4 Separate or symbiotic? Quantitative and qualitative methods in (heterodox) economics research

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4.1 INTRODUCTION

The qualitative–quantitative debate that flourished in the 1980s and 1990s within the social sciences hinged on the philosophical oppositions between the ontological and epistemological approaches to research that motivate a researcher's choice of research method (see Sale et al. 2002; Smith 1983). Discussion focused on how the epistemological and ontological foundations of quantitative and qualitative methods are directly in opposition to one another. More recently, however, there has been a greater effort to integrate techniques from both traditions to formulate a better understanding of social phenomena, under the umbrella of 'mixed methods'. The development of critical realism and grounded theory as lenses of social analysis, as well as a growing commitment to methodological pluralism, especially among the heterodoxy, has spearheaded this effort.

In this chapter, we look into the differences – philosophical and technical – between qualitative and quantitative methods of research, identify perspectives regarding their integration (both for and against), and advance our own reasoning for why, as social scientists, economists need to take this question of methodological pluralism seriously. While we do not discuss historical methods separately, it is worth noting here that similar dilemmas underlie economic history: indeed, social and economic historians have sometimes found themselves on the front lines of the qualitative and quantitative debate, caught between economists with their skepticism of qualitative evidence, on the one hand, and historians with their suspicion of quantitative research on the other (Carus and Ogilvie 2009). We point readers to Chapter 5 of this *Handbook* for a detailed discussion of qualitative and quantitative methodologies in historical research.

In this chapter, we begin by defining what quantitative and qualitative approaches are, taking care to draw a distinction between method, methodology, and epistemology in section 4.2. In section 4.3, we compare the technical aspects of both methodological traditions, looking into the typical objections quantitative researchers in economics have against qualitative methods, and the responses qualitative researchers have to these objections. We argue that these misunderstandings arise from a fundamental misapprehension of the nature of qualitative research, as well as from the fundamentally disparate epistemological and ontological stances of the two traditions. Section 4.3 thus sets the stage for exploring the possibility integrating the two traditions. We take up this issue in greater detail in section 4.4, presenting different perspectives on the compatibility of methodologies and methods, as well as practical barriers to their greater integration within economics. Section 4.5 concludes the chapter.

4.2 DESCRIBING QUANTITATIVE AND QUALITATIVE METHODOLOGIES

At the outset it is important to clarify what we mean by the term 'methodology' and how it differs from 'methods'. Following Bryman (1984) we use the term 'methodology' – be it quantitative or qualitative – to refer to the ontological base and epistemological assumptions guiding the preference for a particular set of methods. As we will see later in this chapter, a methodology carries particular significance in terms of representing a view about the nature of knowledge and the nature of reality and being. 'Methods' on the other hand refer to the set of techniques used for the collection and analysis of data. Quantitative and qualitative methodologies reflect respectively, therefore, the choice of a particular ontological and epistemological base (Bryman 1984). Thus we can think of methodology as providing justification for the choice of different research methods, so that 'quantitative methodology' in this chapter refers to the epistemological and ontological justification for quantitative methods, while 'qualitative methodology' refers to the epistemological and ontological justification for qualitative methods.[1]

What is Quantitative Methodology?

The term 'quantitative', when applied to empirical analysis in economics, has been used variously to describe the method of data collection, the type of data collected, and the ways in which data is analyzed and interpreted. According to the typology proposed by Kanbur (2003), a quantitative approach to data collection is generally understood to be general in population coverage, and to require only the passive involvement of the population being researched. The data collected is usually quantifiable – either numerical data, or non-numerical data that can be condensed into a numerical value – and as such, can be analyzed and interpreted through the use of statistical techniques. For the purpose of this chapter, we could begin by adopting an understanding of quantitative research as involving the analysis of numerical data that has been collected through the use of methods that include, but are not limited to, random sample surveys and structured interviews. Blaikie (2003) argues, for instance, that quantitative data is characterized by the transformation of information received from the respondent into numbers, either immediately or prior to analysis (p. 20). Such data may then be subject to univariate, bivariate, explanatory or inferential analyses (see Blaikie for detailed descriptions of each). However, this definition raises more questions than it answers: for example, does the use of open-ended interviews with a randomly selected sample to generate information about attitudes and motivations that can then be quantified using a simple ranking or scoring exercise count as qualitative or quantitative research (see, for example, Ragin 2000)? Indeed, notwithstanding the schematic Blaikie (2003) lays out to identify and distinguish quantitative from qualitative, he also states that 'all primary data start out as words' (p. 20). Perhaps a better approach would be to explore the implicit assumptions that quantitative methods make about the nature of reality, and the best way to gain access to knowledge about that reality.

Epistemological Underpinnings of Quantitative Research

Quantitative researchers are seen as committed (whether consciously or unconsciously) to a realist ontology and empiricist epistemology in which reality is single, external, observable, and measurable and in which the knower and the known are separate and independent, so that the truth is not defined by the research context, or by the values of the researcher or the researched (Horsewood 2011; Christiaensen 2003; Downward and Mearman 2007). According to this epistemology, the purpose of the researcher is to determine the truth of alternative theoretical claims by determining their correspondence to data obtained by observation; only data that is intersubjectively observable and subject-invariant (that is, not based on the perceptions of participants) is valid for this purpose (Kanbur and Shaffer 2007). In other words, knowledge produced within this framework must be objective (that is, true regardless of the subject's individual biases), verifiable through empirical evidence, and replicable.

