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Causal pluralism and mixed methods in the analysis of poverty dynamics

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Abstract: This paper examines the relationship between poverty dynamics, causal pluralism, and mixed method research approaches. It reviews the nature and significance of the shift from the analysis of poverty status to poverty dynamics, discusses different approaches to causal reasoning and causal inference in philosophy and the social sciences, and presents empirical examples of mixed method studies of poverty dynamics. It concludes with a case for causal pluralism and mixed methods on grounds that empirical validation/adjudication is imperfect, knowledge is partial, and many causal systems are inherently complex.

Keywords: poverty dynamics, causation, mixed methods

JEL classification: A12, B00, B41, I32

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1 Introduction

The last twenty-five years or so has been a period of conceptual and methodological ferment in poverty research resulting in a voluminous and continually expanding literature. There have been a number of important developments in the understanding and analysis of poverty. A short list would include: the increasing recognition of the multidimensionality of poverty and attendant formulation of multidimensional poverty indices and forms of analysis¹; the development of a number of decomposition techniques which separate poverty changes into growth and redistribution (Datt and Ravallion 1992) or sectoral components (Ravallion and Huppi 1991); work on poverty line estimation (Ravallion 1994) including the development of so-called fuzzy poverty lines (Lemmi and Betti 2006) and many more. Much of this research has informed policy, and helped achieve the remarkable reduction in the incidence of global poverty over the last quarter of a century.

This paper focuses on three additional developments in research on poverty. Specifically, it examines the relationship between poverty dynamics, causal pluralism, and mixed method research approaches. As discussed further below, poverty dynamics is about wellbeing trajectories of individual households or persons over time. Causal pluralism refers to the co-existence of different conceptions of causation and strategies of causal inference. Mixed method approaches are about the combination of a range of research techniques within a single study, ideally to enrich understanding and explanation.

The format of the paper is as follows. Section 2 explores the meaning and significance of the dynamics of poverty by reviewing the distinction between stocks and flows (section 2.1), unpacking the notion of flows (section 2.2), and discussing the significance of the shift to poverty dynamics (section 2.3). Section 3 examines the link between causal pluralism and the analysis of poverty dynamics by first distinguishing between two broad concepts of causation, difference-making and production (section 3.1), before proceeding to discuss conditional association, applied micro-economics, and econometric analysis of poverty dynamics on the one hand (section 3.2), and mechanism-based approaches on the other (section 3.3). Section 4 provides examples of mixed method approaches in the analysis of poverty dynamics organized in terms of four contributions which they have made to the field, namely, combining outcomes and processes, combining reasons and correlates, selecting causal variables, and uncovering relationships and ‘thickening’ the description of causal variables. Section 5 concludes with a summary case for causal pluralism and mixed methods in the analysis of poverty dynamics on grounds that they aid in addressing difficulties of empirical validation/adjudication, the partiality of knowledge, and the complexity of causal systems.

¹ See, inter alia, Bourguignon and Chakravarty (2003), Duclos et al. (2006), Alkire et al. (2015), and Arndt and Tarp (2016).

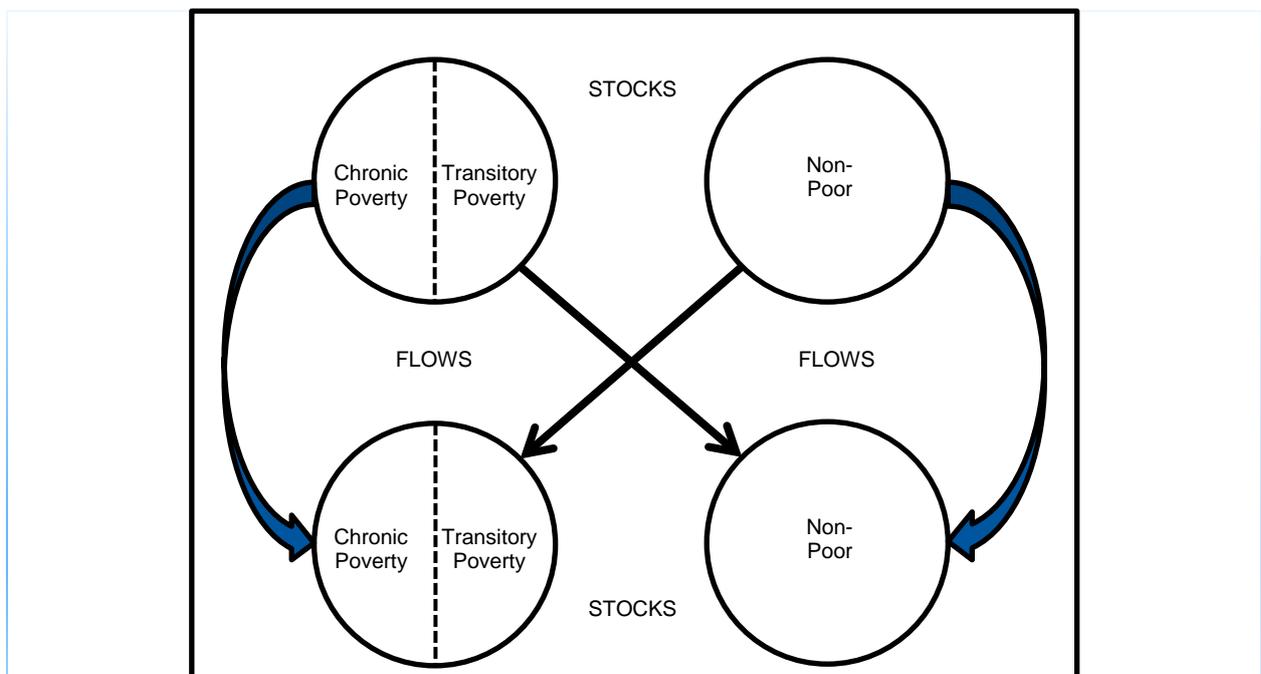
2 The deepening of the causal framework: the dynamics of poverty²

