

Toward a Methodology of Mixed Methods Social Inquiry

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The development of a methodology for inquiry into human affairs requires consideration of four interlocking, but nonetheless conceptually distinct domains. Each domain contains a set of issues that are relevant and important to the practice of social inquiry. Collectively, the domains present a justificatory framework and a set of practical guidelines for a given approach to social inquiry. The burgeoning literature in mixed methods approaches to social inquiry engages all four domains, but somewhat unevenly. This is also so for the papers presented in this special issue of Research in the Schools. This concluding article first offers a brief portrait of the requisite domains for a social inquiry methodology, and then connects each of the papers in this special issue to these domains. Comments on priority future directions for the continued development of a methodology of mixed methods social inquiry conclude the discussion.

What Constitutes a Methodology for Social Inquiry?

A methodology for social inquiry engages four domains of issues and assumptions: philosophical assumptions and stances, inquiry logics, guidelines for practice, and sociopolitical commitments in science. Each domain is briefly described below.

Domain 1 – Philosophical Assumptions and Stances

A social science methodology is importantly rooted in issues that are the substance of the philosophy of science, in particular, assumptions about the nature of the social world (ontology) and about the nature of warranted social knowledge (epistemology). This domain also includes stances regarding related issues, such as objectivity and subjectivity, the role of context and contingency in social knowing, and the relationship between the knower and the known. In addition to these traditionally paradigmatic issues, this domain encompasses broader facets of an inquirer's own mental model (Phillips, 1996; Smith, 1997), such as value commitments and the perspectives and core constructs of particular disciplines, for example, "disequilibrium" as a catalyst for growth in human development and "maximization of satisfaction" as the fulcrum of consumer decision making in economics.

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Domain 1 thus guides the inquirer's gaze to look at particular things in particular ways and offers appropriate philosophical and theoretical justification for this way of seeing, observing, and interpreting.

Domain 2 – Inquiry Logics

Domain 2 constitutes what is commonly called "methodology" in social science. For a given approach to social inquiry, this domain identifies appropriate inquiry purposes and questions, broad inquiry strategies and designs, sampling preferences and logic, criteria of quality for both methodology and inference, and defensible forms of writing and reporting. The role and location of the inquirer in the study is also delineated in this domain. Further, this domain presents logics of justification for each of these components of social inquiry and especially for their interconnections. A strong inquiry logic is substantiated by coherence and connection among the constituent parts. The separate parts need to fit together and work together to enable – from the perspective of a given inquiry approach – defensible data gathering, analysis, and interpretation.

Domain 2 thus structures the inquirer's gaze, so that what is important to see (as defined in Domain 1) is observed, recorded, and understood or explained in defensible ways. Domain 2 offers a kind of geographic information system (GIS) positioning of the inquirer in the inquiry context and also offers navigational tools that substantially direct the inquirer's journey in that context.

Domain 3 – Guidelines for Practice

Domain 3 offers specific guidelines for inquiry practice. The philosophical assumptions and logics of inquiry that comprise domains one and two are translated into particular inquiry steps and procedures in Domain 3. Domain 3 is the “how to” of social science inquiry. This includes, for example, alternative inquiry designs, sampling strategies, and analysis techniques that meet the broad parameters specified in Domain 2. In Domain 3 are also located the specific methods of data gathering, analysis, interpretation, and reporting, for example, alternative interviewing techniques (e.g., life history interviewing, group interviewing) and various statistical procedures (e.g., simultaneous regression, hierarchical linear modeling).

Domain 3 thus provides the specific tools and procedures – the water bottle, hiking boots, and trail map – needed to enact the journey framed by Domain 1 and mapped by Domain 2.

Domain 4 – Sociopolitical Commitments

Finally, in Domain 4, the location of the inquiry in society is articulated and defended. Whose interests should be served by this particular approach to social inquiry, and why? Where is this inquiry located in society? Does the study contribute to collective theoretical knowledge; is it a “knowledge producer”? Does it advise governmental decision makers? Is the study located in a protected space, separate and apart from the political fray? Or is it located in the midst of contestation, in a position of social critique or advocacy for particular interests and positions? While Domain 4 is clearly not independent from the other domains, especially Domain 1, the role of social science in society is a distinctive issue.