In this methodology, objectivity is ensured by maintaining a distance between the researcher and the researched – the researcher is perpetually an outsider looking upon the researched – and through the possibility of external reviews of any instruments used in qualitative research (such as questionnaires) (Bryman 1984). Verifiability emerges from empirical evidence collected purely through observation, and presumably free of the values, purposes, and ideals of individuals involved (Howe 1988). Replicability is ensured through the possibility of implementing the same research instrument in other contexts (Bryman 1984). Thus, at the level of data collection, it is the job of the researcher to ensure that the data collected has these properties by making use of statistical principles in the study design, for example, through the use of representative sampling and standardization of questions and responses to minimize the occurrence of reporting biases, variability in the interviewer–interviewee interaction, and other sources of error in the data. For instance, survey questionnaires that can be analyzed through quantitative techniques lend themselves easily to this mode of inquiry by affording precisely these checks and balances. Theory validation also takes place at the level of data analysis, as for example when the researcher undertakes formal testing of alternative hypotheses using econometric techniques.[2] Only knowledge that meets these standards is regarded as valid and authentic.

Proponents of quantitative methodology often focus on the potential generalizability and replicability of the results of quantitative research, traits that are seen as desirable by adherents of a realist ontology and epistemology. Other strengths of quantitative methods that have been mentioned include the ability to identify trends over time and make cross-sectional comparisons; the potential for identifying correlations that may identify associations among critical variables and that raise questions of causality and covariant changes; the potential for estimating prevalence and distributions within population areas; and the credibility of numbers in influencing policy-makers (Chambers 2003).

Critics point to the potential for sampling and non-sampling errors in quantitative methods, to the inability of these methods to capture phenomena that are not easily quantifiable, and to the fact that numbers may be imprecise and even subjective (Uphoff 2003; Kanbur 2003). For instance, Rao (2003, p. 104) points to a number of shortcomings of traditional econometric analyses of secondary quantitative data, including the

tendency to neglect ground-level realities in favor of abstract hypotheses and 'stagnant conceptualizations of human behavior', the inability of researchers to respond when their preconceptions are confronted by different realities, and the resulting reproduction of existing stereotypes.

What is Qualitative Research?

Qualitative research methodology emerged in opposition to positivism in the social sciences and has flourished across disciplines such as anthropology, sociology, and nursing. Qualitative research seeks to provide complex textual descriptions of how a given population might experience a particular phenomenon. By providing an in-depth analysis of how complex, often intangible human and family systems, social norms, belief systems, and cultural experiences impact the topic being studied, qualitative research brings to light information that would otherwise not be readily apparent, and which might not be captured by any measurement scale or multivariate methods. Rather than generalizability, or breadth, qualitative explorations emphasize depth of analysis, that is, richness of detail and description pertaining to the phenomenon being researched, tailored to a specific time and place. In economics, the term 'qualitative' is understood to encompass analyses based on non-numerical information, which are specific and targeted in their population coverage, which in their design require active involvement from the population covered, which use inductive (rather than deductive) logics of inference, and which operate in the broad framework of social sciences other than economics (Kanbur 2003, p. 9).

Chapter 7 of this *Handbook* describes particular methods within qualitative research in greater detail. Here, it suffices to mention that three qualitative methods have been used most commonly in economics, namely in-depth interviews, focus groups, and case studies. In addition, site visits, participant observation, and document analysis have also appeared in interdisciplinary work carried out by economists in recent decades (see Chapter 7 of this *Handbook*).

An important characteristic of qualitative research that is often used to distinguish it from quantitative research is that the development of the hypothesis is part of the research process. Qualitative research frequently leads to the evolution of an adequate theory based on first-hand observations and worldviews collected from a small number of key participants, rather than testing a pre-existing hypothesis on a large scale (Horsewood 2011). This emerges from the unique epistemological and ontological stance taken by qualitative research, discussed below.

Epistemological Underpinnings of Qualitative Research

The epistemology underlying qualitative research, in diametric opposition to the positivist paradigm in quantitative research, most often holds that objectivity within the research process is: (1) not possible – that is, human beliefs, values and intentions can never be fully eliminated and true objectivity can never be achieved due to the inextricable link between the knower and the known (Horsewood 2011; Christiaensen 2003); and (2) not desirable since empathic understanding between the researcher and the researched is key to discovering knowledge from the perspective of the latter. Proponents of qualitative

methodology thus 'share the goal of understanding the complex world of lived experience from the point of view of those who live it', their *Verstehen* (Schwandt 1998, p. 118).

The role of the qualitative researcher is to provide an interpretive understanding of the experiences, perspectives, beliefs, and values that give meaning to social phenomena; what Kanbur and Shaffer describe as 'intersubjective meanings' become the privileged unit of information in this approach (Kanbur and Shaffer 2007; see also Schwandt 1998).

The hermeneutic and interpretivist paradigms underlying qualitative methodology posit that social reality is constructed intersubjectively, that is, through social and experiential learning (Kinsella 2006). Therefore, knowledge emerges from a negotiation of meaning between the parties participating in the research process and is grounded in context, space, and time. As Schwandt (1998, p. 191) points out, the context of human action is what imparts meaning to it: 'Because human action is understood in this way, one can determine that a wink is not a wink, or that a smile can be interpreted as wry or loving . . . depending upon the context and the intentions of an actor.'

