The Value-Added of Causal Pluralism to Poverty Analysis

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Abstract

This article explores the notion of 'structured pluralism' drawing on a recent empirical body of literature in which multiple research, or 'Q-Squared', approaches to causal analysis of poverty analysis have been used in the Global South. It maintains that understanding linguistic differences between schools of thought is quite integral to methodologically-aware critique and to improved methodological practice. The various strands in the Q^2 literature together provide a case for methodological pluralism based on claims that knowledge is partial, empirical adjudication is imperfect, the world is complex and combining multiple research approaches adds value. The goals of understanding and explanation are best served if research questions dictate choice of methodological approach rather than the other way around.

Keywords: pluralism, causation, poverty, mixed methods, schools of thought

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1 Introduction

In an influential article (Dow, 2004), and elsewhere (Dow, 1997, 2008), Sheila Dow has presented a case for 'moderate' or 'structured' pluralism as a meta-methodological position. Her position is particularly relevant in light of a growing chorus of voices in favour of methodological pluralism within economics[1], and the social sciences, more generally[2]. Of the different aspects of Dow's argument, three are particularly germane.

First, Dow affirms the necessity of 'structuring' pluralism through 'schools of thought' which are roughly equivalent to Kuhnian 'paradigms' in 'scientific communities'. Otherwise, the content of methodological pluralism would be excessively general and the scope for effective communication limited. According to Dow (2004, pp. 282, 287): '… pluralism must have some identifiable characteristics. It is therefore not unlimited, or unconstrained … [it] needs to be structured in order to have meaning. Schools of thought provide some important elements of that structure'.

Second, Dow emphasises the centrality of language, and translation across linguistic communities, for effective communication between schools of thought. The argument is Kuhnian in that paradigms, or schools of thought, amount to different systems of belief and categorisation of the world, reflected in differences of language. As Dow (2004, pp. 276, 279) phrases it: '… the role of language for knowledge is crucial. Different understandings of terms are very important … since they reflect different theories of knowledge … one of

[1] See, for example, Fullbrook (2008), Mearman (2008) along with mission statements of the Real World Economics Association (www.paecon.net) and the Institute for New Economic Thinking (www.ineteconomics.org).

[2] The trend is evidenced by the emergence of such academic journals as the *Journal of Mixed Method Research* and the *International Journal of Multiple Research Approaches*, the publication of first and second editions of the *SAGE Handbook of Mixed Methods in Social and Behavioral Research* (Taskahkkori and Teddle (Eds.), 2003 and 2010, and so on.

the important legacies of Kuhn was to increase awareness that communication across paradigms required a particular effort of translation'.

Third, particular importance is placed on the role of methodologically-aware critique or criticism in Dow's proposal. Here, she draws, *inter alia*, on the work of Bruce Caldwell (1982, 1988), who has argued that in order to accomplish the goals of methodological research: 'the pluralist undertakes critical evaluations of the strengths and limitations of various research programs … to enhance understanding of what economic science is all about and with luck by so doing, to improve it' (Caldwell 1988, p. 234). In this sense, criticism provides added structure to pluralism but also facilitates understanding of research paradigms and ideally, improved methodological practice.

The primary objective of this article is to illustrate these three aspects of Dow's argument for structured pluralism drawing on a recent empirical body of literature in which multiple research approaches, or combined 'qualitative' and 'quantitative' ('Q-Squared') approaches, to poverty analysis have been used in the Global South. The specific focus is on analyses by multiple research approaches of the causation of poverty, or 'structured, causal pluralism'. The analysis demonstrates how understanding linguistic differences about the meaning of causation and model of causal inference across approaches to poverty analysis ('schools of thought') is quite important for an appreciation of their respective strengths and limitations. Further, it directs attention to improving methodological practice by outlining the real value-added of causal pluralism for understanding and explaining poverty.

The format of the paper is as follows: Section 2 addresses the three above-mentioned aspects of structured pluralism namely, schools of thought, language and critique, as applied to the causal analysis of poverty. It identifies three broad approaches within

poverty analysis, defined in terms of their understandings of the nature of causation and causal inference, and discusses their strengths and limitations. Section 3 focuses on improving methodological practice. Empirical examples of the value-added of analysis of poverty combining multiple research approaches are presented, derived from a prior understanding of linguistic differences between approaches to causal analysis. Section 4 presents a summary case for methodological pluralism drawing on the experience of the Q-Squared research program. A final section concludes.

There are two preliminary points to note about the argument in this article. Dow places considerable emphasis on ontological considerations in determining methodological orientation, consistent with her critical realist perspective. She has argued that social reality is characterised by an open-system ontology whose inherent complexity requires multiple methodological approaches (Chick & Dow, 2005). Ontological issues have tended not to figure centrally within the Q-Squared literature, and will not be discussed in sections 2–3. Nevertheless, they are relevant and form part of the case for methodological pluralism presented in section 4.

