? If yes, is it used for living plus garden, farming, pasture, gardening or grazing livestock?	No land used for agriculture	<i>R1: children deprived when no land owned/borrowed or when land not used for agriculture. R2/R3: the same as R1, with the addition of land that is sharecropped-out.</i>
Unreliable credit	What would you or other members of your household do in case of hard times and/or misfortune caused by, e.g., natural disaster, crop failure, someone losing their job?	What would you or other members of your household do in case of hard times and/or misfortune caused by, e.g., natural disaster, crop failure, someone losing their job?	In an emergency would borrow from informal money lenders	<i>Indicator considers vulnerability when explicitly indicating that they would borrow from informal money lenders, typically at interest rates in excess of 100% (access to credit in general was considered beneficial)</i>
Insufficient food	Do you get enough food to eat?	Food frequency: During the previous 24-hour period did [name of child] consume [number of meals]?	Child perceives that they have insufficient food or eats fewer than three main meals per day	<i>R2 & R3: having at least 3 main meals per day is considered sufficient – based on acknowledgment that other meals and snacks are likely to be unsubstantial (this may also be true of main meals so the subjective measure of hunger used in R1 may work better)</i>
Child worked for money	Have you done anything in the last 12 months to earn money for yourself and/or your family? What form of payment was received or is expected from this activity? 01=Cash, 02=In-kind (non-cash payment, e.g. gifts, food), 03=Both cash and in-kind	I want to know how you spent your time on a typical day in the last week. Activities for pay or for money outside of household or for someone not in the household	Child does paid work	<i>Definitions of paid work are not completely consistent across rounds; R1 includes work for household but paid, while R3 does not include work for household. Does not capture the effects of work in the house or on the family farm or the time spent in paid work.</i>

Indicator	Item in R1	Item in R2 and R3	Cut-off	Notes
No draught animals/oxen	Has anyone in the household owned any of the following animals in the last 12 months? Draught animals (e.g. donkey, horse, bullock), cattle (including cow and calf), sheep/goats/pigs, poultry/rabbits	Has anyone in the household owned any of the following animals in the last 12 months? MILK/SHE ANIMALS cow (modern variety), cow (traditional variety), calves, buffalo (modern), buffalo (traditional), heifer DRAUGHT ANIMALS bullock, he-buffalo, donkey/horse/mule, bull calf/young bull, ox(en), camel SMALL RUMINANTS sheep, goat, pigs poultry/birds rabbits COUNTRY-SPECIFIC beehives, others, including cross-breeds	No draught animals (primarily used for ploughing)	<i>Referring to not having owned draught animals – R1: draught animals as one category – R2 & R3: draught animals subdivided into 5 different categories including camels, oxen, donkey/horse, buffalo and bullock</i>
No membership of organisations	I now want to ask about organisations, groups or informal associations to which you or members of your household belong: community association/co-op, women's group, political group and credit/funeral group.	Is any member of your household an active member of an organisation, group or informal association? Farmer's cooperative, other farmer's group, credit society/cooperative, business group, youth group, women's group, peasant association, service cooperative, iddir, iqqub, women's association, farmer's association	No memberships that would provide access to political capital or credit, i.e. community associations, cooperatives or political groups	<i>R2 & R3 have many more categories to choose from, which could partly explain sharp drop in vulnerability from R1 to R2</i>
No iron roof	Observe and record roof main material	Observe and record roof main material		
No land irrigated	In the last 12 months, have you irrigated any of the land?	In the last 12 months, have you irrigated any of the land?		<i>Access to irrigation is somewhat dependent on location, i.e. geography, connection to markets, NGO support, although there is inequality within locations. Not beneficial if land then sharecropped-out or if the pump breaks down.</i>

Notes:

BMI: Body Mass Index

waz: weight-for-age z-score

haz: height-for-age z-score

Young Lives is an innovative long-term international research project investigating the changing nature of childhood poverty.

The project seeks to:

- improve understanding of the causes and consequences of childhood poverty and to examine how policies affect children's well-being
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Young Lives is coordinated by a small team based at the University of Oxford, led by Jo Boyden.

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(Women's University), Andhra Pradesh, India

Grupo de Análisis para el Desarrollo
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Instituto de Investigación Nutricional
(Institute for Nutritional Research), Peru

Centre for Analysis and Forecast,
Vietnamese Academy of Social Sciences,
Vietnam

General Statistics Office, Vietnam

Save the Children, Vietnam

The Institute of Education, University of
London, UK

Child and Youth Studies Group (CREET),
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