Further, since knowledge creation is itself a contested process based on a specific moment, valid knowledge is constantly open to reinterpretation, and indeed, multiple social realities can coexist (Lincoln and Guba 1985). A researcher's decision to use qualitative methodology is thus thought to reflect a commitment to an ontology of reality as a multiple and socially constructed phenomenon (Horsewood 2011). To fully understand the topic of interest within its context, inquiry methods seek to involve multiple stakeholders and to obtain multiple perspectives on the subject of research through semi-structured or unstructured, and exploratory data collection methods.

The constructivist stance within this ontology is based on the premise that knowledge 'is not disinterested, apolitical, and exclusive of affective and embodied aspects of human experience, but is in some sense permeated with values' (Schwandt 1998, p. 198; cf. Rouse 1996). Exploring what values these are is a central mandate of qualitative research. This critical application of qualitative methodology may also seek to bring about change and empowerment of the stakeholders in the process (Christiaensen 2003). Qualitative methodology thus frequently embraces activism within and through research as an explicit goal.

Proponents of qualitative methodology argue that it allows for the development and formulation of hypotheses from the lived experiences of actors (Barrett 2003; Rao 2003; Moser 2003), provides greater insight into causal processes (Carvalho and White 1997; Mahoney and Goertz 2006), and depth of information. Chambers (2003), on the other hand, perhaps represents most economists' views with respect to qualitative research when he points to its weaknesses, such as limits of qualitative data when it comes to representativeness, difficulties in verifying information provided by participants, and 'vulnerability' of the analysis to distortion and misrepresentation.

These points of comparison between quantitative and qualitative research are taken up in greater detail in the following sections, where we explore the nature and source of each faction's views of the other, as well as the multiplicity of perspectives on the compatibility of qualitative and quantitative research. At this point, however, we point out that critiques of each tradition frequently tend to conflate particular research techniques with the overall philosophical bent of each tradition. We attempt, therefore, to clarify the differences between the two lines of criticism before taking on perspectives on the compatibility of quantitative and qualitative research.

4.3 A TALE OF TWO TRADITIONS: COMPARING TECHNIQUES OF QUALITATIVE AND QUANTITATIVE RESEARCH

Until the emergence of mixed methods research – through work on triangulation spearheaded by Campbell and Fiske (1959), who argued for the use of more than one method to validate a result to ensure that the variation observed was not an outcome of the method – quantitative and qualitative methodologies tended to occupy fairly distinct terrains in social science research. In economics the systematic mathematization of the economist's toolkit has meant a short shift to formalizing the use of qualitative methods in the discipline although, as argued in Chapter 7 of this *Handbook*, qualitative descriptions have long constituted an integral part of the works of political economists such as Adam Smith and Ronald Coase. The debate continues in other disciplines such as political science and sociology as to the relative merits of one method over another; indeed, Mahoney and Goertz (2006, p. 227) argue that the two traditions are akin to 'alternative cultures', each with its set of values, beliefs, and norms: 'Each is sometimes privately suspicious or skeptical of the other though usually more publicly polite . . . When members of one tradition offer their insights to members of the other community, the advice is likely to be viewed (rightly or wrongly) as unhelpful and even belittling.'

Having taken up the philosophical differences in the previous section, here we recapitulate some of the purely technical distinctions between quantitative and qualitative methods that appear to thwart an easy integration of the two.[3]

Purpose of Inquiry

Qualitative methodology focuses on an understanding of the processes – that is, causal mechanisms – by which two or more aspects of social reality may be connected. Researchers seek to identify these processes through deep documentation and observation, usually over an extended period of time, using narrative techniques. In contrast, quantitative methodology seeks to offer general explanations of causal relationships between variables using quantifiable indicators, measurement, and statistical analysis. Quantitative scholars are concerned with refining techniques of measurement since better techniques may mean that key causal relationships are better able to be isolated. As such, quantitative research tends to be product oriented (for example, what is the impact of a policy or intervention?), while qualitative methodology is suitable for 'process tracing rather than quasi-statistical generalization' (for example, why did the policy or intervention work or not work?) (Shively 2006; cf. Mahoney and Goertz 2006, p. 231; Heyink and Tymstra 1993).

Consideration of Causality

Qualitative researchers are concerned with necessary and/or sufficient causes. Three features of causality within qualitative research may be identified:

1. To be of interest to qualitative scholars, the cause need neither be individually necessary nor individually sufficient.

2. Instead, scholars focus on one cause within a combination of causes that are jointly sufficient for an outcome.
3. Distinct combinations of causes may each be sufficient, implying that there may be multiple causal paths to the same outcome (this is known also as equifinality).

Qualitative research focuses on the impacts of combinations of variables and only rarely on the effects of individual variables. Therefore, there is typically no effort to estimate the net effect of a particular variable.

Quantitative researchers, in contrast, are concerned with causes that produce, on average, certain outcomes across a large population. This approach to causation may be characterized for an individual case as the difference between the treatment (T) and control (C) for the same unit, i. For multiple cases, the causal effect is obtained through a comparison of the control and treatment groups, each group consisting of many units $i = 1, \ldots, N$. In other words, quantitative researchers compare the mean or average causal effect of a variable between two groups. The net effect of each variable X is estimated using a statistical model of the type:

$$Y = \beta_0 + \beta_1 X_1 + \beta_2 X_2 + \ldots + \beta_N X_N + \varepsilon \tag{4.1}$$

where the βs represent these average net effects, and can be estimated using statistical analysis.