Second, it is likely that Dow's notion of 'schools of thought' is meant to apply to the main competing research traditions in economics. A typical categorisation within development economics might include Neoclassical, New Institutionalist, Formalized Political Economy, Marxian and Feminist perspectives, for example, which arguably share different ontological, methodological and methodic features (Olsen, 2006, 2007). Nevertheless, Dow explicitly associates her idea of 'schools of thought' with Kuhn's notion of 'paradigms' among scientific communities, and argues, in fact, that the two terms may be used interchangeably (Dow, 2004, p. 277). The Kuhnian origins of Dow's concept justify its application to approaches to poverty analysis.

Specifically, in the *Structure of Scientific Revolutions*, Kuhn defined the term 'paradigm' broadly, and allegedly used it in a wide variety of ways.[3] In subsequent work, he distinguished a global, 'sociological' sense of the term, 'beliefs, values, techniques and so on shared by members of a given community', and a local, 'concrete puzzle-solving' sense of 'exemplary past achievements' (Kuhn (2012)[1969], pp. 174, 181). Both constitute 'ways of seeing' the world, (Kuhn (2012)[1969], p. 189), which define 'the legitimate problems and methods of a research field' (Kuhn 2012 [1962], p. 10). Understood in this broad way, the notion of 'schools of thought' may legitimately be applied to different traditions of poverty analysis. As discussed in the following section, such traditions embody not only different research methods but also different understandings of the idea of causation, methodological approaches to causal inference, units of knowledge and analytical foci.

2 Schools of thought in the causal analysis of poverty[4]

The objective of this section is to illustrate how an assessment of the strengths and limitations of different methodological approaches requires a prior understanding of linguistic differences between them. Sections 2.1-2.3 outline differences in the meanings of causation, and correlative models of causal inference, between three schools of thought in poverty analysis namely: applied micro-econometrics and conditional association; experimental or quasi-experimental designs and counterfactual dependence and mechanism-based approaches. Section 2.4 distils a number of strengths and limitations of

[3] Masterman (1970) identified twenty one usages of the term which she subsequently categorised as metaphysical, sociological or construct paradigms.
[4] A fuller treatment of these issues is proved in Shaffer (2013b, ch. 5).

the approaches which are revisited in the discussion of the value-added of structured causal pluralism in Section 3.

There is an important caveat to bear in mind about the relationship between the three approaches to poverty, which are presented as contrasting ideal types. In practice, there is hybridity within, and overlap between, approaches. For example, applied instances of counterfactual dependence, such as randomised controlled trials (RCTs), present certain types of information on causal mechanisms as discussed in Section 2.2. Further, some mechanism-based approaches rely on counterfactual dependence to underpin claims about the effectiveness of mechanisms (Glennan, 2011). In addition, counterfactual analysis may appear in conditional association, such as econometric models, by say inclusion of a variable for program participation. Nevertheless, different forms of causal reasoning do tend to characterise ideal types of each of these approaches, and are important when considering their strengths and limitations.

2.1 Applied micro-econometrics and conditional association

In the applied tradition of micro-econometrics, causal analysis of (consumption) poverty entails estimating an expenditure function which represents the monetary value, or cost, of a given level of utility, appropriately adjusted for differences in household composition and prices (Deaton & Muellbauer, 1980). Next, determinants of (low) expenditure, or poverty, are estimated econometrically using variables representing such factors as household composition, physical assets, human capital, region, community characteristics and so forth. If poverty is represented as a dichotomous variable, specification may take the form of a logit or probit model. Such models may be interpreted as reduced form estimates of the underlying relationships generating expenditure and only require that the included variables

be exogenous (Glewwe, 1991). In applied poverty analysis, statistically significant variables are typically given a causal interpretation (Haughton & Khandker, 2009).

Conditional association is the approach to causation which underpins the micro-econometric analysis. Here, causation is defined in very similar terms to that of probabilistic theories of causation[5], originally developed by Reichenbach (1956) and Suppes (1970).[6] The core intuition of these theories is that causes raise the probability of their effects, such that the conditional probability of *b* given *a*, is higher that the unconditional probability that *b* occurs.

There are many challenges for conditional and probabilistic accounts of causation, such as inferring the direction of causality and dealing with spurious correlation, which derive from the underlying problem of inferring causation from conditional association. Hoover (2008) has distinguished four major approaches in econometrics which address this underlying problem based on whether they rely on information about the underlying causal system or temporal ordering, on the one hand, and whether they include *a priori* or empirical information, on the other. The 'empirical-causal system' tradition is the most relevant for our purposes.

A classic statement is Simon's (1953) argument for the use of information from natural or controlled experiments to make inferences about the direction of causality, an approach which has been generalised by Hoover (1990). A more recent trend within this tradition involves the use of instrumental variables to make inferences about the underlying causal relationships (Angrist et al., 1996). As discussed in Section 3, analyses combining

[5] Probabilistic causation is not the same as conditional association in that other approaches to causation are probabilistic. Further, probabilistic causation was not fully integrated into econometrics until Haavelmo's seminal paper, 'The Probability Approach in Econometrics' in 1944 (Morgan 1990).
[6] This discussion is based on Hitchcock (2002 & 2010).

multiple research approaches have played an important role in this identification exercise through their role in facilitating model specification.

