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The Dilemma of Mixed Methods

Bradford J. Wiggins

A dissertation submitted to the faculty of
Brigham Young University
in partial fulfillment of the requirements for the degree of

Doctor of Philosophy

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August 2011

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ABSTRACT

The Dilemma of Mixed Methods

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The past three decades have seen a proliferation of research methods, both quantitative and qualitative, available to psychologists. Whereas some scholars have claimed that qualitative and quantitative methods are inherently opposed, recently many more researchers have argued in favor of “mixed methods” approaches. In this dissertation I begin with a review of the mixed methods literature regarding how to integrate qualitative and quantitative methodologies. Based on this review, I argue that current mixed methods approaches have fallen short of their goal of integrating qualitative and quantitative methodologies and I argue that this problem may be due to a problematic ontology. In response to this problem I propose and conduct an ontological analysis, which examines the writings of leading mixed methods researchers for evidence of an underlying ontology. This analysis reveals that an abstractionist ontology underlies current mixed methods approaches. I then propose that an alternative relational ontology might better enable mixed methods researchers to meaningfully relate qualitative and quantitative methodologies and I provide an exploration of what assuming a relational ontology would mean for mixed methods research.

Keywords: mixed methods, qualitative, quantitative, ontology, abstractionism, relationality

ACKNOWLEDGEMENTS

I owe an enormous debt of gratitude to my advisor Brent Slife. Not only has Brent provided superb instruction and guidance throughout the course of this dissertation, but he has also gone above and beyond the call of duty in making himself available to assist me. Brent I thank you for your mentorship and friendship these many years. Thanks also go to my dissertation committee for their time, commitment, and support of this project. This dissertation has been a long and demanding project and many of those demands extended onto my family and particularly onto my wife Annalisa Wiggins. Anna I thank you and honor you for your love, support, and patience. I could not have done this without you. Likewise, I thank the many family members who have provided me with support in a multitude of forms, all of which was invaluable in my progress and completion of this dissertation. Finally and most profoundly, my thanks go to my Father in Heaven for the many miracles, both small and great, that have come my way through this journey.

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The Dilemma of Mixed Methods

Chapter 1: Qualitative and Quantitative Methodologies in Opposition

The past three decades have seen a proliferation of research methods available to psychologists. With this preponderance of methods has come the so-called “paradigm wars,” arising from the perceived inadequacies of the received quantitative philosophy of science. Critics of quantitative methodologies offered an alternative philosophy of science which tended to favor qualitative methods. The juxtaposition of these two methodologies within the paradigm wars has led many to view quantitative and qualitative approaches to research as inherently opposed (e.g., Bednarz, 1985; Forshaw, 2007; Ogborne, 1995; Simpson & Eaves, 1985).

At present, there appears to be general acceptance of qualitative methods as having some value in psychological research, even if quantitative methods continue to dominate the mainstream of psychological research (Creswell & Plano Clark, 2007, 2011; Denzin & Lincoln, 1994; Hill & Lambert, 2004; Kazdin, 2003; Lambert, Garfield, & Bergin, 2004). Perhaps the best example of the field’s increasing openness to a diversity of research methods comes in the report of the American Psychological Association (APA) Presidential Task Force on Evidence-Based Practice (2006). This task force encouraged practitioners in psychology to base their practices upon the best research evidence available from methods as diverse as clinical observations, case studies, qualitative methods, randomized controlled trials, and meta-analyses. The task force’s endorsement of such a variety of methods seems to suggest that the supposed opposition of qualitative and quantitative methodologies has somehow been resolved.

However, although qualitative methods are achieving greater legitimacy alongside quantitative methods, their relationship to one another is not entirely clear. Are these methodologies in competitive opposition as the paradigm wars would suggest or are they

potential allies in psychological inquiry? In fact, many contemporary researchers, in step with the APA task force, are advocating the use of both quantitative and qualitative methodologies. Nevertheless, very few are elaborating how methods based on such divergent philosophies of science can be meaningfully integrated, leaving unanswered the questions and problems raised by the paradigm wars.

Worldviews, Methods, and Methodologies

In order to make sense of the paradigm wars, it is crucial that we understand that these philosophies of science originate from different views of the world—different worldviews. In other words, these philosophies are not simply abstract beliefs or propositions, but very real senses of the way the world operates. Indeed, for a method to be formulated, the formulators must *already* have these assumptions about the type of world in which the method would be effective and successful (Bishop, 2007). A worldview, then, is the framework of foundational beliefs, values, assumptions, and philosophies through which one experiences, interacts with, and makes sense of the world.

According to philosopher of science Thomas Kuhn (1962), worldviews (or paradigms in Kuhn's parlance) guide scientists in terms of what they observe and study, the nature of the questions they ask about their objects of study, how they structure these questions, and how they interpret the results of their investigations. Because worldviews are so basic to the practices in which scientists engage, they often operate behind the scenes and are taken for granted in the normal practice of science unless they are confronted with alternative worldviews (see Bishop, 2007; Slife & Williams, 1995). For example, by the end of the 19th century physicists largely took for granted the Newtonian worldview and presumed that their primary task was to work out the questions put forth by that worldview. However, when Einstein published his work on

special relativity he offered a competing worldview that brought into relief many of the Newtonian assumptions that heretofore had been taken for granted (e.g., time and space are absolute; Kuhn, 1962).

Similarly, the rise of qualitative methods in the social sciences resulted in a clash of worldviews—the paradigm wars. Qualitative methodology was founded in a worldview that sharply contrasted with the received worldview of quantitative researchers and many researchers observed these worldviews to be incompatible (see Slife & Gantt, 1999). These worldviews have been variously labeled, but are most commonly referred to in the literature as “positivist” (grounding quantitative methodologies) and “interpretivist” (grounding qualitative methodologies). In using these labels, I mean to follow the conventions of their use in the methodology literature where they refer to two families of philosophical assumptions (rather than single monolithic philosophies) that have guided these methodological traditions. In general, positivist researchers typically represent psychological phenomena numerically, they favor the observable in their investigations, they value the replication of findings, and they seek out causal explanations where warranted and available. Conversely, interpretivist researchers typically represent psychological phenomena in textual narratives, they favor unobservable meanings (along with the physically observable) in their investigations, they view most studies as unique in important ways (and thus not replicable), and they seek out meaning structures such as narrative structure (as opposed to causal structures) to explain phenomena.