The upshot: both quantitative and qualitative methodology may deal with causality, but approach it in different ways. A useful example of this contrast is provided by Mahoney and Goertz (2006, p. 231) in the following words:

> scholars from either tradition may start their research with a general question such as 'What causes democracy?' To address this question, however, researchers will typically translate it into a new question according to the norms of their culture. Thus, qualitative researchers will rephrase the research question as 'What causes democracy in one or more particular cases?' Quantitative researchers will translate it differently: 'What is the average causal effect of one or more independent variables on democracy?'

Scope and Sample Selection

Qualitative scholars' emphasis on explaining the processes behind particular outcomes means that their starting point is selecting cases where the said outcome of interest has indeed occurred (that is, positive cases). While qualitative scholars sometimes choose to discuss negative cases to compare and contrast them with positive ones, it is not always necessary to do so. Such in-depth descriptive analysis is possible with a smaller number of cases which are typically chosen purposefully or theoretically. Purposeful sampling is done by the researcher after several observational site visits, such that they know whom to include in sampling, as per the aims of the research (Schatzman and Strauss 1973). Theoretical sampling arises in grounded theory research where new elements or categories discovered during research may require further sampling along particular lines (Glaser 1978). Qualitative researchers deliberately restrict their analysis to a limited number of cases since this methodology assumes 'causal heterogeneity' for large populations; that is, that the larger the population, the more likely it

becomes for key variables to be missing or misspecified in the theory (Mahoney and Goertz 2006, p. 238).

Because quantitative scholars are concerned with generalizable outcomes, researchers must have a larger number of cases or observations (N) in order to use statistical techniques effectively. Quantitative researchers must also select individual cases without any regard for their impact on the dependent variable so that 'unbiased' results of the average net effects of the independent variables on the dependent variable may be obtained from statistical analysis. A significant implication of this requirement is that researchers choose populations of cases through random selection or sampling.

Weighting Observations and Treatment of Outliers

The emphasis on detailed fact-gathering and on looking into 'positive' cases in qualitative research means that certain pieces of information or some cases may be weighted more in the construction or confirmation of a theory, contributing more significantly to the researcher's view that the theory is valid. Certain cases may be considered more important or interesting, given the researcher's prior theoretical knowledge. At the same instance, the norms around qualitative methodology dictate that even a single case that does not adhere to the general patterns described by the researcher must be explained, rather than dismissed as an aberration. Indeed, a single piece of new information can lead qualitative researchers to conclude that a conclusion might not be correct even if other evidence points in that direction; that is, 'a theory is usually only one critical observation away from being falsified' (Mahoney and Goertz 2006, p. 241).

In the use of quantitative methods, however, it is assumed that more often than not, there can be no *ex ante* determination of 'important' cases. Each observation carries equal weight. Since quantitative methods deal with large Ns, the failure of a theoretical model to explain individual cases is not a problem as long as the parameter estimates obtained from the model for the population as a whole are reasonably good. Idiosyncratic and anomalous factors that are relevant to only a few cases – what King et al. (1994) refer to as 'non-systematic factors' – are of little interest as long as unbiased parameter estimates can be obtained using the large sample. Quantitative researchers are typically content to have these factors be captured by an error term. This error term might indeed contain a number of variables that qualitative researchers regard as significant for individual cases.

Validity Considerations[4]

Perhaps the most contentious aspect of the qualitative–quantitative debate is the issue of rigor and validity. The hegemony of positivism in the social sciences, and in economics in particular, has meant the equation of 'rigor' with mathematical and statistical presentation of evidence, and therefore the privileging of one methodology (quantitative) over the other. Quantitative researchers in economics are skeptical about the value of qualitative research on several counts. The most common objections, and responses to these, are addressed below.

'The standards for evaluating quality in qualitative research methods are contested, unlike for quantitative methods where the standards of evaluation (identification, specification, or aggregation) are clearer'

For quantitative researchers, the yardsticks for measuring the quality of quantitative research seem to be more clearly represented, whereas qualitative research is relegated to the realm of storytelling since the methods seem nebulous. Further, since the ability to generalize from the research sample to the population is crucial for quantitative research, external validity is a primary concern.

Qualitative researchers point out in response that the issue is with how validity is defined and understood in the two traditions. In quantitative research, validity refers to the degree to which an instrument measures what it is designed to measure; in qualitative research, validity means gaining knowledge and understanding of the phenomenon under study (Leininger 1985). Since the nature and purpose of quantitative and qualitative research traditions are different, it would be a mistake to apply the quantitative definition of validity to qualitative research.

At the same time, the above caution does not mean that qualitative research cannot be held to standards of rigor, organization, and meticulousness. This is ensured through a variety of ways, all entailing close attention to and documentation of the research process, which may include: (1) providing thorough descriptions of the methodology used and its evolution; (2) keeping detailed records of procedures used to select cases and samples under study; (3) considering all available alternative explanations and theories while outlining findings; and (4) care in writing up results, including providing detailed examples and narratives when appropriate. Indeed, Helper (2000, p. 230) argues that not providing these details while presenting findings from field research is akin to 'asking readers to believe a summary of econometric results without tables of regression coefficients'. A second way of ensuring the soundness of findings from qualitative research is through 'triangulation', that is, cross-checking findings with information from other sources (journals, magazines, archives, other existing research, or data collected through another method). Greater faith may be had in findings that are cross-checked rather than those that are not. Ultimately, good qualitative and quantitative research should seek to represent the object of study in as faithful a manner as possible, so that any 'decisions, programs or interventions based on the representation would permit better outcomes than would have been possible had the research not been done' (Starr 2012, p. 19).