2.1 From stocks to flows

Historically, most statistical studies of poverty have been based on cross-sectional analyses of the stock of poverty at one or more points in time³. Such analyses allow for inferences to be drawn about poverty incidence (and its correlates) at a given point of time or changes in poverty incidence (and its correlates) over time. These stock-based studies of poverty status remain the most prevalent forms of applied poverty analysis in the Global South.

The greater availability of panel data, which track individuals or households over time, has allowed for the increasingly widespread analysis of the dynamics of poverty (Baulch 2011; McKay and Perge 2011). Such analysis focuses on flows of households or individuals into, out of, or within poverty at different points in time. It facilitates the distinction between those who stay poor (chronic poverty) and those who exit from or enter into poverty (transitory poverty). Figure 1 graphically displays these distinctions between stocks and flows of poverty and between chronic and transitory poverty.

Figure 1: Stocks and flows of poverty



Source: Shaffer (2008).

The typical stock-based analysis of poverty status is represented by the two circles on the left-hand side of Figure 1. The circles would be undifferentiated in the sense that no distinction is drawn between chronic and transitory poverty. As discussed above, this type of cross-sectional analysis allows for the estimation of the magnitude and correlates of poverty at one or more points in time.

Analysis of the dynamics of poverty, on the other hand, is represented by the arrows in the diagram which point to flows between four categories of households, or individuals. Specifically, they

²This section is a revised and expanded version of Shaffer (2008).

³See Lipton and Ravallion (1995: 2565).

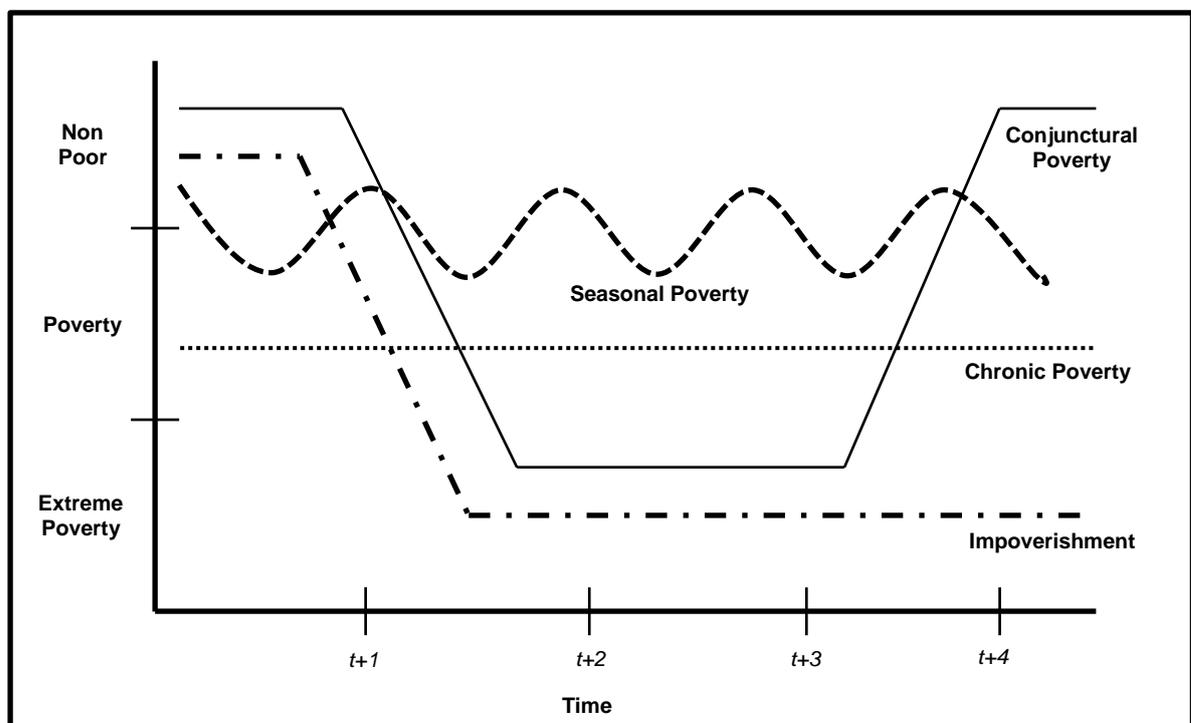
direct attention to those who stay poor or non-poor and those who escape from poverty, or fall into it. Chronic poverty is comprised of the first of these groups while transitory poverty is made up of the latter two.⁴

As discussed in section 4, mixed method studies have played an important role in deepening our understanding of characteristics and causes of these different types of poverty.

2.2 Unpacking flows

As mentioned, the arrows in Figure 1 are meant to depict the flows of households, or individuals, between different welfare categories. In reality, such flows correspond to a wide range of empirical processes culminating in entries and exits from, or stays in, poverty. Figure 2 provides a graphic depiction of a number of these processes, distinguishing between seasonal, conjunctural and chronic poverty along with impoverishment. This list is not meant to be exclusive but illustrative of a range of trajectories of change which comprise the dynamics of poverty.