The contention of incompatibility arises from the recognition that these worldviews widely differ and often contradict one another in their assumptions about what is real (ontology), how we can know this reality (epistemology), and what values and morals should guide researchers (axiology). Furthermore, many scholars have argued that research methods

implicitly carry the assumptions of their associated worldview and that they are biased toward interpreting the world according to these assumptions (Bishop, 2007; Danziger, 1985; Feyerabend, 1993; Gadamer, 2004; Polkinghorne, 1983; Slife & Gantt, 1999; Slife & Williams, 1995; Spackman & Williams, 2001; Sugarman & Martin, 2005; Williams, 2005).

To sort out and examine all of these claims and issues, we need to clarify important terms, in particular the terms “method” and “methodology.” Although we sometimes use these terms interchangeably in psychology (Guba & Lincoln, 1988), they carry an important distinction which pertains directly to the role of worldviews in research. Whereas the term “method” refers to the procedures, techniques, and approaches used to gather, store, analyze, and present research information, the term “methodology” refers to the study or critique of methods and makes reference to the worldviews which ground such a study or critique. In other words, methods are guided by methodologies, which in turn are guided by the basic fundamental assumptions of a worldview.

For example, a positivist worldview assumes that reality can be known through sensory observation (an epistemological assumption; Slife & Williams, 1995). This worldview shapes a positivist methodology which values observability, selecting and developing methods that attend to observables and rejecting methods that do not. This is one reason that most positivistic research methods in psychology rely on operationalism—their worldview and methodology demand that unobservables like thoughts, emotions, personalities, and relationships be translated into observables like questionnaire responses or behaviors if they are to truly be known. Conversely, an interpretivist worldview assumes that reality is necessarily constituted, at least in part, by interpretation and that it can only be known by attending to interpretive meanings. Thus, an interpretivist methodology selects and develops methods that attend to meanings (regardless

of their sensory observability), relying on linguistic methods and data (broadly conceived) as the purest representations of meaning. What this means is that a method is *always* shaped and biased by a methodology and worldview. Likewise, because methods carry with them the purposes and values of a particular worldview, the integration of methods from seemingly incompatible worldviews must address how it overcomes this incompatibility.

The Incompatibility of Methodologies

The thrust of the incompatibility thesis is that many of the core philosophies and assumptions of the post-positivist and interpretivist worldviews are in irreconcilable opposition (e.g., material reality vs. interpreted reality) as are the methodologies and methods that arise from them (e.g., sensory observation vs. linguistic meaning). To put it another way, the use of one methodology contradicts and effectively rules out the other if the two truly are incompatible because their basic understandings of the world are in competition with one another. It is on this claim of incompatibility that some have concluded that qualitative and quantitative methodologies are inherently opposed (Bednarz, 1985; Forshaw, 2007; Ogborne, 1995; Simpson & Eaves, 1985). Likewise, this opposition has led some researchers to advocate one methodology for psychological research and to reject the other.

From the qualitative perspective, for example, Stam (2006) expressed concern that, should quantification be incorporated in the interpretive tradition of qualitative research, researchers would risk adopting certain biases of post-positivism. Although Stam was careful not to foreclose on the possibility that quantification *could* have a place in the interpretive tradition, he argued that the interpretive tradition has no clear approach to numerical measurement. This lack, according to Stam, leaves a vacuum that is more likely than not to be filled by approaches that still have their roots in post-positivism. Thus, although Stam attempted

to not reject quantification outright, he argued that quantitative methods would at least need to be reinvented to fit in the qualitative worldview, amounting to a rejection of quantitative *methodology*, and thus quantitative methods as they are currently practiced in psychology.

In contrast, those favoring the ascendancy of quantitative over qualitative methodologies tend to make the argument against qualitative methodologies by default, since the post-positivistic worldview has historically dominated psychological research. For example, Stiles and colleagues (2006) presented a review of types of evidence that might be considered in evidence-based practice in psychology. Although the group considered a diversity of methods, including single-case and qualitative methods, they evaluated these methods according to the assumptions and biases of the post-positivistic paradigm. Specifically, they considered whether a method was able to establish Humean causation, minimize researcher and subject bias, and aggregate and generalize results. Although the group did not argue against qualitative methods (in fact one researcher was an advocate for qualitative methods), they measured these methods according to a methodological framework which favors quantitative methods. It is no surprise then that these methods were presented in ascending order according to their fit with the post-positivist worldview, with randomized controlled *quantitative* trials (RCTs), which are post-positivist in nature, at the pinnacle. Indeed, the portion of the chapter by Steven Hollon advocating RCTs argues that RCTs are the gold standard of evidence for psychological practitioners, implying that other methods fall short and that, when available, RCTs are to be preferred. The implication of this discussion is that qualitative methods are implicitly relegated to having low evidentiary value and that, perhaps more importantly, the interpretivist worldview is simply ignored.

Mixed Methods

Despite these claims of incompatibility in qualitative and quantitative methodologies and the tendency of some researchers to ignore the foundational differences in worldview, many more researchers have felt reluctant to discount one or the other of these methodologies (Aluko, 2006; American Psychological Association Presidential Task Force on Evidence-Based Practice, 2006; Barrett, 2003; Brannen, 2005; Carey, 1993; Dzurec & Abraham, 1993; Haight, 1997; Henderson & Bedini, 1995; Hoshmand, 1989; Lambert, et al., 2004; Looker, Denton, & Davis, 1989; McKeganey, 1995; Michell, 2003; Onwuegbuzie & Leech, 2005a, 2005b; Plewis & Mason, 2005; Richards & Bergin, 2005; Shadish, 1995; Stiles, 2006; Tashakkori & Teddlie, 2003). These researchers worry that constraining the discipline to only one set of methods would be unnecessarily restrictive and that all research evidence can have at least *some* practical value. Thus, the most common response at this point in the qualitative/quantitative debate is a call for some sort of integration¹ of the two methodologies, variously labeled “methodological eclecticism” (Hammersley, 1996; Priola, Smith, & Armstrong, 2004; cf. Yanchar & Williams, 2006), “methodological pluralism” (Dawson, et al., 2006; Payne, Williams, & Chamberlain, 2005; Richards & Bergin, 2005; Sechrest & Sidani, 1995; Slife & Gantt, 1999; Yanchar, 1997), or “mixed methods” (Bryman, 2006; Creswell & Plano Clark, 2011; Curlette, 2006; Giddings & Grant, 2006; Greene, Benjamin, & Goodyear, 2001; Hanson, Creswell, Plano Clark, Petska, &