'There is too much scope for the researcher's personal biases to creep in, that is, concerns emerge regarding objectivity of the researcher'

The emphasis on objectivity in economics arises from the efforts of economists to emulate the physical sciences, especially physics, an agenda that dates back to the nineteenth century (Mirowski 1989; Drakopoulos 1991). To be trustworthy, findings from research must be unbiased (that is, must not depend upon the researcher's personal views), value-free, and reproducible (that is, must not depend on the specific measurement instruments used) (Starr 2012; McCloskey 1983). As mentioned earlier, quantitative methods depend on respondent information typically (but not only) gathered through closed-ended questions that can be transmuted into numerical form through coding into conceptual categories that are also numerical (that is, variables) (Blaikie 2003). Arguably, the data collected in this way is independent of the person collecting it or the place in

which it is collected. Economists used to this mode of inquiry are therefore suspicious when confronted with qualitative data collected through detailed, open-ended personal interactions with respondents, and through observations and notes maintained by the researcher in the course of study. To these economists, there is too much scope for the researcher's personal opinions and biases to creep in, in the latter framework.

This criticism against qualitative methods has been addressed in different ways. Critical social science scholars (feminist researchers, for instance) point out that true objectivity is unachievable in both quantitative and qualitative traditions (for instance, the options provided in closed-ended survey questions may reflect particular understandings of the world). Other economists propose ways by which objectivity may be afforded by qualitative methods, again through detailed documentation of methods and strategies (Starr 2012; Helper 2000), and clear acknowledgments of the researcher's own positionality, power, state of knowledge, and perspectives on the issue under study (Esim 1997). Besides attenuating sources of potential bias, presenting this information helps the researcher to specify unique aspects of the research design or the researcher's circumstances that might make the results different from what another study on the same issue might find (Starr 2012).

'The quality of self-reported information is dubious'

The gathering of qualitative information through interviews and focus groups frequently entails open-ended questions that stimulate detailed responses from interviewees. A concern arises that data obtained in this way might be of suspect quality, because:

> a). Respondents may actively be untruthful about their behaviors and motivation (for instance, underreport behaviors that are considered less socially desirable, even if they have personal preferences for that behavior), or b). Respondents may themselves be unaware of why they do certain things or not be able to articulate explanations in a manner useful to the researcher. [An oft-cited case is Friedman's famous example of a billiard player in *The Methodology of Positive Economics*, 1953 [1970], where a billiard player might not know or be able to explain what laws of physics he is using to make expert shots: 'The billiard player, if asked how he decides where to hit the ball, may say that he "just figures it out" but then also rubs a rabbit's foot just to make sure' (p. 158)]. (Starr 2012)[5]

The concern with the quality of data obtained through qualitative methods reveals a double standard in the world of positivist economics where the quantitative is privileged over the qualitative. Note that the issue of response quality may also arise in quantitative research that uses secondary data collected through survey research; however, economists are able to elide these concerns by virtue of their preoccupation with data analysis rather than collection, and the separation that frequently occurs between the person collecting the data and the one analyzing it in quantitative economic research. Curiously, the issue of response quality emerges as a serious criticism leveled by economists against qualitative researchers who frequently both collect and analyze their own data.

This double standard aside, the issue of response quality in both qualitative and survey research has occupied social scientists for some time, and has elicited a vast amount of research focused on creating the circumstances necessary for ensuring high-quality responses. These emphasize the appropriate framing of research queries and prompts,

choosing a suitable mode of research, ethical ways of approaching respondents for answers to sensitive questions, and ways of building trust between the researcher and the researched (through ensuring anonymity and confidentiality, emphasizing the value of the research, processes of informed consent, and so on) before the questionnaire or interview is administered (Singer 1978; Tourangeau and Smith 1996; Schaeffer and Presser 2003).

In response to the second criticism above, that respondents may themselves be ignorant of their motivations or be unable to explain their behaviors, Helper (2000, p. 229) notes that the value of qualitative research frequently lies in discovering something previously unknown through interactions with respondents, 'even when they seem to be getting off the subject. You are likely to learn something you would not have thought to ask about.'

While qualitative research emphasizes understanding the world from the perspective of the researched, letting respondents tell their story does not necessarily mean taking everything they say at face value. As Starr (2012, p. 20) emphasizes, even before research commences, initial interviews should be focused on establishing 'which respondents have the knowledge, information, perspectives, experiences and interest in the topic that will enable them to serve as good "key informants" with respect to the issues of interest'. Qualitative methods such as interviews allow interviewers to ask for clarifications, extra details, and examples from their interviewees there and then, to reduce response problems and ensure data quality. Furthermore, it falls upon the researcher to cross-check different pieces of information through different data sources to piece together an accurate picture of social reality. Such triangulation allows the researcher to gain more knowledge than their respondents and to realize when someone is lying or does not have access to important or relevant information. This allows the researcher to ask further questions in order to understand why respondents may either be unaware of or may wish to hide information.