Figure 2: Unpacking flows



Source: Shaffer (2008).

Chronic poverty is a long-term or permanent condition associated with persistently low levels of living. It may result from low levels of productivity in agriculture, lack of access to productive assets, low real wages and so forth. Alternatively, it may be associated with economically inactive populations who are unable to work due to disability, illness or old age, for example. Historically, most poverty reduction strategies have been conceptualized with chronic poverty in mind. For example, discussion of sectoral or trade policies in the context of poverty reduction strategies, has

⁴This discussion relies on a 'spells-based', rather than a 'components-based', definition of chronic and transitory poverty (McKay and Lawson 2003). The latter defines the chronically poor as those whose average inter-temporal income or consumption is less than the poverty line (Jalan and Ravallion 2000).

placed much greater emphasis on their poverty or distributional consequences than on their implications for vulnerability (World Bank 2002, Vol. 2; Ravallion 2016: Ch.9). Further, typical micro-level strategies designed to reduce poverty are based on the implicit notion of a production function and have focussed on ways of increasing the productivity of the poor through measures affecting land, labour and capital, along with credit (Lipton and Ravallion 1995: 2622–30).

In terms of the different variants of transitory poverty depicted in Figure 2, impoverishment represents a significant deterioration in levels of living resulting in a new long-term low. According to Sinha et al. (2002) the most important triggers of impoverishment in the Global South are illness, personal violence and mass conflict, natural disasters, harvest failure, terms of trade deterioration affecting inputs and outputs in the production process or relative prices of good produced and purchased, and loss of employment. Conjunctural poverty refers to descents into poverty over the medium term, followed by improvements in levels of living. At a macro level, conjunctural poverty may accompany periods of recession or economic crisis, while at a micro level, it may correspond to lifecycle events such as dowry payments. Seasonal poverty, or 'churning', typically refers to income or consumption variability over the course of the agricultural cycle.

As further discussed in section 4, mixed method analyses have made significant contributions in unpacking the nature of 'flows' by providing a 'thicker' account of the processes in question.

2.3 Do flows matter?

The distinction between stocks and flows, or between poverty status and poverty dynamics, is important for many reasons. First, evidence suggests that transitory poverty is a significant empirical phenomenon. Baulch and Hoddinott (2000) have compiled data on this question drawing on a number of recent panel studies (see Table 1). The chronically poor are defined as those who are poor across all spells in the panel, while those in transitory poverty are not poor in at least one spell. The magnitude of transitory poverty is striking. It ranges from around one quarter to two thirds of the population depending on the length of the spell and the country in question. In some cases, such as Pakistan, transitory poverty appears to be nearly twenty times as large as chronic poverty over a five-year period. The main caveat to bear in mind with these data is that measurement error inflates the importance of transitory poverty (though the extent of the overestimation is hard to determine empirically). Different methods of correcting for measurement error tend to give different estimates of its magnitude and there is no consensus in the literature as to the optimal correction procedure (Baulch 2011).

Table 1 Chronic and transitory poverty in panel studies

Country	Dates	Observations	Chronic Poverty ^a	Transitory Poverty ^b	Never Poor
South Africa	1993-1998	2	22.7	31.5	45.8
Ethiopia	1994-1995	2	24.8	30.1	45.1
India	1968-1971	3	33.3	36.7	30.0
India	1975-1984	9	21.8	65.8	12.4
Cote d'Ivoire	1985-1986	2	14.5	20.2	65.3
Cote d'Ivoire	1986-1987	2	13.0	22.9	64.1
Cote d'Ivoire	1987-1988	2	25.0	22.0	53.0
China	1985-1990	6	6.2	47.8	46.0
Pakistan	1986-1991	5	3.0	55.3	41.7
Russia	1992-1993	2	12.6	30.2	57.2
Chile	1967-1985	2	54.1	31.5	14.4
Zimbabwe	1992-1995	4	10.6	59.6	29.8

Notes: ^a Poor in all spells. ^b Not poor in at least one spell.

Source: Author's, based on Baulch and Hoddinott (2000).

Second, there may be systematic differences in the characteristics of different forms of poverty, and in the underlying processes, with implications for targeting and/or other policy measures. A number of studies have found differences in the characteristics of transitory and chronic poverty. For example, McCulloch and Baulch (2000) found higher dependency ratios in chronically poor households in Pakistan while Jalan and Ravallion (1998) found a number of variables associated with chronic but not transitory poverty in China, including household size, health and education. Likewise, processes leading to entries into poverty are not simply the converse of processes leading to exits from poverty. In his study of communities in India, Kenya, Uganda and Peru, Krishna (2010a) found that the main reasons for entries into poverty – namely health and health-related expenses, marriage and dowry expenses, funeral-related expenses and debt – were quite different from reasons for exits, such as diversification of income and public or private sector employment.