In the past, science of all kinds was assumed to serve a knowledge generation, testing, and refinement role. The mostly uncontested purpose of science was to generate knowledge that could then be applied to the improvement of society, in material, economic, or other ways. Yet, today, there are recognized inquiry paradigms for social science – notably, various forms of feminism, critical race theory, and LatCrit – that themselves embody distinctive sociopolitical stances. Feminisms privilege the well being of women, and critical race theory occupies a stance of social critique about institutional racism in American society. For other paradigms, sociopolitical location is circumscribed but not completely defined. For example, an interpretivist paradigm acknowledges the multiplicity and contextuality of social knowing and thus inherently values multiple perspectives, while a post-positivist paradigm seeks generalizable causal knowledge and thus inherently privileges cross-context recurring regularities in human action.

Domain 4 thus importantly directs the inquirer’s journey toward a particular destination, as it identifies

priority roles for social science in society and provides values-based rationales and meanings for the practice of social inquiry. While values are present in all four domains, they are proclaimed in Domain 4.

Interconnections, Coherence, and Persuasiveness

A methodology for social inquiry gains credibility and persuasiveness when all of these domains act in concert with one another, when their interlocking connections are smooth and well oiled, when the overall presentation is strong, coherent, well articulated and thus persuasive.

An experimental approach to social inquiry is one example of a strong, coherent foundation for inquiry with tightly interconnected logics of justification, positioning, procedures, and rationales. Experimentalism is rooted in a post-positivist philosophy (Domain 1), which espouses a realist view of the social world and an objective, though fallible, stance on social knowledge. The primary purpose of science in society in the experimental tradition is to develop, test, and refine theory, particularly causal and explanatory theory in the Humean tradition (Domain 4). So, priority questions for social inquiry are casual questions about the effects or outcomes of a particular human action, experience, or social intervention. And the randomized experiment is viewed as the best methodology for testing causal hypotheses (Domain 2), as experimentation helps control for many rival hypotheses in the real world and certain biases and errors in human judgment. Experimentation today is well supported by sophisticated procedures of randomization, statistical control, and statistical analyses (Domain 3).

The interpretive case study (Stake, 1995) is another example of a well articulated social inquiry tradition. Rooted in an interpretivist philosophy, the case study approach assumes that the social world, and human actions therein, are guided in part by social constructions of meaning, and so social knowledge is contextual, dynamic, and pluralistic (Domain 1). Interpretive case studies seek not generalizable causal explanations but contextual understanding of the meaningfulness in human experience (Domain 4). A case study methodology honors these assumptions of contextuality and meaning and guides the inquirer to construct and re-interpret an inside or emic portrait of meaningfulness in that context (Domain 2). Case study inquiry itself is well supported today by techniques of purposeful sampling and methods of qualitative data gathering, and by attention to inquirer reflexivity about the presence of the “self” in the study (Domain 3).

Similar portraits can be offered for other well developed methodological traditions, including action research, participatory action research, survey research, and narrative inquiry. A methodology – or perhaps

multiple methodologies – for mixed methods social inquiry is still in the developmental stages.

Development of a Methodology for Mixed Methods Social Inquiry

So, how do the articles in this special issue take up the various challenges of developing an overall methodology for mixed methods social inquiry? What domains are represented in this set of articles? And how are these authors engaging with the distinct challenges of each domain?

The Busiest Site of Development is Domain 2

The preponderance of developmental work represented in this collection of papers on a mixed methods approach to social inquiry is in Domain 2, the site for identification and justification of the broad methodological framework for a given tradition. Included in this domain are issues of inquiry purpose and audience, priority inquiry questions, broad inquiry designs, sampling preferences and logic, criteria for judging quality of both method and inference, defensible forms of writing and reporting, and inquirer role. In the remainder of this section, I discuss the articles that I interpret to be primarily discussions of Domain 2 issues. These articles address issues of central importance to Domain 2: design, research synthesis, and validity.