2.2 Experimental or quasi-experimental designs and counterfactual dependence

In the context of experimental or quasi-experimental approaches to impact assessment, the causal effect of a project, or the average treatment effect on the treated, is the statistically significant difference in outcomes between program participants and non-participants, or treatment and control groups, respectively. For experiments, program participation is randomly assigned and consequently, population characteristics of treatment and controls groups are identical in expectation over large enough numbers (Duflo et al., 2008).[7] The increasing use of randomised control trials (RCTs), or the randomisation turn, has been amongst the most heralded recent methodological developments in microeconomics.

There are a number of quasi-experimental approaches to impact assessment which differ in the statistical techniques used to construct comparison groups. Examples include regression discontinuity designs, where individual just above and just below project eligibility thresholds are compared, pipeline approaches where eligible persons in line for project participation are compared with actual project participants, and matching procedures whereby individuals in comparison and treatment groups are matched on the basis of similar observable characteristics (Ravallion, 2008). One widely used technique, propensity score matching, relies on logistic regressions to estimate the probability of participation, or the propensity score, which serves as the basis for the subsequent

[7] The main complications for RCTs arise when this assumption is violated through incomplete compliance with assignment, externalities or spill-overs between treatment and control groups, non-random attrition among treatment and controls and so forth.

matching, though other non-parametric matching estimators are also available (Abadie & Imbens, 2009).

Counterfactual dependence is the approach to causation which underpins experimental and quasi-experimental designs. The core intuition of counterfactual dependence is that for *a* to cause *b, b* would not have occurred in the absence of *a* (Menzies, 2008). In the language of impact assessment, the causal claim that project *a* causes outcome *b*, depends on the counterfactual claim about what would have happened to *b* in the absence of *a*.

Proponents of RCTs and quasi-experiments explicitly invoke counterfactual dependence in their framing of the core causal question. With respect to RCTs, Duflo et al. (2008, p. 3899) write: 'Any attempt at drawing a causal inference … requires answering essentially counterfactual questions: How would individuals who participated in a program have fared in the absence of the program?' Likewise, the 'archetypal evaluation problem' in the context of quasi-experiments has been phrased as follows*:* 'an "impact evaluation" assesses a program's performance in attaining well-defined objectives against an explicit counterfactual, such as the absence of the program' (Ravallion 2008, p. 3789). Both represent applied attempts to operationalize the concept of counterfactual dependence with a counterfactual model of causal inference (Scriven 2008, p. 15). The specific causal model of counterfactual dependence, known as the Holland-Rubin framework, is explicitly acknowledged by proponents of experiments (Duflo et al., 2008) and quasi-experiments (Ravallion, 2008) as the foundation of their work.

2.3 Mechanism-based approaches

In the cases of conditional association and counterfactual dependence, causal effect is attributed if associations are uncovered between dependent and independent variables after

conditioning on all other causal factors determining outcomes or project participation. Mechanism-based approaches, on the other hand, depend upon identifying the causal mechanisms generating causal effects. According to Little (1998, p. 202): '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.'

Mechanism-based approaches figure prominently in those approaches to causation which rely on dialogical and mapping techniques to make causal inferences. Dialogical techniques include focus group discussions, semi-structured interviews, life histories and so forth (Roche, 1999). Mapping techniques have figured prominently in the participatory rural appraisal literature and include causal maps, flow charts, timelines, among others. Applied mechanism-based approaches attempt to forge causal links between nodes in a causal chain based on the mechanisms linking them.

In the specific context of impact assessment, such links are established between program activities or outputs and development outcomes or impacts, drawing on theory or the results of dialogic inquiry. Examples of such approaches within the evaluation literature include the Context-Mechanism-Outcome (CMO) model of Realistic Evaluation (Pawson, 2002), applied instances of theory-based evaluation (White 2009), some types of participatory assessment (Mayoux and Chambers, 2005) and applied ethnographic evaluations (Adato, 2008). Most of the examples presented in Section 3 rely heavily on dialogical methods, such as focus group discussions and semi-structured interviews, to establish the causal links in question.

There is no consensus in the literature as to the precise definition of causal mechanism. In the social sciences, causal mechanisms have been defined in a variety of ways (Hedström & Swedberg (Eds.), 1998; Pickel, 2004). Mahoney (2001) has identified at least

24 definitions of the term, which he classifies into three broad categories namely, sets of intervening variables linking causes and effects, mid-level theories which provide information about particular elements of higher-level theories and unobserved entities which have causal effects. As discussed in section 2.4.1, in the context of causal analysis of poverty, mechanisms usually refer to the causal processes generating outcomes.