Third, as suggested above, in certain situations, policy interventions to address chronic and transitory poverty, and to promote escapes from poverty (and forestall descents into poverty) will differ. Traditional options in low-income countries to address chronic poverty include increasing agricultural productivity, improving access to productive assets, facilitating labour-intensive growth and so on, as discussed above. On the other hand, measures to address transitory poverty, in particular to prevent entries into poverty, may include options to reduce risk or mitigate the effects of shocks and stresses. Often such measures fall under the heading of social protection and include insurance schemes, provision of credit for consumption smoothing, employment guarantees programs and cash or in-kind transfers, among others (Barrientos and Hulme 2008). Once again, such options may systematically differ from those aimed at facilitating exits from poverty; such as promoting diversification of livelihood portfolios, implementing counter-cyclical macroeconomic policies and so on. To be sure, there is overlap between many such measures and those intended to address the chronically poverty, in particular interventions for economically inactive populations (Ravallion 2017). Nevertheless, the objectives tend to be different and the instruments are overlapping, but not the same.

The shift from stocks to flows matters because flows represent significant empirical phenomena, and because the policy response to stocks and flows of poverty may systematically differ. As discussed below, mixed method approaches have played an integral role in better understanding the nature of flows.

3 Causal pluralism and poverty dynamics⁵

3.1 Two concepts of causation: difference making and production

As with any kind of analysis, poverty analysis makes causal claims, but rarely do the underlying causal assumptions receive explicit treatment. By assumptions, I am referring to the chosen concept of causation, and model of causal inference, and not, for example, to identification strategies in econometrics. Baring such assumptions is important because there are many different types of causal systems in the world and many different forms of causal analysis, each with strengths and limitations. In fact, the very meaning of the word causation remains highly contested as do strategies of causal inference. As argued by philosopher of science Nancy Cartwright (1999, 2007), causation is ‘one word, many things’.

⁵ This section draws on Shaffer (2013, 2015a and 2015b).

Cartwright's position is supported by the wide variety of concepts of causation and models of causal inference found in the literature. One recent survey article distinguishes eight such approaches including: nomological subsumption, statistical correlation, counterfactual dependence, agential manipulability, contiguous change, energy flow, physical processes and property transference (Schaffer 2008). In a slightly different vein, Cartwright (2007) identifies six empirical models of causal inference, including: Bayes-nets accounts and Granger causality, modularity accounts, manipulation accounts, invariance accounts and causal process theories. Little (1991) supplements this list in his with the following forms of causal explanation in the social sciences: functionalism, structuralism, materialism and forms of statistical analysis, *inter alia*.

Arguably, a core intuition about the meaning of causation, however, provides a way of distinguishing the various approaches. This intuition rests on a distinction between two concepts of causation, which have been alternatively phrased as 'difference-making and production' (Godfrey-Smith 2009), 'dependence and production' (Hall 2004), or 'probabilities and processes' (Schaffer 2008). According to Schaffer (*ibid.*): 'The nomological, statistical, counterfactual and agential accounts [of causation] ... understand connection in terms of probability: causing is making more likely. The change, energy, process, and transferring accounts [of causation] converge in treating connection in terms of process: causing is physical producing'. As discussed below, this distinction between difference making and production turns out to have considerable cutting power when contrasting approaches to the analysis of poverty dynamics.

In his seminal paper on this issue, Hall (2004) argues that different underlying principles characterize each of the two concepts of causation. Specifically, transitivity and locality are core features of 'production-based' accounts. Transitivity is the logical relationship between three elements which, in the present sense, implies that if *a* causes *b*, and *b* causes *c*, then *a* is a cause of *c*. Locality maintains that causes and effects are linked in time and space through a continuous series of intermediate events or actions. 'Difference-making' approaches, on the other hand, require neither transitivity nor locality and may assign causal status to omissions, or the failure of an act or event to occur. As discussed in the hypothetical below, 'difference-making' is the underlying principle of counterfactual approaches to causation, which hold that if *a* causes *b* then *b* would not have occurred in the absence of *a*.

To elaborate upon this difference in approaches, it is useful to present two hypotheticals, drawing on Hall (2004), which illustrate how different causal inferences may follow from the two conceptions of causation. The first example depicts a case of 'production-based' causation in the absence of 'difference-making'. Consider a so-called case of 'overdetermination by pre-emption'. Two individuals, Suzy and Billy, are throwing rocks with the aim of breaking a pane of glass. Suzy's throw arrives a split second before Billy's and breaks the glass, thereby pre-empting Billy's glass-shattering throw. In terms of 'difference-making', Suzy's throw is inconsequential to the glass-breaking, as Billy's throw would have shattered it anyway. Accordingly, by counterfactual accounts, causation does not occur. In terms of 'production' however, Suzy's throw does indeed have causal effect in breaking the glass.⁶

In a second example, the converse situation is presented namely, 'difference-making' without 'production'. Consider a case of double prevention, where rain showers in April prevented a forest fire in May, thereby paving the way for a subsequent forest fire in June. Can we attribute the April rains as a cause of the forest fire in June? From a 'difference-making' point of point, they do seem to be causally related, in that the June forest fire would not have occurred in the absence of the April rains. From a 'production-based' perspective, however, there is no causal relationship in that

⁶ Additional complexities are addressed by Hall (2004).

the April rains play no direct role in producing or generating the forest fires, violating requirements of locality.

To anticipate the argument below, causal analysis of poverty dynamics within the applied tradition of micro-economics is primarily about ‘difference-making,’ in that regressors in econometric models are often given a causal interpretation if they are significantly associated with, or ‘make a difference to’, the left-hand side variable. On the other hand, the causal analysis of poverty dynamics within many so-called ‘qualitative’ research traditions is mainly about ‘production’, in so far as causation is inferred by tracing out processes or identifying ‘mechanisms’ linking events and/or outcomes. This distinction does not map perfectly onto the research traditions, as, in practice, there is overlap between, and hybridity within, approaches.⁷ In fact, certain examples of such hybridity are presented in the mixed method cases discussed in section 4. Nevertheless, it does point to real differences between research traditions and has cutting power when distinguishing certain of their core features.