Robert K. Yin's article makes three primary arguments, all of which pertain to issues of inquiry design. Specifically, Yin's argument engages three continuing issues in mixed methods design. First, should methods be mixed within a given study or only across studies (e.g., Morse, 2003)? Here Yin argues that the essence of a mixed methods approach is its contributions to *convergence* in inquiry findings (as in a triangulation design), which only makes sense when methods are mixed *within a single study*. Mixing methods across studies, Yin argues, "resemble[s] well-trodden paths involving research syntheses (e.g., Cooper & Hedges, 1994), meta-analyses (e.g., Lipsey & Wilson, 2001)," (p. 41) or similar "aggregative procedures" and should therefore not be considered mixed methods inquiry. Second, what kinds of methodological mixes should be included in a definition of mixed methods inquiry? Yin argues that mixes should not be restricted to different qualitative and quantitative methods, but should also include different methods within a given tradition (as in interviewing and observation). This issue is related to discussions of the differences between mixing methods and mixing models, offered most thoughtfully by Tashakkori and Teddlie (1998) and Teddlie and Tashakkori (2003; this volume). Third, when and how should methods be integrated in a study? Here, Yin argues for integration throughout the course of a study,

claiming "the more that a single study integrates mixed methods ... the more that mixed methods research, as opposed to multiple studies, is taking place" (p. 42). Some of the specifics of Yin's discussion on this third point are also related to the "how to" of social inquiry or Domain 3.

The article by Charles Teddlie and Abbas Tashakkori offers another iteration in their thoughtful, stimulating, and useful developmental work on conceptualizing mixed methods design in terms of a typology that is defined and organized around critical dimensions of conceptual difference and practical relevance. Their article engages issues of design typologies in some depth, including a supporting argument for the usefulness of design typologies, an argument for the dimensions included *and* excluded in this typology (drawing on relatively extensive work on design dimensions of importance in mixed methods studies), and an elaboration and illustration of each of the designs presented. Interestingly, this typology is presented for social inquiry more broadly and thus locates mixed methods work within the general domain of inquiry designs. This work is central to Domain 2 as a site of development of a mixed methods approach to social inquiry.

The article by Margarete Sandelowski, Corrine I. Voils, and Julie Barroso also engages a centrally important issue in Domain 2, that of research syntheses involving studies representing different methodological traditions. The work draws on the mixed methods literature as well as on the large body of literature on research review and synthesis. "Mixed research synthesis is our name for the type of systematic review aimed at the integration of results from both qualitative and quantitative studies in a shared domain of empirical research," (p. 29) note these authors. Their work then engages in some depth and endeavors to resolve critical challenges generated by the methodological diversity within and between qualitative and quantitative inquiry traditions. These challenges include contextual challenges, such as the current privileging of "evidence-based" or otherwise quantitative inquiry results in policy circles and the frequent cooptation of qualitative inquiry in mixed methods contexts. These challenges are also intrinsically methodological, including different definitions of inquiry quality in different traditions, different conceptualizations of human phenomena in different traditions, and continuing debate about the feasibility of or sensibility of mixing epistemological paradigms while mixing methods. The response to these challenges offered by these authors is to mirror in some important ways the thinking of theorists regarding mixing within a single study. That is, just as for single mixed methods studies there are component and integrated designs (Caracelli & Greene, 1997), sequential and concurrent designs (Creswell, Plano

Clark, Gutmann, & Hanson, 2003; Greene, Caracelli, & Graham, 1989), and conversion designs (Teddlie & Tashakkori, this volume). Sandelowski et al. offer three designs for mixed methods research synthesis: the segregated, integrated, and contingent designs. This innovative work represents an important step forward in the contemporary mixed methods conversation taking place across *difference*, and it engages difference in this conversation respectfully and generatively.

The fourth Domain 2 article in this volume engages another issue of central importance to a methodological framework and justification for an inquiry approach – the formidable but critical issue of validity. Like Sandelowski et al., Anthony Onwuegbuzie and Burke Johnson conceptually engage an underdeveloped but critically important issue of methodology, namely, what constitutes quality in mixed methods inquiry, specifically quality related to inferential claims of truth, credibility, or more generically validity. Their argument is rooted in their own particular conceptualization of mixed methods inquiry as inquiry that “involves combining complementary strengths and nonoverlapping weaknesses of quantitative and qualitative research,” (p. 60) and validity in this article thus refers to both methodological defensibility as well as defensibility of inferences or conclusions. Building on Teddlie and Tashakkori’s notion of *inference quality* (2003), Onwuegbuzie and Johnson offer the concept of *legitimation* as a conceptual framework for mixed methods validity. They position the legitimation concept as directly engaging the mixed methods challenge of integrating data and interpretations from very different frameworks, stances, methods, samples, and analyses. These authors then continue by positing nine distinct types of legitimation, each referring to a different strand of methodology (e.g., sampling) or to a different type of mixed methods design (e.g., sequential or concurrent). The article further offers brief windows into other domains; the brief discussion on pragmatism is related to the philosophical issues in Domain 1 and the notion of “political legitimation” represents a tickle in Domain 4. Overall, this article is rich with generative ideas and possibilities and, like the Sandelowski et al. article, represents an important step forward in the development of a methodology for mixed methods social inquiry.