¹ Within the literature, many calls for mixed-method approaches use the term “integrate” or “integration” in reference to their intended relationship between qualitative and quantitative methodologies (e.g., Anchin, 2008; Patricia Bazeley, 2009; Blake, 1989; Brady & O’Regan, 2009; Bryman, 2006; Caracelli & Greene, 1993; Connidis, 1983; Dawson, Fischer, & Stein, 2006; de Vries, Weijts, Dijkstra, & Kok, 1992; Dzurec & Abraham, 1993; Giddings & Grant, 2006; Haight, 1997; Kelle, 2006; Mason, 2006; Rabinowitz & Weseen, 1997; Sandelowski, Barroso, & Voils, 2007; Sherman & Strang, 2004; Slonim-Nevo & Nevo, 2009; Stange, Crabtree, & Miller, 2006; Steckler, McLeroy, Goodman, & Bird, 1992; Sullivan, 1998; Waller & Gilbody, 2009; Wiggins & Forrest, 2005; Woolley, 2009). Although this term can be taken in the strong sense to mean an amalgam or blending of the methodologies, these researchers appear to intend the term to indicate an interface or meaningful relating of the two methodologies. For my purposes here I will rely on the latter usage of the term.

Creswell, 2005; Harden & Thomas, 2005; Johnstone, 2004; Kelle, 2006; Kelley, 2007; Mason, 2006; Shank, 2006; Stange, et al., 2006; Tashakkori & Teddlie, 2003). As the term “mixed methods” has become most prominent, I will use it to refer generally to attempts at the integration of qualitative and quantitative methodologies. Indeed, the issue of mixed methods has become such an important issue in the social sciences that entire journals have been formulated as outlets for the work involved in dealing with it (e.g., *Journal of Mixed Methods Research*).

Proponents have offered a number of rationales for why a mixed methods approach is preferable. First, most researchers acknowledge that all methods have their limitations (cf. Denzin & Lincoln, 1994; Shadish, Cook, & Campbell, 2002) and some worry that constraining our discipline to only one set of methods would leave us acutely vulnerable to its particular limitations (Johnson & Turner, 2003; Kelle, 2006; Slife & Gantt, 1999). Likewise, some contend that drawing from multiple methods can insure against the limits of any one method (Kelle, 2006; McGrath & Johnson, 2003; Plewis & Mason, 2005; Stainback & Stainback, 1985; Steckler, et al., 1992). For example, Kelle (2006) argued that the flexibility and greater intimacy of qualitative methods are better suited than quantitative methods to help researchers obtain data that is culturally nuanced or that may depend on developing a relationship of trust with subjects. Likewise, Kelle asserted that following up such research with a quantitative study can ultimately allow for greater generalizability of the findings. In this way the strengths of each methodology (flexibility and intimacy for qualitative, generalizability for quantitative) make up for the other’s weaknesses (low generalizability for qualitative and rigidity and objectivity for quantitative).

Another rationale for mixed methods has arisen as some researchers have questioned whether the distinction between the worldviews of qualitative and quantitative research are as

sharp as they are often portrayed, especially considering that at the level of practice many psychologists seem to be able to integrate the methods and findings of both qualitative and quantitative research (Howe, 1988, 1992; Lund, 2005; Onwuegbuzie & Leech, 2005a, 2005b; Sechrest & Sidani, 1995). Likewise, some make the argument that neither paradigm precludes the use of any particular method (Aluko, 2006; Lund, 2005; Onwuegbuzie & Leech, 2005a, 2005b). That is, there is nothing in interpretivism that prohibits the use of a numerical representation of data nor does post-positivism prohibit the use of a verbal representation of data.²

The Dilemma of Mixed Methods

Notwithstanding the rationale and optimism of mixed methods advocates, the success of the mixed methods project in bringing about a satisfactory integration of qualitative and quantitative methodologies is far from clear (see Chapter 2; Yanchar & Williams, 2006). That is to say, the question remains as to whether mixed methods researchers have sufficiently overcome the problems raised in the paradigm wars in their proposals for methodological integration. The purpose of this dissertation, then, is to take up what I am calling “the dilemma of mixed methods”—the tension between the pragmatic call for integration from research practitioners and the philosophical and methodological objections from the paradigm wars that suggest how deeply problematic this integration may be.

I begin this investigation in Chapter 2 with a review of the mixed methods literature, examining the success of current mixed methods researchers in bringing about an integration of qualitative and quantitative methodologies that preserves what is essential to each methodology

² Of course, this argument does not address the problem that Stam (2006) raised, namely that these worldviews deal with each other’s methods in completely different ways.

and its grounding worldview. In this chapter I argue that current mixed methods approaches overwhelmingly fall short of preserving multiple worldviews in their attempts at integration. Rather, I offer evidence that they either implicitly or explicitly embrace a single worldview, severely limiting the influence of the alternative worldview and its methodology. That is, this review of the mixed methods literature suggests that mixed methods approaches fail to meaningfully relate qualitative and quantitative methodologies at the level of their worldviews, and thus accommodate a true diversity of methodologies. My contention, concluding this chapter is that the dilemma preventing satisfactory integration in mixed methods, is not unsolvable (as this review of the literature would seem to suggest), but is rather due to a problematic ontology (philosophy of what is most real). I argue that an ontological analysis of the mixed methods literature is necessary to reveal and clarify the ontological roots of the dilemma of mixed methods.

In fair warning to readers, this move toward exploring ontology necessarily moves us into much deeper philosophical waters than are typical of most discussions of social science research methodology. Although I attempt to provide practical examples throughout these philosophical explorations, the final chapter of my dissertation will include a substantial case example that is thoroughly grounded in the practical. My hope is that this example will serve as an anchor for the philosophy I employ in this dissertation and will illustrate my arguments in practically accessible ways.

In preparation for this ontological analysis, Chapter 3 takes up in greater depth the issue of ontology, laying out two basic ontological frameworks: abstractionism (the philosophy that abstractions such as laws and principles are most real) and relationality (the philosophy that relationships are most real). In preparation for my ontological analysis I explore the features of

each ontology as well as the implications that each would have for mixed methods, in particular their implications for the issues surrounding the incompatibility of methodologies. This understanding of abstractionist and relational ontologies, along with their basic features, will serve as an “ontological toolbox” to inform my analysis.