3.2 Conditional association, applied microeconomics, and econometric analyses of poverty dynamics

The analysis of (consumption) poverty dynamics in the applied tradition of micro-economics begins with the estimation of an expenditure function which represents the monetary cost or value of a given level of utility, taking into account differences in household composition and prices (Deaton and Muellbauer 1980). Next, a transition matrix is constructed representing population percentages in discrete welfare categories such as chronically poor, never poor and transitorily poor, as discussed in section 2. Correlates of these welfare categories are estimated econometrically relying on household and community-level variables such as household composition, physical assets, human capital, region, and so on. In terms of model specification, multinomial logit functions have been widely used, providing estimates of probabilities of belonging to one of the aforementioned welfare categories. In poverty modelling generally (e.g., Haughton and Khandker 2009), and in the modelling of poverty dynamics specifically (e.g., Quisumbing 2011), a causal interpretation is often given to variables which are statistically significant.

The model of causation which serves as the foundation of the applied tradition of micro-economics is conditional association. It is one type of probabilistic theory of causation⁸, originally developed by Reichenbach (1956), Suppes (1970), and Hitchcock (2002, 2010). The basic idea in this class of theories is that a cause raises the probability of its effects. More specifically, if a causes b , then the conditional probability of b given a is higher than the unconditional probability that b occurs. In terms of our previous discussion of ‘difference making’ and ‘production’, conditional association is an example of ‘difference-making’ in that a causal relationship is established conceptually, and inferred empirically, if a makes a difference to, that is, increases the probability of, b .

Probabilistic theories of causation, including conditional association, face a number of conceptual and applied challenges. Some examples include ruling out spurious correlations due to common causes, determining the direction of causation and correctly specifying the causal system, including causal variables and their interrelationships. In the language of econometrics, most of these types of problems fall under the heading of endogeneity bias due to omitted variables, reverse causation

⁷ For examples of hybridity and overlap, see Shaffer (2013: 65).

⁸ It should be noted though, that probabilistic causation was not fully integrated into econometrics until Haavelmo’s seminal paper, ‘The Probability Approach in Econometrics’ in 1944 (Morgan 1990).

or specification errors. The underlying problem in all such examples is that of inferring causation from conditional association.

There is a large econometric literature which has addressed many of these challenges. Hoover (2008) has identified four major approaches in this literature based on their reliance on two sets of variables, namely information about the underlying causal system or temporal ordering, on the one hand, and *a priori* or empirical information, on the other. A 2 x 2 matrix encapsulates his framework with the four possible types of identification strategies based on combinations of these variables. An example of the combination of temporal ordering and empirical information is ‘Granger’ causality, where lagged values of regressors are deemed to be causal, if statistically significant. The category combining *a priori* information with knowledge about the causal system is often linked to the research program of the Cowles Commission in the mid twentieth century, which assigned a primary role to economic theory. The core function of econometrics was to test theoretically derived hypotheses and estimate parameter values based on theoretic precepts specifying causal variables and their interrelationships.

The most relevant category for the present purposes combines empirical information with knowledge of the causal system. One example is Simon’s (1953) argument for the evidentiary value of natural or controlled experiments in making inferences about the direction of causality, an approach which has been generalized by Hoover (1990). A more recent example within this category involves the use of instrumental variables in econometric modelling to address problems of endogeneity (Angrist et al. 1996).

This discussion of difference-making, conditional association and econometric modelling sets the stage for the review of mixed method approaches in Section 4 in two main ways. First, it shows that conditional association is but one approach to causation, a so-called ‘difference-maker’, which, as argued below, may be fruitfully combined with other approaches. Second, mixed method studies have played a particularly useful role at addressing certain of the aforementioned challenges facing conditional association relying on empirical information about the underlying causal system (in Hoover’s language). Specifically, they have facilitated the specification of causal variables and identification of their interrelationships.

3.3. Mechanism-based analyses of poverty dynamics

As discussed above, causation in the context of conditional association is inferred if associations between dependent and independent variables persist after conditioning on all other relevant causal factors. By contrast, mechanism-based approaches require identification of the causal mechanisms generating causal effects. Little (1998: 202) provides a good summary statement of these approaches: ‘To assert that A’s are causes of B’s is to assert that there is a typical causal mechanism through which events of type A lead to events of type B.’ In the language of Section 3.1, such approaches are ‘producers’.

Mechanism-based approaches are quite integral to strategies of causal inference used in so-called ‘qualitative’ approaches to the analysis of poverty dynamics, which rely on techniques such as focus group discussions, semi-structured interviews, life histories, causal maps, time lines and so forth. Typically, individuals or groups are asked to recount experiences of well-being trends, or poverty transitions, over time along with the main reasons for change. Mapping techniques provide a visual depiction of this dialogical information. Such mechanism-based approaches rely on perceptual information to specify the interrelationships between causal variables based on the processes linking them.