Domain 3 is the Site of Some Creative Ideas and Insights

Two of the remaining articles in this special issue offer creative ideas related primarily to Domain 3, or how to conduct mixed methods social inquiry. These are the articles by Pat Bazeley and Huey Chen.

Pat Bazeley’s article addresses the conceptual and practical challenges of *integrated* mixed methods data

analysis – that is, analysis of numbers and words – and, as such, spans issues from both domains two and three. The specific focus of Bazeley’s work is on computer software that enables integrated analyses. Yet, her typology of types of integrated data analysis – combined, converted, and blended – and her exceptionally useful examples extend this practical advice to meaningful conceptual ideas and concepts. Bazeley strives in her article to “imagine and envision what might be possible – to tread new paths,” (p. 65) and she accomplishes in this ambition very well.

Huey T. Chen presents an argument for using a mixed methods methodology for a theory-driven approach to program evaluation. Theory-driven evaluation is framed by the substantive issues at hand, for example, an intervention strategy to abate substance abuse among youth or an economic incentive to work among welfare recipients. This is in contrast to the customary privileging of methodology in evaluation studies. Given that substantive issues are inherently complex, a mixed methods approach is sensible for an evaluation oriented around issues of substance. Within this discussion, Chen offers four interesting strategies for mixing methods in a program theory-driven evaluation context: switch, complementarity, contextual overlay, and triangulation assessment. These methodological ideas, as framed within a specific site of application, might contribute usefully to the continued development and empirical critique of mixed methods strategies.

A Modest Foray Into Domain 1

The article by John Creswell, Ron Shope, Vicki L. Plano Clark, and Denise O. Green is intended to offer a counter-argument to recent critiques from leading qualitative inquirers that mixed methods inquiry represents a cooptation of the basic premises, stances, and ambitions of interpretivist, constructivist qualitative inquiry. Specifically, the critiques maintain that mixed methods inquiry relegates qualitative methods to a secondary or auxiliary status and does not honor or preserve the distinctive philosophical and value stances of qualitative traditions. The Creswell et al. article is thus located within the philosophical arguments that comprise Domain 1. And the authors construct their counter-argument by (a) citing the pronouncements of selected qualitative inquirers that mixed methods inquiry makes ample room for qualitative logics of justification, (b) offering some empirical examples of mixed methods inquiry in which qualitative methods played an important role, and (c) citing a mixed methods design typology in which qualitative methods can be an important, even dominant framework for an empirical study.

The authors further focus on particular dimensions of interpretive frameworks, namely, empowering participants and recognizing the historical and socio-

political context of the inquiry. While important, these are not the fundamental philosophical tenets of interpretive or constructivist ways of knowing; not addressed are issues of ontology or epistemology nor how different stances on reality and social knowledge can co-exist in the same study. So, while offering a brief engagement with the philosophical concerns of Domain 1, this article does not venture very far into the challenging terrain of philosophical frames for making meaning and knowledge in social inquiry.

A Meaningful Engagement with Domain 4

The final article in this collection, by Valerie Caracelli, offers a window into the intentional mixing of methods for better understanding, defined as the provision of political voice. This article thus engages with the sociopolitical commitments of Domain 4. In the article, Caracelli develops an argument for the importance of including ethnography in federal policy-relevant evaluation. She first observes that the current accountability demands and practices within the federal government narrowly constrain the kinds of evaluation studies favored and especially the kinds of information generated in such studies. Notably, neither information on program processes and participant experiences nor information on important features of program contexts is usually collected as part of a randomized experiment. Yet, this information is required for a "fully responsive" evaluation that generates "deep understanding" of particular program experiences and outcomes in particular contexts.