2.4 Comparative Strengths and Limitations[8]

It has been argued that the three above approaches rest of different notions of what constitutes causation and how to go about establishing it empirically. Of the differences between these schools of thought, three are particularly relevant when considering their comparative strengths and limitations with implications for designs combining multiple research approaches. The differences in question concern distinctions between outcomes and processes, observables and dialogical information and 'thick' and 'thin' description.

2.4.1 Outcomes vs. 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, p. 1541).

As argued by Lipton and others (Bardhan & Ray, 2006), the outcome/process distinction does have cutting power when distinguishing between 'typical' analysis of social phenomena in economics and disciplines such as social anthropology. While not absolute, the distinction does indeed point to different areas of emphasis between econometric and

[8] Portions of this section draw on Shaffer et al. 2008).

experimental/quasi-experimental approaches on the one hand and mechanism-based approaches, on the other.

In terms of the applied econometrics of poverty, reduced form poverty status regressions, discussed in Section 2.1, present an extremely limited account of processes. Emphasis is placed on uncovering statistically significant conditional associations between modelled variables and poverty (or expenditure) outcomes. Typically these exercises generate long lists of variables which are considered, in some way, to be causally associated with poverty. Such analyses are only mildly suggestive of the processes generating, or the reasons for, the observed associations.

In the case of experimental and quasi-experimental approaches, analytic focus is once again on causal effects[9]. Establishing causal claims, or demonstrating program impact, rests on differences in the value of outcome/impact indicators between treatment and control/comparison groups. In his seminal paper outlining the Holland-Rubin framework, Holland (1986, p. 945) is very explicit about this emphasis and provides a rationale:

> Others are interested in understanding the details of causal mechanisms. The emphasis here will be on *measuring the effects of causes* because this seems to be a place where statistics, which is concerned with measurement, has contributions to make.

Mechanism-based approaches, on the other hand, focus on processes in a more direct way. In fact, in the context of applied poverty analysis and impact assessment, mechanisms typically refer to the causal processes generating observed outcomes. Processes comprise the causal variables, the links or pathways between them, i.e. the causal 'tree', as well as an

[9] RCTs may provide a limited account of causal mechanisms by randomising assignment to sub-components of a project, or causal intermediaries, to determine which are effective in producing results. Such analysis of mechanisms contrasts sharply with 'thicker' accounts generated by dialogical inquiry, discussed in Section 2.4.3.

explanation of why they are linked. Mechanisms, in this sense, focus on the reasons for observed outcomes. Their primary contribution is to shed light on the 'how' and 'why' questions surrounding causal effects.

A major contribution of analyses of poverty using multiple research approaches discussed in Section 3, has been to combine analyses of outcomes and processes.

2.4.2 Intersubjective Observables vs. Dialogical Information

As second relevant distinction concerns the core unit of knowledge in the different approaches. In the applied econometric tradition, there is a long tradition of reliance on data which is intersubjectively observable, at least in principle. This commitment which has historical roots in the philosophical tradition of Empiricism[10], has figured centrally in modern utility theory[11] and in economics more generally.[12] In the applied econometrics of poverty, poverty is represented as consumption expenditure, which is in principle observable, though in practice derived from results of household survey questionnaires. The same applies for the right-hand side variables in poverty status regressions representing household composition, physical assets, human capital, region, community characteristics and so forth.

In the case of experimental and quasi-experimental designs, the fundamental problem of causal inference is defined as a problem of observation. Specifically, the same person, household, village, etc. cannot partake in both treatment and control groups simultaneously

[10] A classic statement is from Popper (1959, p.103) in his discussion of 'basic statements': '… a basic statement must also satisfy a material requirement … this event must be an *"observable"* event; that is to say, basic statements must be testable, inter-subjectively, by "observation"'.
[11] Revealed preference theory was an explicit attempt by Samuelson (1966, p. 13) to base consumer theory on intersubjectively observable information, an orientation 'more directly based upon those elements which must be taken as *data* by economic science.'
[12] See Kanbur & Shaffer (2007) and Shaffer (2013b) for a fuller treatment of these issues.

and as such, differences in outcomes between treatment and controls cannot be observed. According to Holland (1986, p. 947): 'It is impossible to *observe* the value of Yt (u) and Yc (u) on the same unit, therefore, it is impossible to observe the effect of t on u. The emphasis is on the word *observe* [original emphasis].' The core rational for constructing control groups is to address, in a practical way, the fact that counterfactuals are 'unactualised possibilities' which do not exist, and are thus, not observable (Glymour, 1986).

Mechanism-based approaches in poverty analysis have tended to rely much more heavily on information generated by dialogical processes such as focus group discussions, semi-structured interviews, life histories and so on in analysing the causes of poverty. A core rationale advanced by some in this tradition is that there is a fundamentally hermeneutic dimension to social inquiry which entails the interpretative understanding of 'intersubjective meanings,' or the core categories, beliefs and values which give meaning to social phenomena. Understanding the causation of poverty entails a "double hermeneutic" analysis of interpreting a world which is pre-interpreted by social actors (Giddens, 1976, p. 162). Failure to do so introduces serious biases in the analysis of poverty: "we interpret all other societies in the categories of our own" (Taylor, 1985, p. 42). A major objective of mechanism-based approaches in practice is to elicit local understandings of the major causes of poverty, drawing on local categories of explanation.