It should be noted that the notion of causal mechanism is quite contested and has been defined in a number of very different ways. The philosophical literature on mechanisms is characterized by a range of definitions including causal entities and their attendant properties, causal activities undertaken by such entities, singular causal processes, mechanical systems and so on (Machamer et al. 2000; Glennan 2011). In the social sciences, an even greater variety of definitions is found (Hedström and Swedberg 1998; Pickel 2004). One study uncovered twenty-four definitions of the term in use, which the author subsequently groups in the following categories: i) intervening variables linking cause and effect; ii) mid-level theories of change; and iii) unobserved entities with causal effects (Mahoney 2001). Specific examples include rational choice theories; cognitive processes such as self-fulfilling prophecies, wishful thinking, adaptive preferences (Elster 1998); functionalist analyses at the level of individuals (Steel 2011) or societies (Cohen 1978); game theory and so on (Hedström and Swedberg 1998).

In the context of applied causal analysis of poverty dynamics, mechanisms usually refer to the processes generating causal effects. By ‘processes’, I am referring to the relevant causal variables, the pathways between them, or the causal ‘tree’, as well as an explanation of how they are linked. Mechanisms then, focus on the reasons for observed poverty outcomes, often elicited using the ‘qualitative’ methods listed above.

The main point of relevance for the discussion of mixed method approaches in section 4 is that mechanism-based causal analyses are ‘producers’ which may fruitfully complement ‘difference-making’ approaches to causation. The latter have focused on the magnitude of causal effects, the ‘how much’ questions, while the former on the underlying reasons, the ‘how’ and ‘why’ questions. One of the key contributions of mixed method studies has been to combine such approaches to provide a more comprehensive overall account of the causal system in question.

4 Mixed methods in the analysis of poverty dynamics⁹

The studies presented below are all quality mixed method analyses, relying on different approaches to causal inference, which have added value to the understanding of poverty dynamics. The discussion is organized around four key contributions which mixed method approaches have made to facilitating better causal explanation, namely, combining outcomes and processes, combining reasons and correlates, selecting causal variables, and uncovering relationships and ‘thickening’ the description of causal variables.

4.1 Combining outcomes and processes

Economics is mainly about outcomes... [not] about processes. Economists, of course, have models of perfect competition, or bargaining to reach a Nash equilibrium, or surplus extraction and use by the dominant class. But economists' tests show only whether a modelled process is consistent with the measured outcomes ... Only seldom does the economist empirically explore the processes themselves (Lipton 1992: 1541).

One of the core contributions of mixed method analyses has been to combine accounts of outcomes and processes (Bardhan and Ray 2006; Shaffer et al. 2008). In the broader literature on mixed methods in the social sciences, there have been many high-quality examples of this sort, generating very good insights (for example, Frankel and Lehmann 1984, Francis and Hoddinott

⁹ This section draws on Shaffer (2013) and Shaffer et al (2008).

1993). It should be emphasized that, as in the above discussion of causation, the outcome/process distinction is not meant to be procrustean. ‘Qualitative’ and ‘quantitative’ research methods can shed light on both outcomes and processes, depending on the research design. Still, the distinction does point to different areas of emphasis between econometric approaches, or ‘difference-makers’, on the one hand and mechanism-based approaches, or ‘producers’, on the other. Two such examples have been selected, both of which combine narrative information on processes with econometric results on outcomes.

The first example is a study by Barrett et al. (2006) of welfare dynamics in rural Kenya and Madagascar which tested for the existence of poverty traps, drawing on a methodological approach developed by Carter and Barrett (2006). The approach is based on a distinction between structural poverty, due to asset holdings and returns on assets, and stochastic poverty, due to chance. The test for poverty traps involved searching for the existence of asset thresholds below which insufficient income is generated to escape poverty.

The econometric analysis relied on panel data. The estimation strategy involved calculating expected structural income as a function of assets and, next, regressing expected structural income on initial period income. If poverty traps exist, expected structural income should be lower than initial period income at the bottom end of the distribution generating non-convexities in the production function. This pattern will reverse, after the asset threshold is reached. Non-parametric regression results are consistent with such a pattern.

The ‘qualitative’ component of the study involved detailed oral histories of households within different categories of the poverty transition matrix, contrasting the experiences of chronic and transitory poverty. Emphasis was placed on the reasons underlying poverty trajectories with a view to explain, in particular, why poverty traps may emerge. Three core results emerged.

First, lack of access to credit served as a major barrier to entry into higher return activities such as zero grazing dairy production with cross-bred cows and commercial tea cultivation. Second, constraints related to the lack of human and social capital, were obstacles to more remunerative employment, such as salaried jobs in the public or private sectors. Third, fear of asset loss and attendant worsening of living standards, due to a range of potential factors, relegates many poor cultivators to low risk/low return activities¹⁰, a fact confirmed by subsequent econometric analysis.

A second study in Bangladesh employed a similar strategy of combining descriptive statistical and econometric data on poverty dynamics with detailed life histories of households in different categories of the poverty transition matrix (Baulch and Davis 2008). Three waves of panel data were examined and complemented with life histories from around 300 individuals conducted in 2006–07. The panel data facilitated estimation of descriptive statistics on poverty transitions and subsequent econometric analysis of correlates of different poverty trajectories (Quisumbing 2011). The life histories provided a much richer depiction of the nature of processes of change.