Moreover, argues Caracelli, ethnography can complement experimental or other quantitative methodologies in important ways by providing valuable information relevant to federal policy making that extends beyond outcome measurement and attribution. Ethnographic information can illuminate organizational culture and transformation, respond more fully to the multiple criteria actually used by policy makers in their decisions, and especially can give voice to the perspectives, experiences, and realities of program participants and of marginalized communities. Examples of the latter provided by Caracelli include a GAO study on immigration, efforts by the Census to address the "undercounting" of marginal populations such as the homeless, and studies of Early Head Start in low-income communities. Caracelli's recognition of the politics of method and the potential of mixed methods social inquiry to engage these politics in service of voice and equity are highly commendable.

Future Directions

Continued development in all domains of a mixed methods methodology for social inquiry is needed, perhaps those especially under-represented in this

collection of articles. While Domain 2 represents a critically important site for further development, other sites are less well represented in the contemporary mixed methods conversation and yet also present important contexts and issues for creative and thoughtful developmental work.

In the groundbreaking *Handbook of Mixed Methods*, Teddlie and Tashakkori (2003) cited six important issues in the field. These six issues map well onto the four domains of methodological development presented in this discussion. Relevant to Domain 1, Teddlie and Tashakkori (2003) cited as a key issue in the field, "the paradigmatic foundations for mixed methods research." For Domain 2, these authors cited "design issues" and "issues in drawing inferences," well represented in this volume by the Teddlie and Tashakkori and the Onwuegbuzie and Johnson articles, respectively. Connected to Domain 3, the *Handbook* editors note the importance of "the logistics of conducting mixed methods research" and in Domain 4, "the utility of mixed methods research (why do we do it?)" (The final issue cited by Teddlie and Tashakkori refers to language and nomenclature.) I would echo Teddlie and Tashakkori's developmental priorities, but again encourage participants in the mixed methods conversation to consider needed developments in all domains.

My additional thoughts about important future directions for the development and advancement of a methodology for mixed methods social inquiry include the following. *First*, I encourage contributors to this developmental work to be as welcoming of divergence and dissonance as of convergence and consonance. One vitally important role for mixed methods social inquiry is to trouble taken-for-granted understandings or assumed common meanings of constructs by incorporating a diversity of perspectives, voices, values and stances. In this role, mixed methods inquiry honors complexity alongside diversity and difference, and thereby resists simplification of inherently contextual and complex human phenomena. Convergence and consonance in the service of stronger validity are indeed important contributions of mixed methods inquiry, but so are divergence, dissonance, and difference. All are valuable and important.

Second, and related to the first point, I encourage participants in the mixed methods conversation to keep the debate about the "paradigmatic foundations for mixed methods research" alive and lively. As many authors have suggested (including many of the authors in this volume), there may well be an alternative paradigm that offers a sensible and substantive positioning and justification for mixed methods inquiry. And critical realism (Maxwell, 2004) or pragmatism (Biesta & Burbules, 2003) may indeed be strong candidates for such an alternative paradigm. But, for this argument to be made persuasively, further

work is needed on just how such a paradigm shapes and guides mixed methods practice. For example, where do the consequential, actionable assumptions about social knowledge that are advanced in most pragmatic philosophies show up in practice? What does such knowledge look like, and how is it validated? Or perhaps there is not just one paradigm that meaningfully justifies and guides mixed methods social inquiry. Perhaps a distinctive characteristic of a mixed methods methodology is its paradigmatic pluralism.

Third, it is important for the vitality and viability of a mixed methods methodology for social inquiry that it be relevant and useful to multiple domains of human activity. We therefore need participants and perspectives from all corners of the social science community, including traditional academic disciplines of psychology, sociology, and even economics, as well as applied fields like nursing, social work, education, and organizational development. Perhaps current participants in this developmental effort can invite colleagues from other fields to join them.

Fourth and finally, the development of a mixed methods methodology will continue to be dynamic and open to good ideas and fresh insights if we continue to honor both theory and practice. Some of the most generative conceptual ideas about mixing methods have come from field trials of mixed methods ideas or analytic reviews of mixed methods practice, most recently by Katrin Niglas (2004). It is not enough to think well; we must also demonstrate the value and importance of a mixed methods way of thinking in our practice.

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