The integration of intersubjective observables and dialogical information in different ways has been a major contribution of Q^2 analyses of poverty discussed in Section 3.

2.4.3 'Thick' and 'Thin' Description

The term 'thick description' was popularised by Clifford Geertz (1983) to denote the hermeneutic content of applied anthropology, based on interpreting intersubjective meanings as defined above. I use the distinction in the more everyday sense to refer to the level of detail and richness of explanation of social phenomena.

In the case of both applied econometric analysis of poverty and experimental or quasi-experimental designs, explanation of the causes of poverty is relatively 'thin.' In the former cases, analysis is based of lists of variables which are found to be statistically significant. Further inquiry tends to focus on dealing with econometric problems which may arise such as endogeneity or non-linearities in the modelled relationships. In the latter case, causal explanation hinges on differences in values of select outcome indicators between treatment and control groups. Subsequent analysis tends to address violated assumptions of the Holland/Rubin model, such as externalities or spill-overs between treatment and controls (see note 6).

Mechanism-based approaches, which rely heavily on dialogical information, typically produce much thicker accounts of the causation of poverty. Detailed life histories may be generated which record a range of potentially interacting events affecting individuals or households along with household or individual response. Rich accounts of behavioural motivation may also emerge, documenting a range of reasons for individual and collective action. In general, detailed narrative information is produced about the nature of social relationships and how they affect the causation of poverty.

The use of 'thick' description to interpret or bolster 'thin' analyses of the causes of poverty is another major contribution of multiple research approaches discussed in Section 3.

3 Value-Added of Structured Causal Pluralism[13]

It was argued in section 2 that 'language matters' when attempting to understand differences between schools of thought and to tease out their respective analytical strengths and weaknesses. Language also matters for improved methodological practice. The objective of this section is to show how an understanding of the strengths and limitations of the three schools of thought provide an entry point for analysis using multiple methods. The examples presented below all draw on the recent body of Q^2 literature on analyses of the causes of poverty in the Global South which combine multiple research approaches.

The presentation of materials follows a typology of usages of mixed method research which distinguishes between development, triangulation, complementarity and expansion (Greene et al., 1989). Development refers to the use of methods from one approach to assist in the methodological development of another through say, using focus groups to better structure the wording of fixed-response surveys. Triangulation uses different of methods to investigate the same phenomenon to assess, and/or bolster, the validity of research results. Complementarity relies on a particular methodological approach to clarify, elaborate upon or better interpret the results of another. Finally, expansion refers to the use of different methods to address related, but distinct, components of an overall research question such as the combined analysis of outcomes and processes.

[13] This section is based on Shaffer (2013a&b).

3.1 Development

There have been a number of good examples of the use of dialogical information from focus group discussions and semi-structured interviews to facilitate model specification. A first is the so-called 'participatory econometrics' approach, a term coined by Rao (2002, 2003). In their study of sex workers in Calcutta, Rao et al. (2003) sought to estimate the revenue loss, or compensating differential, associated with condom use. The main econometric problem is that unobserved characteristics of sex workers, which are correlated *both* with condom use and prices, can bias results. For example, if sex workers with more desirable, but unobserved attributes, are better able to require condom use of clients *and* to command high prices, then there will be a downward bias in the value of the differential.

The key Q^2 contribution was to use dialogical information to search for an instrumental variable, or instrument, to deal with the econometric problem. In this case, the instrument must affect the price of sex acts only through its effect on condom use, and not be correlated with unobserved variables which also affect prices. Through semi-structured interviews, the research uncovered just such an instrumental variable. The All India Institute of Public Health and Hygiene has initiated an HIV/AIDs awareness program throughout the area which was implemented in a seemingly random manner. Further, participation in the program appeared to be effective at promoting condom use. Accordingly, participation in this program was used as an instrument to estimate the relationship between condom use and price.

A second example involved econometric estimation of panel data on the dynamics of poverty in Bangladesh (Quisumbing, 2011). This study included an initial stage of focus group discussions to refine research questions and identify variables for inclusion in the

household survey. A second stage combined panel data with life histories. Information from the latter suggested that the joint effect of illness and dowry expenses contributed to real hardship, either precipitating descents into poverty or precluding escapes. Accordingly, the shocks variable in the model was re-specified as an interaction term combining these two elements and was found to be statistically significant.

In both of these examples 'thick' description generated from dialogical information in focus group discussions served to shed light on the nature of causal processes and to inform model specification, which was subsequently estimated using intersubjective observable data.

3.2 Triangulation

Triangulation is about investigating the same phenomena using different methodological approaches to determine if they arrive at similar research results. A good example is provided by an impact assessment of the Hunger Eradication and Poverty Reduction (HEPR) program in Vietnam using multiple research approaches (Shaffer, 2011 & 2012).