Following the ontological framework laid out in Chapter 3, Chapter 4 takes on the ontological analysis of the mixed methods literature. In this analysis I examine the writings of leading mixed methods researchers for evidence of either an abstractionist or relational ontology grounding their attempts at integrating qualitative and quantitative methodologies. As this analysis reveals, current mixed methods approaches are deeply entrenched in an abstractionist ontology, creating a number of problems for methodological integration.

In response to my Chapter 4’s conclusions, Chapter 5 explores how a relational ontology might approach methodological integration in a way that overcomes the problems of abstractionism. I examine what a truly relational approach to mixed methods would look like and offer an in depth example of how a relational ontology would meaningfully relate qualitative and quantitative methodologies within a particular mixed methods research context.

Chapter 2: Examining Mixed Methods

Although the current movement for mixed methods is itself relatively recent, a number of scholars have pointed out that the idea of using multiple methods within a study is not new (e.g., Onwuegbuzie & Leech, 2005b; Teddlie & Tashakkori, 2003). For example, Teddlie and Tashakkori (2003) observed that the first half of the 20th century was a period in the social sciences that held a lesser demand for methodological orthodoxy. During this period many researchers drew upon both qualitative and quantitative methods with very little protest or concern for methodological worldview clashes. Teddlie and Tashakkori explained that it was not until the period following World War II that the field moved toward greater methodological orthodoxy with the ascendancy of positivism (and later post-positivism). Even within this period where post-positivist orthodoxy dominated, they noted that post-positivists still acknowledged the importance of multiple methods (though typically multiple post-positivist methods), maintaining that the validity of research findings is bolstered by confirming evidence from multiple research methods (e.g., Campbell & Fiske, 1959). Likewise, with the rise in prominence of qualitative methods in the 1970s and 80s, many advocates of qualitative methods argued for this sort of method triangulation to include both qualitative and quantitative methods (Connidis, 1983; Deshpande, 1983; Greene & McClintock, 1985; Hinds & Young, 1987; Jones, 1987; Lipson & Meleis, 1989; Mark & Shotland, 1987).³

Nevertheless, critics of mixing methods are quick to point out that the approaches described in the brief historical sketch above do not, in fact, involve mixing methodological worldviews (e.g., Sale, Lohfeld, & Brazil, 2002). For example, it is quite common for

³ These researchers, however, tended to advocate triangulation of qualitative and quantitative data without addressing the potential problems that could arise at the methodological or worldview level.

quantitative researchers to run qualitative focus groups to help establish quantitative questionnaire items without ever departing from the post-positivist worldview. The use of a focus group does not depend on an alternative worldview. Rather, within the post-positivist framework the focus group is simply a “quick and dirty” initial step toward the quantitative work that will better accomplish the goals of post-positivism (e.g., objectivity, generalizability, etc.). Mixing methods in this sense typically leaves the issues of methodology and worldview in the background because the methodological worldview is “given” and likely taken for granted at the outset.

However, the mixed methods movement is calling for something much more radical than simply using multiple methods within a single worldview. Rather, many within the mixed methods movement are advocating for researchers to draw upon a mixture of *methodologies* (Bazeley, 2009; Howe, 1988). These researchers argue that the real strength of mixed methods is in allowing for the methodological diversity that comes from using methods across worldviews rather than in simply using both numerical and textual data. As I discussed in the previous chapter, because methodologies are inherently tied to worldviews, a mixture of methodologies must address how those methodologies’ worldviews are integrated as well. This is no small task—it was the tension and seeming incompatibility between post-positivist and interpretivist worldviews that gave rise to the paradigm wars. Because these worldviews made contradictory ontological assumptions (e.g., objective material reality vs. interpretive meaning-based reality), many researchers concluded that psychological researchers were left to choose one worldview or the other as a better fit for making sense of psychological phenomena (Bednarz, 1985; Smith & Heshusius, 1986). In this sense, the mixed methods movement’s call for research drawing upon multiple methodologies is unprecedented and many within the movement have struggled to

articulate how researchers might meaningfully integrate qualitative and quantitative methodologies (see Yanchar & Williams, 2006).

Perhaps one reason for this struggle is because the push for mixing methodologies gives rise to difficult questions regarding how one might practically overcome the problems raised by the paradigm wars that would seem to prevent integration. For instance, how might a researcher take seriously the post-positivist demand that researchers be objectively detached from their object of study and at the same time embrace the interpretivist demand that researchers directly engage their object of study, fully expecting their biases and values to be involved in the process? Or, in considering the findings of multiple studies, both qualitative and quantitative, how should a researcher weigh the evidentiary value of a randomized controlled trial against a phenomenological study? Should the researcher view them in terms of the post-positivist values of predictability and control or in terms of the interpretivist values of context and lived experience? As these problems imply, the clash of worldviews suggested by the paradigm wars creates not only philosophical, but also practical problems for researchers attempting to mix qualitative and quantitative methods.

Thus, in this chapter I offer a critical examination of the mixed methods literature on the integration of qualitative and quantitative methods. In particular, I attend to the need to integrate methodologies and worldviews because, as mixed methods advocates have argued, the thrust of the mixed methods movement is that these paradigms or worldviews need not be exclusive and competitive, but rather can be complementary and synergistic. First, I examine proposals from mixed methodologists on how researchers should go about mixing methods, assessing the extent to which the authors offer a true methodological integration. This examination will describe how many mixed methodologists fall short of their goal of meaningfully integrating qualitative and

quantitative methodologies. Concluding this examination, I will suggest that these mixed methodologists lack a clear framework for bringing about a meaningful integration of qualitative and quantitative methodologies at the worldview level and that these methodologists end up—often unknowingly—adopting a framework that actually prevents such an integration. Second therefore, I explore these problematic frameworks with particular attention to those frameworks that appear to be operating unacknowledged and unexamined. As we will see, these frameworks overwhelmingly embrace mixing methods within a single dominant worldview and discard the alternative worldview.

Mixing Methods

As the previous chapter discussed, many researchers are arguing that they do not need to choose between quantitative methods with a post-positivist worldview and qualitative methods with an interpretivist worldview. One of the challenges for these researchers has been demonstrating how researchers can mix methods without losing what is essential to either method. It is well recognized in the philosophy of science that methods cannot be what they are without methodologies and worldviews to guide them (see Bishop, 2007), so a meaningful mixture of methods should also include a meaningful mixture of methodological worldviews.