Specifically, the authors categorized well-being trajectories into four broad categories, namely ‘smooth, saw-tooth, single step, and multi-step processes’, which are either upward or downward trending. Interestingly, most of the cases in question (146 of 184 cases) fell under the ‘saw-tooth’ category in which improvements and declines followed one another in turn. For example, changes to business income, land, livestock and employment often lead to gradual improvements which were subsequently reversed by such negative shocks as illness, injury, dowry requirements, and death of a family member. These events are hard to capture in standard panel household surveys

¹⁰ This low risk/low return behavioural pattern has been labelled the ‘Faustian’ bargain (Wood 2003).

given their frequency and heterogeneity. In addition, the non-linear nature of the processes in question may lead to specification errors in econometric models given restrictions on functional form of such relationships.

Both of these studies represent quality examples of the combined use of conditional association, a ‘difference-maker’ and mechanism-based approaches to causation, or ‘producers’. In the first example, the oral histories served to provide reasons which explained the econometric evidence in support of poverty traps. In the second, the detailed description of well-being trajectories provided a much richer depiction of the processes underlying the dynamics of poverty in figure 2. Overall, the mixed method studies provided a fuller and richer causal explanation of trajectories of change.

4.2 Combining reasons and correlates

A slightly different variant of the same distinction between processes and outcomes is the distinction between correlates and reasons as the basis for explaining action or outcomes. There is a large literature in philosophy on the causal role of reasons in explaining action (Alvarez 2010), though the focus here is on reasons for outcomes such as poverty. An interesting example of the combined use of reasons and correlates is provided by the so-called Stages of Progress (SoP) approach which has been applied in India, Kenya, Uganda, Peru, and North Carolina (Krishna 2010a, 2010b).

In the SoP methodology, community-level conceptions of poverty, elicited from focus group discussions and semi-structured interviews, serve as the basis to formulate poverty lines and create poverty transition matrices within which individual households are situated. Next, participants provide reasons to explain chronic poverty, along with descents into and escape from poverty, in their community. Such reasons invariably concern aspects of locally relevant causal processes as defined in section 3. For example, in terms of descents into poverty, a large majority of participants across all research communities identified ill-health and health-related expenses as the main underlying reasons (Krishna 2010a: 79).

The next stage in the SoP analysis involves incorporating the above-mentioned ‘reasons’ in an econometric framework, with a view to determine their statistical significance and relative importance. Logistic (logit) regression models were run for Uganda and Peru which provided estimates of the likelihood of falling into, or escaping, poverty (Krishna et al. 2006a; Krishna et al. 2006b). By way of illustration, in Uganda, many reasons elicited using qualitative techniques to explain descents into poverty were found to be statistically significant, including ill-health, healthcare expenses, death of an income earner, marriage expenses, crop disease and so on (Krishna et al. 2006a: 358). On the other hand, drunkenness and laziness were not found to be statistically significant.

The SoP approach combines mechanism-based approaches to causation, ‘producers’, and conditional association, ‘difference-makers’, in a more integrated fashion than the cases in section 4.1. Reasons and correlates are not simply combined but the former are transformed into the latter, by incorporating reasons into an econometric framework. The mixed method approach enriches the analysis of poverty dynamics but also enhances validity in cases where causal effect is found in both approaches. The mixed method design allowed for the distinct attributes of the different approaches to causation to be integrated in a way which provided a fuller explanation of poverty dynamics.

4.3 Selecting causal variables and uncovering relationships

A further use of mixed method approaches has been to rely on detailed narrative information from focus group or semi-structured interview to aid in econometric model specification. A first example is a study of poverty transitions in Kagera, Tanzania, combining analysis of panel data with information from focus group discussions and life histories (de Weerd 2010). The objective of the econometric components was to estimate the value of household assets in 2004 on the basis of household characteristics in 1993. A comparison of predicted and actual 2004 asset values revealed a number of important differences. Specifically, only around half of those households whose asset values were predicted to rise actually did so. The key role of the mixed method analysis was to use information generated from 'qualitative' inquiry to provide an explanation as to why certain households had 'defied their economic destiny'.

The narrative information uncovered a number of reasons for deviations from the model's predictions. Two sets of explanations were offered for those households who fared much worse than predicted, both of which point to limitations of analysis based on panel datasets. First, a number of causally relevant events occurred between waves of the panel including negative agricultural shocks, mortality, illness, widowhood and death, which were obviously not captured. Second, at least three causally relevant variables were not included in the survey, namely alcoholism, bad marital relations, and lack of exposure to outside information. Two explanations emerged for those who fared better than predicted relating. First, as above, there were a number of causally-relevant variables missing from the survey, in particular, exposure to outside ideas and networks. Second, the specification of the causal structure of the model was flawed in that it failed to account for the interaction between remoteness and initial conditions.

The importance of the interaction of remoteness and initial conditions was a key finding generated by the life histories and focus group discussions. In non-remote villages, initial conditions played a lesser causal role due to trade-related effects, such as the generation of casual employment, the development of business relationships with outside traders and greater access to new ideas and networks. In remote villages, such processes were not readily apparent, which compounded the effects of poor initial conditions. In light of these findings, the author re-specified his model to include an interaction term combining remoteness and initial conditions, and this proved to be statistically significant.

A similar example is provided by Quisumbing's (2011) study of poverty dynamics in Bangladesh which combined results of econometric analysis of panel data with narrative information generated in focus group discussions and life histories. Information from the latter suggested that the econometric model should be re-specified. Specifically, participants placed considerable importance on the joint effect of illness and dowry expenses in precipitating descents into poverty or precluding escapes. Accordingly, the shock variable in the model was re-specified as an interaction term comprising these two variables and was found to reduce the probability of exiting poverty in a statistically significant way.