The study used two methods of comparison group construction with a view to determine if they would generate similar results or, if not, to spur reflection as to why. The first approach involved a quasi-experimental design, propensity score matching, which entailed estimating a logistic regression of program participation. Matching was done for the nearest one, three and five neighbours and standard errors calculated to allow for tests of statistical significance of mean differences. The second approach relied on a thought experiment where subjunctive conditional (if-then) questions were posed about what respondents would have done in the absence of the program.

The combined approach was applied to assess the impact of tuition and school maintenance fee exemption upon school attendance. Propensity score matching results suggested a statistically significant increase in school attendance of between 3% and 15% taking into account standard errors and depending on the comparison group in question. The self-reported information found that around 12% of respondents would not have enrolled their children in primary or secondary school in the absence of the fee exemption. This figure is within the range of program impact found in the propensity score matching exercise which examined *actual* differences in attendance between program participants and non-participants.

This example illustrates the combined use of dialogical ('thought experiments') and intersubjectively observable information (logistic regression results) in constructing a comparison group within the context of a counterfactual dependence-based approach to causation. In this case, the fact that both approaches generated similar results serves to bolster the validity of the findings about impact.

3.3 Complementarity

There are good examples of using the results of thick description generated from dialogical inquiry to interpret results, in particular counterintuitive results, of statistical analyses of household survey data. The first example involves a study of child labour in Ethiopia using multiple research approaches (Woldehanna et al., 2005 & 2008). A household survey was administered in 2002 and subsequent econometric work undertaken to estimate determinants of child schooling and labour. This analysis was followed-up by semi-structured interviews conducted in 2005 with a view to provide a richer understanding of the econometric results.

Econometric results suggested, as expected, that the likelihood of children's participation in activities other than full-time schooling declines with paternal education. On the other hand, and surprisingly, the econometric analysis found the opposite result for maternal education. The semi-structured interviews provided an explanation. Women with higher levels of education are more likely to work outside their homes, which increases the domestic work burden of older children who assume responsibility for childcare and other tasks.

In addition, regression results did not find a statistically significant effect of landholding size on the probability of children's schooling or participation in the labour market. Information from the semi-structured interviews suggested a number of explanations. First, children in households with more land are frequently working on the farm as would be expected given the high opportunity costs, or income foregone, of not working and imperfect labour or credit markets which precludes hiring sufficient labour. On the other hand, children from households with less land are also frequently working, given the imperative of generating income in poorer families living at the margin. As a result, the 'opportunity cost effect' among households with large land size is offset by a 'wealth or poverty effect' among those with smaller landholdings, which render insignificant the relationship between landholding and schooling.

A second example, which combines complementarity and development, is de Weerdt's study of poverty transitions in Kagera, Tanzania, which combined panel data from the 1994 and 2004 Kagera Health and Development Survey (KHDS) with information from focus group discussions and life histories (de Weerdt, 2010). Econometric analysis was performed on the data with a view to predict 2004 asset values on the basis of 1993 household characteristics. A comparison of model predictions with actual 2004 data

revealed significant discrepancies. In particular, only around half of those whose asset values were predicted to increase actually did so. The key role of the Q^2 analysis, was to use dialogical information to explain why certain households had 'defied their economic destiny'.

The narrative information suggested a number of factors as explanations of deviations from predictions of the model. Concerning 'unexpected losers', one explanation concerned intervening events between waves of the panel such as agricultural shocks, mortality, illness and widowhood or death. A second reason for the discrepancies had to do with variables not included in the survey such as alcoholism, bad marital relations and lack of exposure to outside information. With respect to 'surprise winners,' missing variables in the survey, such as exposure to outside ideas and networks, were important as was the incorrect specification of the causal structure of the model, in particular, the interaction between remoteness and initial conditions.

The life histories and focus groups suggested reasons why the interaction between initial conditions and remoteness, and not only their individual effects, was important by contrasting the situation in remote and non-remote villages. In the latter, initial conditions proved less important due to opportunities associated with trade, such as the availability of employment as casual labourers, the emergence of business relationships with outside traders and the influx of money and access to new ideas and networks outside the village. These positive effects were absent in remote villages which compounded the effects of poor initial conditions. In light of these findings, a re-specified model was estimated including an interaction term of remoteness and initial conditions which proved to be statistically significant.

In both of these cases mechanism-based approaches to causation were used to provide fuller explanations of results from approaches based on conditional association. In practice, this involved reliance on 'thick', dialogical information on processes to interpret relatively 'thin', intersubjectively observable information on outcomes.

3.4 Expansion

In the Q^2 literature, there have been a number of good examples of expansion, which have tended to combine analyses of outcomes and processes. A first example involved the above-mentioned study of the dynamics of poverty in Bangladesh (Baulch and Davis, 2008). Three waves of panel data, between 1996 and 2003, were combined with life histories of around 300 individuals conducted in 2006–07. The individuals selected for the life histories were in different quadrants in the estimated poverty transition matrices. The panel data allowed for the generation of descriptive statistics on poverty transitions along with subsequent econometric analysis on determinants of poverty transitions and consumption expenditure per capita (Quisumbing, 2011). The life histories provided a much richer depiction of the nature of trajectories of change.