In their efforts to describe how researchers might practically accomplish such a mixture, proponents of mixed methods have made arguments for mixing at various levels of research. Some have argued that researchers should, at a minimum, be able to draw upon studies from both qualitative and quantitative traditions in their systematic reviews of research literature, bringing a diversity of worldviews and methods to their conclusions about a particular literature. Many others go farther, arguing that researchers can benefit from methodological diversity within a single study that uses both qualitative and quantitative methods. I will take each of these

proposals in turn, examining whether they successfully achieve a diversity of worldviews in their mixing of methods.

Mixing methods across studies. In both the interpretive and post-positivist worldviews many take it for granted that researchers can draw upon evidence arising from a diversity of research methodologies in conceptualizing their object of study and contextualizing their research question in the literature (e.g., Creswell & Plano Clark, 2011; Shadish, et al., 2002). Until meta-analytic techniques emerged in recent decades, reviews of research literature did not explicitly rule out one class of methods or the other. Nevertheless, several critics have observed that the methodological biases of the researcher's worldview tend to focus systematic literature reviews to a single class of methods for those studies included in a review, rather than a mixture of methods (Dixon-Woods, et al., 2006; Harden & Thomas, 2005).

Perhaps the most thorough attempt to document the possibilities of mixing qualitative and quantitative methodologies in literature reviews comes in the 2004 report from the Health Development Agency arm of the British National Health Service by Dixon-Woods, Agarwal, Young, Jones, and Sutton. The report addresses the growing importance of qualitative methodology in medical and public health research and the need for evidence-based practitioners to incorporate not only quantitative, but also qualitative research into the evidence base that guides their practices. Although Dixon-Woods and colleagues offer a wide range of approaches to integrating qualitative and quantitative research in literature reviews, they acknowledge that none of these approaches is likely to be philosophically satisfactory to both post-positivists and interpretivists as they tend to compromise one worldview or the other. They noted, for example, that where quantitative (post-positivist) literature reviews tend to employ criteria for the quality of research that is included in the review, many qualitative (interpretivist) researchers oppose

such abstract criteria, arguing that the quality of qualitative research is dictated by the context of the study. They further note that some interpretivists are concerned that criteria could stifle the methodological creativity that is a hallmark of much of qualitative methodology. Thus, researchers are left to choose the value of one worldview or the other—either embrace post-positivist objectivism by using quality criteria or interpretivist contextualism by eschewing quality criteria.

Furthermore, Dixon-Woods and colleagues (2004) observed that a number of purists within the interpretivist tradition object to synthesizing research across qualitative traditions, let alone across interpretivist and post-positivist methodologies. They explained these purists were concerned that removing findings from the philosophical and methodological context in which they were generated would distort and perhaps misrepresent the findings. This objection characterizes what Dixon-Woods and colleagues observed as potentially problematic with many of the approaches to synthesis that they offer—these approaches tend to advocate translating findings from the language and worldview of one approach in order to make them compatible with the findings that are in the language and worldview of the other approach.

The report refers to this practice as “qualitising” quantitative results (translating the numbers of quantitative findings into the narrative language of qualitative research) and “quantitising” qualitative results (translating the narrative reports of qualitative findings into numbers that are compatible with quantitative findings; see also Dixon-Woods, et al., 2006). Not only do these practices create practical methodological problems (e.g., the lack of statistical power in low n qualitative studies compared to typically higher n quantitative studies; the relative lack of narrative detail in quantitative studies when translating them into qualitative data; Dixon-Woods, et al., 2004), but more importantly they risk diluting or distorting data through the

translation process and ultimately discount one worldview in favor of the other (Harden & Thomas, 2005).

In an attempt to avoid the problems of synthesis that Dixon-Woods and colleagues (2004) encountered, others have attempted to mix methods in literature reviews by opting to perform systematic reviews in parallel, with a separate meta-analysis of quantitative data and textual analysis of qualitative data (Harden & Thomas, 2005). The trouble with this approach is that it never truly relates qualitative and quantitative findings. For example, in their review of qualitative and quantitative research on computerized cognitive behavioral therapy Waller and Gilbody (2009) address each of their research questions with separate reports for qualitative and for quantitative findings, but then offer no discussion of the relationships of these findings. Furthermore, they bypass any question of methodological worldview, treating the findings of both methodological approaches as if they are already philosophically compatible. Harden and Thomas (2005) argue that these parallel findings can then be related via “triangulation” (more on triangulation below), but, as is often the case with this term, they merely give a name rather than an explanation for how this is to be done. How does one “triangulate” completely different philosophies of what is real?

Thus, although many assume that both systematic and informal reviews of research literature are amenable to mixed methods approaches, it remains unclear as to how to relate the findings of two methodologies without one worldview and its methodological biases being made into the other. As the researchers reviewed above demonstrate (Dixon-Woods, et al., 2004; Dixon-Woods, et al., 2006; Harden & Thomas, 2005), it is possible to engage both qualitative and quantitative methods in literature reviews, but they fall short of integrating the worldviews of the two methodologies (which Dixon-Woods, et al., 2006 acknowledge) because their

guidelines lead researchers to either favor a single worldview or to avoid relating the two worldviews. These flaws appear to fall short of the aims of mixed methods researchers who want to engage and relate, not only methods from both traditions, but also their worldviews.

Mixing methods within a study. In addition to using mixed methods across studies, it is also possible for researchers to attempt to mix methods within a single study, using both qualitative and quantitative methods to investigate a particular research question. As we saw with mixing methods across studies, however, much also remains unclear regarding how to properly integrate qualitative and quantitative methods and worldviews within a study. For example, Morse, Niehaus, Wolfe, and Wilkins (2006) argued that studies that employ both quantitative and qualitative methods tend to treat one method as more central or dominant (at least implicitly), with the other method serving a supplementary role. These reports of the repeated dominance of one worldview over another would seem to violate the quest for methodological diversity and the egalitarian spirit of many calls for mixed methods (e.g., American Psychological Association Presidential Task Force on Evidence-Based Practice, 2006; Kelle, 2006).

Perhaps the most obvious way in which this happens is when mixed methods are used in sequence in a study, with one method seen as laying a preliminary or exploratory groundwork to then be built upon by the dominant and culminating method (e.g., de Vries, et al., 1992). This hierarchical approach to methods has long been associated with the post-positivistic worldview's treatment of qualitative methods as subservient to quantitative methods, with qualitative methods frequently viewed as hypothesis generators or questionnaire item generators for the quantitative work to come (Pernice, 1996; Plewis & Mason, 2005). In this sense, the post-positivist worldview generally views qualitative research as helpful and appropriate for the discovery

context of research, but not for the justification context, all of which is still post-positivist in nature. However, this practice has fallen under sharp criticism from interpretivists, many of whom claim that this approach severely limits the nature and scope of qualitative methods under consideration and overlooks the purposes and values that many qualitative researchers attribute to these methods (Bryman, 1984; Morse, 2005). The point here is that mixing methods hierarchically falls short of integrating methodological worldviews and often continues to exclude or discount methods that the opposing worldview finds valuable and important.