'Qualitative findings do not answer any questions definitively/are non-generalizable/unstable'

The positivist epistemological bent of conventional economic methodology emphasizes the existence of a social 'truth' that research aims to uncover. One implication of this emphasis is a focus on research that seeks to settle all debate and provide an ultimate explanation for an observed social behavior or phenomenon. Qualitative methodology – with its context-specificity, constant reinterpretation of social reality, and causal heterogeneity – is seen to fall short when held to this positivist standard in economics. The lack of generalizability of findings obtained via qualitative research renders them unusable and unstable in the eyes of quantitative proponents of economic research.

Such criticism, however, misses the fact that the nature and scope of qualitative research is entirely different from that of quantitative research. The objective of qualitative research is to provide causal process information; therefore, qualitative scholars limit the scope of their arguments in recognition of causal heterogeneity. It might also be pointed out here that quantitative analysis, in turn, cannot be relied upon for providing causal process description and has corresponding limitations. With regard to the stability of findings, Mahoney and Goertz's (2006, p. 238) take on the issue may be reproduced here:

> Whereas findings from qualitative research tend to be more stable than findings from quantitative research when one moves from a superset to particular subsets, quantitative findings tend to be more stable than qualitative findings when one moves from a subset to a superset. These differences are important, but they should not form the basis for criticism of either tradition; they are simply logical implications of the kinds of explanation pursued in the two traditions.

Ultimately, the suitability of each method depends upon the goal of research in each case: if the goal is to estimate average causal effects for large populations, quantitative methods are suitable; however, if the goal is to explain particular outcomes, qualitative methods should be chosen.

4.4 QUANTITATIVE AND QUALITATIVE METHODS IN ECONOMICS: CAN THE TWAIN MEET?

The divergent goals and scope of these two traditions raises the question: can qualitative and quantitative methods be combined meaningfully at all? Four lines of argument may be identified in answer to this all-important query: that the methodologies cannot be reconciled since they are rooted in distinct and irreconcilable ontological and epistemological traditions; that the qualitative and quantitative divide is in reality quite arbitrary, and there can be, in fact, substantial overlap; that despite distinct epistemological foundations, there may be practical grounds for mixing methods, and for allowing the research question, rather than the author's epistemological commitments, to drive the choice of methodology; and that there may indeed be epistemological grounding for the mixing of methods. In addition to exploring these arguments in the following section, we also examine practical impediments to the integration of techniques within the discipline, including the lack of a platform for economists to adopt pluralism in their methods, and the absence of tangible support to scholars wishing to use qualitative or 'mixed methods' techniques.

Integrating Qualitative and Quantitative Methods

Much has been written regarding the incompatibility of quantitative and qualitative paradigms (see Guba 1987; Smith and Heshusius 1986; Sayer 1992; Silverman 1993). The traditional perspective is that the epistemological differences underlying the two sets of techniques – with their attendant 'dichotomies of objectivity versus subjectivity, fixed versus emergent categories, outsider versus insider perspectives, facts versus values, explanation versus understanding, and singular versus multiple realities' (Christiaensen 2003, p. 115) – are irreconcilable, so there is no legitimate basis for integrating the two methods. However, this argument flies in the face of actual research practice: as Fiorito and Samuels (2000, p. 163) have noted, 'ostensibly antinomian epistemological positions, each ostensibly meaningful on its own terms, are in practice inexorably combined in one way or another'.

A second line of argument holds that the quantitative–qualitative divide is a false and arbitrary dichotomy. Along these lines, Hentschel (2003) observes that the qualitative–quantitative debate tends to conflate methods of data collection with the type of data collected. But, as he notes, methods that are generally thought of as 'quantitative',

for example large-scale household surveys, often produce 'qualitative' data, while 'qualitative' methods produce 'quantitative' data. Others have commented on the similarity between qualitative and quantitative methods in terms of the potential pitfalls of both. Along these lines, Herring (2003) observes that all data are products of social interactions; regardless of the method by which data is collected, relations of power, interests, and values condition the production of data, and determine the correspondence between reality and its condensation and representation as values of a variable. The failure to recognize this renders any data collection method less reliable and less valid. Neither qualitative nor quantitative techniques are inherently free from this potential weakness. For Herring, then, what is crucial is for the researcher to understand the society that produces the data; thus there is a need for grounded contextual expertise in survey design, the selection of focus groups, pretesting of interview and survey questions, and the interpretation of results.

Likewise, White (2002) argues that regardless of choice of methods, quality of application matters, that is: 'Badly or misleadingly applied, both quantitative and qualitative techniques give bad or misleading conclusions' (p. 512). Moreover, both have the potential to be misused. He sees qualitative and quantitative techniques as complementary, and argues that there is a productive synergy to be gained from combining the two types of methods. For example, insights from qualitative work can be used to inform economic theory and data analysis, while quantitative data can be useful in raising questions that would be addressed by qualitative approaches.