Four patterns of change emerged from the narrative information, described as 'smooth, saw-tooth, single step and multi-step processes', which are either upward or downward trending. Of these, the vast majority (146 of 184 cases) were characterized by the saw-tooth pattern in which improvements and declines follow one another intermittently. Positive changes related to business income, land, livestock and employment trigger gradual improvements which are often suddenly reversed by negative shocks associated with illness or injury, dowry/marriage, death of a family member and so forth. The frequency of such events and their varied nature, make them hard to capture in standard panel household

surveys. In addition, the non-linear nature of the processes in question may be incorrectly specified in econometric models given restrictions on the functional form which such relationships take.

A second example, which combines expansion and complementarity, is provided by the International Food Policy Research Institute's impact assessment of the Social Risk Mitigation Program in Turkey (Adato, 2008). The program provided cash payments conditional upon school enrolment for boys and girls along with vaccinations and regular check-ups for children. Ethnographic work, involving extended village stays in 6 localities, was combined with a quasi-experimental analysis drawing on household survey data. The particular technique used, regression discontinuity design, compares outcomes among households who fell just above, and just below, the eligibility threshold for program participation.

The quasi-experimental analysis found that the program raised secondary school enrolment for girls by around 10%, a statistically significant effect. Nevertheless, secondary enrolment rates remained low for program participants in rural areas. For example, secondary enrolment rates for girls were below 40%. The key contribution of the ethnographic work was to explain some of the reasons why. For boys, doubts were expressed about the value of education in the context of high unemployment and a society where honour is bestowed on those working on the land. For girls, the potential employment or wage effect of additional schooling was not highly valued given the overriding importance of traditional female roles as mothers and wives. Further, concerns were raised about threats to family honour and reputation associated with girls schooling. According to one father in a village in the province of Van: 'the girls have only their honour as a valuable thing in the village and it is my duty to prevent any bad words about

that… No one sends their daughters to school anyway. Why should I send mine? They will look at them in a bad way' (Adato 2008, p. 231).

The first example illustrated the combined use of conditional association and mechanism-based approaches to causation while the second demonstrated the combination of counterfactual dependence and mechanism-based approaches. In both cases, 'thick' description of processes based on dialogical information was combined with thin account of outcomes based on intersubjective observable to provide a fuller account of causation.

4 A Case for Methodological Pluralism[14]

A strong case for methodological pluralism emerges when reflecting upon the results of the Q^2 research program based on the integration of different schools of thought in poverty analysis. Before presenting this case, however, it is important to be clear about how the term 'methodological pluralism' is being used in the present context and how this differs from other usages in the literature.

There is no consensus about the definition of methodological pluralism, nor its relationship to issues of ontology, methodology and method. For example, it has been defined as a denial of methodological exclusivism, or the view that there is one set of rules which define social inquiry (Roth, 1987). Alternatively, it has been defined as a meta-methodological position, 'that methodologists study a range of methodologies' (Dow, 1997). In its present usage, drawing on the Q^2 experience, methodological pluralism has three main features: i) the objects of pluralism are research traditions, approaches, 'paradigms' or 'schools of thought' and not methods *per se*; ii) in many cases, such pluralism extends to epistemological assumptions which explicitly or implicitly underwrite

[14] This section draws closely on Shaffer (2013b, ch. 8).

relevant features of research approaches (for example, as discussed in Section 2.4.2, the distinction between intersubjective observables and dialogically derived information as core units of knowledge, is derived from epistemological tenets of Empiricism and hermeneutics); iii) it is agnostic about the true 'nature' of reality, and consequently silent on classical debates between idealism and realism[15], for example, thought it does derive support from the inherent complexity of much empirical phenomena under investigation (as discussed below).

It should be emphasised that the argument is not for pluralism of method nor for a pluralist methodology for two main reasons. First, as discussed above, the objects of pluralism are research traditions, approaches, 'paradigms' or 'schools of thought'. Methods take on particular meaning only when situated within a methodological, and often epistemological, framework. For example, combining semi-structured interviews with econometric modelling is certainly about mixing methods but it is also about combining ways of understanding causation and causal inference, intersubjectively observable and dialogically derived data, thick and thin description and so forth. Second, a 'pluralist methodology' may be taken to imply that all inquiry should involve multiple methods or research approaches. The argument here, however, is that the methodological choice decision should be driven by the research question at hand. A single research approach may be adequate to address a particular research question. The methodological choice set, however, should be broad and allow the possibility of multiple research approaches.