Some have tried to deal with this problem by proposing a more formalized approach to deciding which method should dominate a study. For example, Morgan (1998) argued that it is a practical necessity that one or the other method dominate a study and that researchers should deliberately choose how this will take place in their study. Morgan offered a “Priority-Sequence Model” which advocates that researchers choose which method will be primary in a study and then determine whether the complementary method will play a preliminary or follow-up role. Unfortunately, Morgan does not offer any guidance as to how a researcher might determine which method ought to dominate a study. Rather, he merely outlines the technical details for how research designs might be carried out once these decisions have been made. Thus, it remains unclear as to how researchers might mix methods without uncritically defaulting to one worldview or the other.

Some may wonder whether it is really a weakness if one method dominates a particular study, especially if researchers balance this dominance across studies. However, Yanchar and Williams (2006) demonstrated how the worldview of the primary method tends to pervade the use and interpretation not only of the primary method in a mixed methods study, but also of the supplementary method. They gave an example of a mixed methods study (Onwuegbuzie &

DaRos-Voseles, 2001) in which qualitative phenomenological data were translated to quantitative data (frequency counts) and were marshaled as support for causal inference. As Yanchar and Williams (2006) observed, this practice not only overlooks some of the greatest potential strengths of qualitative methods (e.g., contextual detail and phenomenological insight), but it also employs them to ends for which they are ill suited.

Their example here raises several important questions. First, is a mixture of methods without a mixture of the methodologies that originated and guided the methods sufficient to achieve the purported advantages of mixed methods approaches (e.g., diversity of strengths and weaknesses, richness of multiple sources of data, etc.)? Yanchar and Williams argued that, if anything, the use of mixed methods did not achieve these advantages, but instead it *weakened* the study in their example because of the poor fit of methods to the task at hand. They explained that attending to methodological worldviews is essential in mixed methods research because the worldviews that produce methods do so with particular goals for those methods (e.g., post-positivist methods are generally geared toward producing objective and generalizable accounts of causal processes) and mixing methods uncritically can lead researchers to use methods that are suited to goals that do not match their research goals. Analogously, a “mixed methods” carpenter could approach cutting boards with both hammers and saws—perhaps even occasionally succeeding in chopping the wood with the hammer. However, the carpenter’s need for a precise, clean, and fast cut point to the saw as the tool for this job and the hammer as the tool for a different job.

This discussion leads to a second question: if researchers use supplementary methods for purposes to which they are ill suited (those of the dominant methodology), would they not be better served by methods from the dominant methodology which match their purposes? It

appears unlikely that qualitative methods would provide any advantage toward causal inference (the goal of quantitative methods) that would not be met at least as well by a quantitative method, nor that quantitative methods would add contextual richness or phenomenological insight (the goal of qualitative methods) beyond what could be achieved with qualitative methods. Returning to the carpenter analogy, various types of saws might aid the carpenter in his needs for cutting, but hammers are unlikely to meet these needs. Likewise, a variety of hammers are ideal for pounding, whereas saws are not. Furthermore, and perhaps most importantly, the supplementary method in a very real sense ceases to be “supplementary” because it loses its role of “supplementing” the primary method’s worldview with the perspective of an alternative worldview. A supplementary hammer in a cutting task simply becomes a poor saw.

It appears, then, that the major obstacle that impedes mixed methods approaches, either across or within studies, is achieving an adequate integration of research methodologies and their associated worldviews. The examples reviewed above demonstrate that, despite their intentions for methodological and worldview diversity, these mixed methods approaches ultimately subscribe to a single dominating worldview. Perhaps one reason why they fall short of this diversity is because there is no apparent framework to guide how qualitative and quantitative methodologies are to be integrated at any level of analysis. As Yanchar and Williams (2006) demonstrated, methods lose their identities without methodologies and worldviews to guide them. Yet many of the researchers reviewed above seem to overlook the crucial role of methodologies in the mixing of methods.

Hidden Frameworks for Methodological Integration

The above discussion suggested that the dilemma of mixed methods arises, at least in part, from focusing on methods while ignoring methodologies in mixed methods approaches. By ignoring methodologies, we risk being guided in our research by a framework that is implicit, unacknowledged, and unexamined (Slife & Williams, 1995) and that may not actually serve our purpose of meaningfully relating the worldviews and methodologies that ground quantitative and qualitative methods. In other words, the task of integrating qualitative and quantitative methods in a way that attends to their guiding methodologies involves a guiding framework or theory for how to relate those methodological worldviews (see Slife, 2000). Whereas the previous section of this chapter addressed the struggle of mixed methods researchers in relating qualitative and quantitative methods at the worldview level, the purpose of this section is to examine what lies behind this struggle—their theoretical frameworks for methodological integration. As I will illustrate below, most current approaches to mixed methods are, in fact, guided by frameworks for integration that not only sidestep *meaningful* integration of methodologies, but are also often unacknowledged or hidden. I will examine these frameworks for methodological integration in terms of three basic categories: methodological eclecticism, methodological appropriation (acknowledged), and methodological appropriation (unacknowledged).

Methodological eclecticism. Methodological eclecticism can be defined as the use of qualitative and quantitative methods that relies on an established set of procedures to mix the methods, usually without true integration of their incumbent worldviews. The emphasis for methodological eclecticism is on the procedures or methods that are meant to ensure proper integration of methods because methodological eclecticism is based on the assumption that, given the proper procedure, researchers need not concern themselves with methodologies or

worldviews—the procedures somehow attend to these problems for them. I will review three examples of methodological eclecticism here: triangulation, methodological demarcation, and methodological reclassification.

Triangulation. Perhaps the earliest and best known version of methodological eclecticism is the concept of triangulation (Webb, 1966). The term refers metaphorically to the geometric principle of the same name that is used to determine the coordinates of and distance to a point, given a knowledge of two other fixed points. For social scientists triangulation has come to mean that researchers can take greater confidence in the validity of a research finding if the research draws upon multiple methods with converging findings (Bryman, 1984; Harden & Thomas, 2005; Kelle, 2006; Sechrest & Sidani, 1995). Put another way, researchers assume that they are able to map a clearer and surer picture of reality when findings from multiple methods converge. This approach is procedural at a fairly general level; the procedure being the use of multiple methods in the service of validity.