In both of the above examples, mechanism-based approaches, 'producers' generated insights which were incorporated into conditional association-based accounts of causation, 'difference-makers'. Specifically, focus group discussions and life histories generate insight about causal variables and their interrelationships which informed model specification. Once again, the mixed method approach served to improve upon the explanation of the dynamics of poverty.

4.4 ‘Thickening’ the description of causal variables

Clifford Geertz (1983) popularized the term ‘thick description’ to refer to the hermeneutic content of applied anthropology. ‘Hermeneutics’ is the interpretative understanding of intersubjective meanings, or the conceptual categories and local understandings which give meaning to empirical phenomena (Kanbur and Shaffer 2007). Hermeneutics is integral to our everyday understanding of the world and to applied research, where a frequent objective is to interpret the ‘interpretations’ of research subjects, or engage in a so-called ‘double hermeneutic’ process (Giddens 1976: 162). The absence of such understanding can generate serious biases for any type of analysis in the social sciences, including causal analysis of poverty dynamics. As philosopher Charles Taylor puts it: ‘we interpret all other societies in the categories of our own’ (Taylor 1985: 42).

An example of a contribution along these lines is a collaborative study conducted in KwaZulu-Natal, South Africa (Adato et al. 2006, 2007). The study employed a very similar methodology to that of Barrett et al. (2006) mentioned above. Two waves of panel data (1993 and 1998) from the KwaZulu Natal Income Dynamics Survey (KIDS) were combined with detailed case studies of households located at different quadrants in the poverty transition matrices. As with Barrett et al. (2006) the econometric analysis found evidence of poverty traps for those households below a critical asset threshold.

A core contribution of the case studies, conducted in 2001, was to probe in greater detail the experiences of different household types with emphasis on the events precipitating downward and upward well-being trajectories. One of the key findings to emerge involved the role of social capital, which was not included among assets used to estimate structural income in the econometric analysis, although it was used in other modelling work using the same dataset (Malluccio et al. 2000). The term itself was found to cover around twenty different ways in which social assets are used, including assistance in looking for work, remittances, burial societies, cash loans or gifts, rotating savings and credit associations, community gardens, and others. It was also significant that some forms of social capital were found to negatively impact upon economic outcomes such as social pressure on small business owners to overextend credit. The key point is that inclusion of a ‘social capital’ variable in an econometric model without a prior appreciation of the multiple meanings of the term can generate quite misleading results.

The core role of mixed method results was to provide a better understanding of the causal variables which account for descents into, and escapes from, poverty. Unpacking the term ‘social capital’ through ‘thick description’ revealed the multiple constituent elements of the term.

5 Conclusion: the summary case for causal pluralism and mixed methods

It was argued in Section 2 that the shift from poverty status to poverty dynamics, from stocks to flows, matters for a number of reasons. The shift to causal pluralism and mixed methods approaches also matters for the analysis of poverty dynamics in at least three ways.

First, it facilitates empirical validation or adjudication of research results. Accordingly, it addresses the pervasive problems of the under-determination of theory by fact, i.e. that empirical validation/adjudication is not independent of theory, and the over-determination of fact by theory, i.e. that there are a wide range of plausible, theory-imbued ways of explaining social phenomena. As Little (1998: 173) aptly puts it: “There are no pure “facts,” but only facts as couched in one conceptual scheme or another. There are no pure observations, but rather observations couched in a theory-laden vocabulary. Theories bring with them their own empirical criteria, which bias the

findings in support of them.’ As illustrated by a number of the cases studies in Section 4, the validity of research results is enhanced if similar research findings are generated by different methodological approaches.

Second, it is one way to address the fact that all knowledge is partial, and determined, in part, by our conceptual and analytical priors. In the present case, the choice of approach to causation, and strategy of causal inference, discussed in Section 3, has implications for the sorts of research questions included, and excluded in the inquiry, and the ways of addressing those included. In this context, restricting the field of inquiry to any one particular approach to causation, or set of research methods, creates blinders, and sacrifices potentially important information. In cognitive psychology, the ensuing analytical bias has been labelled the WYSIATI principle : ‘what you see is all there is’ (Kahnman 2012: 85–88). For research and policy-related work, an analogous WYSIWYG principle applies: ‘what you see is what you get’.

Third, it facilitates understanding of the inherent complexity of empirical phenomena, such as the causal systems generating poverty. There is a wide range of potential causal variables driving poverty dynamics, that are interacting with one another in complex ways which are hard to demonstrate empirically. This complexity suggests that any one causal approach will be inadequate to provide a full account of the causal systems in question. As argued by Cartwright (2007) and others, no one concept of causation, or model of causal inference, does justice to the wide varieties of causal phenomena in the world. Further, as demonstrated by a number of the examples presented in Section 4, causal pluralism and mixed methods can serve to illuminate different aspects of underlying causal structures and relationships and enrich causal analysis.

For all of these reasons, causal pluralism and mixed method approaches have added value to the analysis of poverty dynamics. They can, and have, led to more complete understanding and fuller explanation. This does not imply that such approaches always add value nor that they are necessary for understanding and explanation. The relevant research question should obviously dictate the methodological choices at hand. Still, the difficulties of empirical validation/adjudication, the partiality of knowledge and the complexity of causal systems do raise doubts about the adequacy of any one approach to causation or set of research methods, and provide grounds for a bias in favour of causal pluralism and mixed methods to the study of poverty dynamics.

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