Closely related to the argument that the two traditions of research are 'not all that different' is the argument for pragmatism in choice of methods. Proponents of mixed methods in disciplines such as sociology, nursing, and political science have furthered the integration of the two methodologies. This integration is based on a pragmatic view of research that emphasizes the research question as a prime determinant of research method, as opposed to philosophical foundations, and traces complementarities in techniques from both traditions (Bryman 1984; Lin 1998). Allowing research questions to determine the choice of methods also recognizes that no technique is inherently superior to others, but simply that a particular 'technique is likely to be more useful in some contexts than others' (Bryman 1984, p. 80). Therefore, a sample survey may be appropriate when the goal is to obtain specific quantitative information from the respondents, and when the researcher has fairly complete a priori information on the range of responses likely to emerge. On the other hand, participant observation may be employed where it is necessary to document patterns of social relationships or interaction, or latent and non-verbal belief systems that can only be revealed through observations of behavior (Warwick and Lininger 1975; cf. Bryman 1984, p. 81).

Along similar lines, Carus and Ogilvie (2009) argue that qualitative and quantitative evidence are mutually indispensable to economic and social historians. Qualitative documents from the past can only be understood within the social context that produced these documents. Because the basic categories of any social context lack cross-cultural, inherent, or universal meanings, their meanings must be teased out by comparing the society under study to other relevant societies, a comparison which they argue is inherently statistical, since it refers to the distribution of the variable of interest over a range of possible values (p. 894).

The problem with pragmatism as an argument for combining qualitative and

quantitative research methods is that it does not by itself provide an epistemological or ontological basis for combining methods, nor does it resolve the epistemological and ontological tensions previously discussed.[6] The path towards this resolution, however, may be found if we begin by acknowledging that while, or perhaps because, our concern as economists is with the real world, our theories about the economy are fallible, and as such, no single economic paradigm can lay an absolute claim to truth (Caldwell 1982; Salanti and Screpanti 1997). What we can hope for, at best, is to build knowledge about the economy, while at the same time being aware that the knowledge so generated cannot be the same as reality. This perspective lends itself to arguments for the use of a range of methods in economic research, on the grounds that no single method can generate certain knowledge about the real world. In fact, because, any single method can generate only partial knowledge about the world we are trying to explain, pluralism requires that a variety of methods be used in combination with each other (Dow 1997, 2002).[7]

The open system ontology of critical realism provides one argument for combining qualitative and quantitative methods (Downward and Mearman 2007). Unlike the closed system ontology of positivist economics, in which all relevant variables of the economy are known and can be classified as exogenous or endogenous, and in which relationships between variables are predetermined and transcend space and time, an open system ontology sees the economy as a complex system in which relevant variables may be unknown, whose boundaries cannot be specified, and in which interrelationships are constantly changing. Empirical observations are thus the outcome of multiple potential causal mechanisms at work within an enabling framework of social conventions and institutions (Hodgson 1988; cf. Dow 2002). For critical realists, therefore, the exclusive reliance on empirical data as the basis for evaluating the validity of economic theory is flawed, because such data may not reveal the multiplicity of causal mechanisms that could potentially be at work over the period of observation. Instead, the role of empirical observation is to generate hypotheses about underlying causal mechanisms by a process of retroduction (Dow 2002).

Downward and Mearman, in a series of papers, argue that combining methods, or what they refer to as mixed methods triangulation (MMT), is central to retroductive activity (Downward et al. 2002; Downward and Mearman 2003; Downward and Mearman 2007). This is because different research methods do not have to be 'wedded' to different, ontological presumptions; they are 'redescriptive devices' that reveal different aspects of the object of analysis (Downward and Mearman 2007, p. 15). In fact, because human actions occur within particular institutional and structural contexts, the economist must elaborate not only on motivational dimensions of human agency, but also on the context of this agency. The use of different methods of analysis is necessary for the economist to carry out this task. Furthermore, combining methods allows for the construction of 'a nexus of mutually supportive propositions', thus resulting in the derivation of a fuller explanation of economic phenomena. As they argue, 'the logic of retroduction makes some form of MMT . . . necessary to reveal different features of the same layered reality without the presumption of being exhaustive' (p. 16).

Having explored the different lines of argument for and against the integration of qualitative and quantitative methods in social science research, we now proceed to examine the obstacles that seem to have impeded their integration in economic research.

Practical Impediments to Integrating Methods within Economics

In addition to the ongoing philosophical debates regarding the mixing of methods, more immediate practical concerns emerge that may present a conundrum even for economists who are willing to incorporate qualitative and mixed methods into their research toolkits. In their preliminary survey of articles published in the top mainstream and heterodox journals, Basole et al. (2012) argue that qualitative and mixed methods research continue to occupy a marginal position in economics. In addition, the authors observe that economists, even when publishing in interdisciplinary journals, tend primarily to use primary or secondary survey data, leaving mixed methods research to their counterparts in development studies, geography or political science. In addition to the technical obstacles discussed above, obstacles driven by the status quo within the discipline also help to inhibit the use of qualitative methods or the mixing of qualitative and quantitative methods in economics:

1. Specialization within the status quo. Graduate training in economics currently comprises of coursework in statistics, econometrics, and occasionally in behavioral experiments. Primary data collection – be it quantitative (that is, survey design) or qualitative – is typically not part of the curriculum. It is therefore entirely up to the would-be researcher to acquire additional training in any of these other methods, usually by taking methods courses in other departments. Thus, a very small proportion of economists actually end up getting training in, and ultimately using, methods other than those prescribed by graduate education in economics.
2. Legitimacy concerns leading to 'dropping out'. Basole et al. (2012) speculate that concerns around qualitative and mixed methods not being 'real' economics might dissuade economists from using alternative methods. For instance, graduate students may perceive that the use of mixed methods will disqualify them from being hired by economics departments. An unfriendly stance towards qualitative or mixed methods as 'not legitimately economics' may also lead those interested in pursuing these methods in their research to seek homes in other, methodologically pluralistic, interdisciplinary departments; that is, 'dropping out' of economics. The marginalization of alternative methods within economics thus becomes self-perpetuating as the small minority of scholars interested in these methods migrate to other disciplines.
3. Publication issues. The invisibility of these other methods in economic research is compounded by the lack of platforms where such research might be showcased. Indeed, Basole et al. (2012) point out that even when indications are present that a multi-method approach was used and that qualitative data was also collected, only quantitative results are typically presented in economic journals (p. 13). The perception prevails – arguably reinforced by what we see gets published in economics journals (see Basole et al. 2012) – that quantitative and qualitative research have different audiences respectively. Articles based on qualitative or mixed methods research are therefore shunted to 'more appropriate' (read: interdisciplinary) journals.

Despite these roadblocks, efforts to incorporate qualitative and mixed methods within economics have gained some momentum within both mainstream and heterodox economics in the last few years (see, e.g., Starr 2012; Basole and Ramnarain, Chapter 7 in

this *Handbook*; Cronin, Chapter 15 in this *Handbook*). In mainstream economics, qualitative and mixed methods have gained the most ground in poverty research; a notable example is the Q-squared studies of poverty in developing countries that combine survey research with ethnographic techniques such as focus groups, life histories, and in-depth interviews of participants' lived experiences (see, e.g., Kanbur 2003). Mixed methods research in mainstream economics has also found its way into policy and contingent evaluation research (see Starr 2012 for several examples). Heterodox economics, which aims to highlight social factors – norms and institutions – and the role of power and privilege in driving economic outcomes, has adopted qualitative and mixed methods in analyzing labor processes, the motivations of economic actors placed in social networks, and power relations (see Basole and Ramnarain, Chapter 7 in this *Handbook*, for details).

4.5 CONCLUSION

This chapter has examined the question of whether or not it is possible, and indeed even desirable, to integrate qualitative and quantitative methods in economic research. As economists who use both methods in our work, the answer seems obvious to us. Despite the apparent differences in the epistemological and ontological underpinnings of these research methods, and the technical differences that arise from these philosophical differences, there is much value to be gained from permitting the research question to drive the choice of method. As researchers attempting to explain the social world, we must acknowledge that social reality is complex and multifaceted. We live in societies in which economic outcomes are driven by the interaction of multiple factors: individual agency, social norms, cultural values, and economic institutions. If we accept that our explanations of this reality are at best only partial, then we must also accept that no single method can lead us to discovering 'the truth' about the real world. The most we can hope for is to advance knowledge about the real world.

Different methods can tell us different parts of the story; together, they may contribute to a more complete picture than we might otherwise achieve. Ultimately, we would argue, the choice of research method should not be constrained by epistemological and philosophical divides or by the norms of our profession. The choice of method should be driven by the research question, and by the desire to tell a story that reflects the complexity of the world that we are attempting to explain.

Nevertheless, the reality is that as economists, our choice of methods is constrained by many factors, not least of which are the norms of the discipline, which shape the expectations of our peers and colleagues regarding what counts as 'real' economics; the pressure to 'publish or perish'; as well as our own training, or rather the lack thereof, in methods other than quantitative techniques. This is perhaps as true of heterodox economists as it is of mainstream economists. Even if we agree on the desirability of mixing methods in economic research, and accept that there are epistemological and ontological justifications for doing so, these disciplinary boundaries may prove difficult to breach in practice. Perhaps the question we need to address is not so much whether it is desirable to integrate methods in economics research, but rather, what changes need to occur within the discipline in order for such integration to become feasible, and indeed acceptable.

NOTES

1. Olsen and Morgan (2005) make a similar distinction: they argue that methods are techniques of collecting and transforming data, while methodologies comprise methods, the practices involved in implementing them, and the interpretation placed on this act by the researcher.
2. It is worth noting here that econometrics may also be used to simply find the best empirical specification that fits a theory that is already assumed to be true, as in the hypothetico-deductive approach associated with the US Cowles Commission, or to help narrow down the range of possible theoretical explanations, as in the approach associated with the London School of Economics (see Dow 2002, for a more detailed explication of empirical testing of theories in economics).
3. The discussion here is largely based on Mahoney and Goertz (2006).
4. The discussion here focuses specifically on economists' perceptions of qualitative data, their objections, and counterarguments to these perceptions. We base the discussion on Starr (2012), McCloskey (1983), Helper (2000), and other economists who have dealt with this issue in their writings.
5. As Martin Ravallion has pointed out, there is a certain inconsistency in this argument: 'Economists have traditionally eschewed subjective questions: oddly, while economists generally think that people are the best judges of their own welfare, they resist asking people how they feel' (Ravallion 2003, p. 62).
6. Downward and Mearman (2007), in particular, note that pragmatism can be viewed as an instrumentalist position and suggest we still need to explore the legitimacy of integrating methods on methodological grounds, that is: what is the epistemological justification for integrating methods?
7. Critical realism provides the ontological basis for this plurality. As Dow (2002) argues, if we understand the real world to be an open system, requiring open system knowledge, then we are accepting that one method will generate certain knowledge about the real world (p. 157).

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