Triangulation has fallen prey to two main criticisms. First, Harden and Thomas (2005) questioned the rationale of checking the results of one method against the results of another method, arguing that not all methods are equally suited to every research question. They pointed out that, in practice, data from different methods often conflict rather than converge and that these conflicts are typically resolved by favoring one method's reliability over another's. Harden and Thomas explained that "using two or three different methods that are weaker than others at answering a particular type of question does not give a more reliable and valid answer. The selection of method should be determined by the question being addressed" (p. 268). In other words, multiplying methods does not necessarily lead to greater validity. For example, recall Yanchar and Williams's (2006) critique of Onwuegbuzie and DaRos-Voseles's (2001) mixed

methods study. Not only were the qualitative methods forced to fit the causal question being addressed, but as Yanchar and Williams (2006) observed, they detracted from the validity of the overall findings because of the poor fit of the methods to the question.

Second, triangulation ignores the problems that arise when triangulating methods also means triangulating worldviews. Triangulation within a worldview is less problematic because there is greater consistency across methods in their basic ontological and epistemological assumptions that guide researchers in everything from conceptualizing the phenomenon of interest to posing the research question to designing the study. However, when the studies to be triangulated are grounded in different worldviews they will be making very different and often incompatible assumptions about reality and knowledge. For example, Annells (2006) argued that triangulation will inevitably break down when triangulating worldviews that are discordant in their basic assumptions about reality, their justifications for the research process, and their criteria for the quality of research. Although it is possible that the findings of studies based in opposing worldviews may converge, it is much more likely (as Harden & Thomas, 2005 noted) that the findings will conflict in some way (e.g., Perlesz & Lindsay, 2003). Because these conflicts are philosophical (worldview-based) rather than empirical they require a philosophical solution, but triangulation has none to offer.

Methodological demarcation. In addition to triangulation, several researchers have proposed a second variety of methodologically eclectic approaches in recent years in which they attempt to formally demarcate the appropriate domains for qualitative and quantitative methodologies respectively. For example, McKeganey (1995) suggested that quantitative methods are particularly suited to large group research and qualitative methods to studying individual differences. He argued that by using these methods in tandem, each method can point

the other toward what is less clear within its respective domain. Nevertheless, as with triangulation, McKeganey's approach ignores the problems that arise in relating studies that are based in opposing worldviews. Rather, McKeganey simply assumed that, given their appropriate domain, qualitative and quantitative research could be compatible. Likewise, his division of qualitative and quantitative methods in terms of their suitability to sample size would likely be unsatisfying to many researchers of both camps. Not only do both methodologies have certain methods for both large and small sample sizes, but many researchers rank other characteristics of the object of study as more important than sample size in the selection of an appropriate research method (e.g., Creswell & Plano Clark, 2011; Denzin & Lincoln, 1994; Kazdin, 2003).

Methodological reclassification. As a third example of methodological eclecticism, Onwuegbuzie and Leech (2005b) also suggest a reclassification of quantitative and qualitative methods, this time in terms of exploratory and confirmatory methods. They explain that exploratory methods include quantitative methods (e.g., descriptive statistics, cluster analysis, exploratory factor analysis) and qualitative methods (e.g., traditional thematic analyses). Likewise, they assert that confirmatory methods are not limited to traditional quantitative inferential statistics, but can also include "confirmatory thematic analyses" which researchers seek to confirm previous findings by replicating qualitative thematic analyses. According to Onwuegbuzie and Leech, conceptualizing methods and methods courses as exploratory and confirmatory rather than as qualitative and quantitative will foster a less polarized attitude, leading researchers to see both qualitative and quantitative methods as part of a common toolbox.

The problem here is that Onwuegbuzie and Leech do not address how the fact that methods could have certain common investigatory purposes (exploration and confirmation)

overcomes the basic differences in the ontological and epistemological assumptions of each worldview. Indeed, these worldviews have quite divergent values and assumptions regarding confirmation and exploration. Qualitative research is rarely seen as confirmatory and interpretivists assume a dynamic reality, leading them to be less concerned with replication since they often expect their findings to be unique to the time, place, and sample investigated. Likewise, post-positivists tend to see exploration as a preliminary step toward the more important confirmation of contextless laws and principles, whereas interpretivists tend to see exploration as both the start and endpoint of research. Classifying methods as Onwuegbuzie and Leech propose ultimately ignores the dilemmas of relating worldviews and methodologies rather than resolving these dilemmas.

The common problem of these methodologically eclectic approaches is that they each offer a procedure for mixing methods that does not ultimately address the problems and contradictions arising from sharp differences in the respective worldviews of each methodology. In these cases the procedure offers the appearance of adequately relating the two sides without really addressing the fundamental problems.

Methodological appropriation. In addition to methodological eclecticism, methodological appropriation is another framework that guides many mixed methodologists. As its name implies, methodological appropriation refers to mixed methods approaches that seek to assimilate the seemingly disparate worldviews of qualitative and quantitative methodologies by adopting qualities of one within the other. Methodological appropriationists approach this reconciliation by combining the methodologies, as best they can, within their own native worldview. As I will discuss below, this becomes problematic for a variety of reasons. I will explore two types of methodological appropriation: acknowledged and unacknowledged.

Methodological Appropriation (Acknowledged). Unlike methodological eclecticism, acknowledged methodological appropriation attempts an integration of methodologies at the level of their worldviews. Acknowledged methodological appropriation is the deliberate integration of one methodology into the worldview of the other. For example, Looker and colleagues (1989) proposed a method for translating qualitative data for quantitative analysis, thus making qualitative research amenable to the worldview and skill set already in place for quantitative researchers. Likewise, Pernice (1996) and Plewis and Mason (2005) argued for the use of qualitative methods as a supplement to quantitative methods. These approaches intentionally retained the goals and assumptions of the post-positivist worldview and employed qualitative methods inasmuch as they might provide supplementary advantages that could not already be met by quantitative methods. Conversely, Mason (2006) championed a mixed methods approach that is consciously driven by an interpretivist worldview. She argued that the interpretive approach common to qualitative methods can accommodate the study of multiple dimensions of the social world, including quantitative dimensions.