There are four arguments which comprise the Q^2 case for methodological pluralism some of which dovetail with arguments for methodological pluralism in economics more

[15] It is relevant to note here the ontological debate between Bishop Berkeley and Locke about the nature of reality, whether material or ideal, was conducted within Empiricism.

generally (Samuels, 1997; Dow, 2004). First, foundational assumptions determine our conceptual categories and analytical lens. One implication is that our foundational priors determine, in part, how we understand the world and what we see. They drive the questions posed, and not posed, and the ways of answering them. In the present case, our priors determine the chosen conception of causation, the correlative model of causal inference and empirical strategies of demonstrating causation.

The key point here is that all knowledge is partial. The first argument in favour of methodological pluralism, then, is simply that there are strong reasons not to unduly restrict the field of inquiry to any one partial analytical perspective. Otherwise, we arbitrarily create blinders, and miss out on potentially relevant information. The resulting bias has been labelled, in cognitive psychology, the so-called WYSIATI principle – 'what you see is all there is' (Kahnman 2012, pp. 85–88). In terms of research findings and policy recommendations, an analogous WYSIWYG principle applies: 'what you see is what you get'.

Not only is knowledge partial, it is also fallible and adjudication between conflicting results is often inconclusive. The second argument in favour of methodological pluralism rests on the role of multiple research approaches in facilitating the process of empirical validation of research findings or adjudication between conflicting results. Little (1998, p. 173) aptly paraphrases some of the difficulties involved in establishing the validity of our knowledge claims:

> Scientific disputes are inherently underdetermined by the evidence. 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 discussed in Section 3.2 on 'triangulation', the case for the validity of research results is strengthened if different methodological approaches applied to the same research question arrive at similar conclusions.

A third argument shifts from the nature of knowledge to characteristics of the social world. The process of understanding and explaining is greatly complicated by the complexity of the phenomena under examination. As discussed in the introductory section, it is here that Dow's emphasis on ontology, and open-systems, resonates.

Causation is exceedingly complex. There is an almost infinite range of potential causal variables which are interacting with one another in ways which are hard to understand. There are good reasons to believe that the combined use of a number of approaches to causation is necessary to provide an adequate account of the multiple features of the causal framework, which include causal variables, weights, mechanisms and the causal tree. As argued by Cartwright (2007) and others, there is no singular concept of causation, or model of causal inference, that does justice to the wide varieties of causal phenomena in the world. Further, combining approaches to causal inquiry can serve to illuminate different aspects of the underlying causal structure and relationships and, in principle, enrich causal analysis. A number of such examples were discussed under the headings of 'complementarity' and 'expansion' in section 3.

The final argument for methodological pluralism is the pragmatic case. Combining multiple research approaches works. It can lead to better understanding and explanation. They are many such examples which appear in the Q^2 literature. Section 3 provided a select review of the range of value-added which such mixing can provide.

This favourable assessment does not mean that combining multiple research approaches always work. Nor does it mean that such combining is always necessary for understanding or explanation. The choice of research approach should depend on the research question at hand. Still, examples of value-added abound in the literature. Accordingly, it would be odd to arbitrarily restrict the methodological choice set to a single approach at the onset.

5 Conclusion

The objective of this article has been to provide an empirical illustration of Sheila Dow's notion of 'structured pluralism' drawing on a recent body of literature in which multiple research, or 'Q-Squared', approaches to the causal analysis of poverty analysis have been used in the Global South. Such an undertaking contributes to the existing literature in two ways.

First, it adds empirical flesh to the literature on methodological pluralism in economics. Many of the contributions in this literature have devoted much more attention to theoretical and conceptual arguments in favour of pluralism than to the empirical record.[16] The present analysis shifts emphasis to the empirical side and in the process provides evidence in support of many core tenets of these arguments.

Second, it brings out in a very stark way what has often only been implicit in the Q-Squared literature, namely that integrating multiple research approaches is much more than a technical exercise involving the optimal choice of methods. It entails mediating between different linguistic communities or research paradigm. Such considerations are forcefully articulated in Dow's concept of 'structured pluralism' given the importance afforded

[16] Examples include Caldwell (1988), Dow (1997, 2004) and Samuels (1997).

schools of thought, translation between linguistic communities and methodologically-aware critique. All three of these elements have been quite central to the Q^2 research program which has sought to promote a more systematic integration of multiple research approaches in poverty analysis. Understanding linguistic differences between schools of thought about the meaning of causation and correlative models of causal inference has proved to be quite important for as assessment of the relative strengths and limitations of different approaches to the causal analysis of poverty.

Further, such an understanding has proved quite integral to the successful combination of research approaches and consequent improvement in methodological practice. A number of examples of the value-added of multiple research, or Q^2, approaches were presented which fell under the headings of development, triangulation, complementarity and expansion. Together these examples illustrated the integration of outcomes and processes, inter-subjectively observable and dialogical information and 'thick' and 'thin' description.

The various strands in the Q^2 literature provide a case for methodological pluralism, which rests on four claims. Knowledge is partial. Empirical adjudication is imperfect. The world is complex. Combining multiple research approaches adds value. They are many ways to understand the world, all of which have strengths and limitations. Ultimately, the goals of understanding and explanation are best served if research questions dictate choice of methodological approach rather than the other way around.

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