The real strengths of acknowledged methodological appropriation are that it addresses mixing methods at the level of the worldview and it does so deliberately. Because this approach is deliberate, proponents are generally aware of the major criticisms of methodological appropriation. The primary criticism is that methodological appropriation sidesteps any true integration of worldviews by simply opting for one worldview or the other and accommodating both types of methods as that worldview allows (Morse, 2005). This is particularly worrisome as it amounts to the outright dismissal of a worldview without any real evaluation or justification

(Looker, et al., 1989; Mason, 2006; Pernice, 1996; Plewis & Mason, 2005).⁴ Furthermore, critics have observed that this approach at best allows only a limited application of the methods not traditionally associated with the adopted worldview because methods are designed to suit the purposes, values, and assumptions of their original worldview and thus carry these qualities of their worldview with them (Buchanan, 1992). Because the respective purposes, values, and assumptions of post-positivist and interpretivist worldviews are often contradictory (e.g., nomothetic generalization vs. ideographic particularity), many methods resist this sort of assimilation. Likewise, those methods that might assimilate into the new worldview are arguably no longer the same methods because the new worldview demands that they be made to fit a different set of purposes, values, and assumptions (Buchanan, 1992; Morse, 2005).

Methodological Appropriation (Unacknowledged). Although some researchers are deliberate with their methodological appropriation, methodological appropriation is much more commonly unintentional. In other words, a majority of researchers who propose mixed methods approaches unknowingly do so through the lens of a single unacknowledged worldview. This unacknowledged appropriation leads to the same problems of distortion and devaluation associated with acknowledged appropriation, but is further complicated by the fact that these consequences remain hidden from researchers who engage in unacknowledged appropriation. Thus, researchers can propose a mixed methods approach that appears to integrate qualitative and quantitative methods without ever really addressing the problems of integration at their most basic level.

⁴ Another possible variation on this theme would be incorporating the two worldviews into a third worldview, which is unlike either of the others—a syncretism of sorts. This would fail for the same reasons—it ultimately discards the worldviews rather than integrating them.

The most common example of unacknowledged methodological appropriation has been the incorporation of some qualitative methods into the currently dominant post-positivist worldview (Morse, 2005). Typically, this approach involves treating qualitative methods as laying the preliminary groundwork for an underdeveloped domain of study, to later be built upon and refined by quantitative methods (e.g., Barrett, 2003; de Vries, et al., 1992; Gürtler & Huber, 2006; Hayward, Peck, & Smith, 1993; Lund, 2005; Sechrest & Sidani, 1995). Qualitative methods, then, serve the role of theory development, hypothesis generation, and exploratory study (the context of discovery), whereas quantitative methods are reserved as more valid for confirmation of refined theories and for establishment of causal relationships (the context of justification). This approach is post-positivistic not only because it places a priority on the work done by post-positivistic quantitative methods, but also because this separation and sequencing conforms to the linear approach typical to post-positivism (see Bishop, 2007; Slife, 1993).

An example of this sort of unacknowledged methodological appropriation is the 2006 document from the APA Presidential Task Force on Evidence-Based Practice. One of the key aims of task force's policy on evidence-based practice was a move toward endorsing a the evidentiary value of a diversity of research methods, both qualitative and quantitative, in contrast to previous proposals which had more narrowly focused on randomized controlled trials and meta-analysis. However, as Wendt and Slife (2007) observed, the task force's proposal places qualitative methods on the bottom of a hierarchy of research methods, ranked according to their rigor and value within a post-positivistic worldview. Wendt and Slife further argued that by adopting a post-positivistic worldview, the task force unintentionally made a philosophical (worldview) decision without acknowledging it as such and without offering the philosophical justification necessary to support such a decision.

Although it is possible for unacknowledged methodological appropriation to occur in favor of the interpretivist worldview, this is much less common in practice. This imbalance reflects the dominance of post-positivism in the mainstream of the discipline, especially when many in the mainstream view post-positivism as axiomatic rather than as a point of view. This imbalance is also because interpretivist approaches are still closely tied to their philosophical roots and tend to be more self-conscious of their ontological and epistemological assumptions. Thus, most interpretivist methodological appropriations tend to be overt about their appropriation (e.g., Mason, 2006). Interestingly, when interpretivists are guilty of unacknowledged methodological appropriation, they tend to adopt a post-positivist rather than an interpretivist worldview as Yanchar and Williams (2006) observed in their analysis of Onwuegbuzie and DaRos-Voseles's (2001) study, discussed above. Again, the unconscious and permeating dominance of post-positivism in the discipline may explain this unlikely tendency.

Unacknowledged methodological appropriation has even influenced decisions regarding which studies are published. Barbour (2003) noted that as qualitative research has gained acceptance in the mainstream, journal editors have fallen prey to evaluating the significance and publication status of qualitative studies according to standards that are more reflective of traditional post-positivistic values and practices in deciding whether a study is worthy of publication. According to Barbour, many editors have tried to reduce qualitative methodologies such as grounded theory to a "checklist" in order to more easily evaluate the rigor of a study. Unfortunately, as Barbour explained, this reduction can lead editors to overlook many strengths and weaknesses of a study that would be more obvious with a broader contextual understanding of interpretivist worldviews.

The Problem

As this review of the mixed methods literature has shown, integrating qualitative and quantitative methodologies is more complex than many have supposed. Although many researchers have attempted to mix numerical and textual procedures, it appears that they have fallen short of integrating the worldviews that underlie and guide qualitative and quantitative methods. Mixed methods approaches continue to subscribe to either a post-positivist or interpretivist worldview. This adherence to only one worldview also limits the methods that can be accommodated from the opposing worldview, leading to narrowness rather than diversity in methods, despite the intentions of many mixed methods advocates. In fact, this narrowness suggests that there is a deception of sorts in mixed methods—these approaches are touted to employ the strengths of a diversity of worldviews when in reality they do not. What is more, the quest for methodological diversity is further frustrated because the purposes and rationales of research methods are tied to the worldview that grounds them and they are thus often distorted or misunderstood when methods are imported from one worldview to the other, potentially weakening rather than strengthening a study.

The APA Task Force (2006), for example, clearly recognized the need for diversity of methods in evidence-based practice, but nevertheless grounded their approach in a single post-positivist worldview. Not only did this cut off any diversity of methodologies, but it also severely limited the methods that could be accommodated within the post-positivist worldview, weakening rather than strengthening their approach as they claimed a diversity would do. In other words, their inability to relate methodologies at the level of their worldview made it impossible for the APA Task Force to achieve the methodological diversity that they claimed is so important, ultimately making their claim of diversity somewhat deceptive. Thus, the problem

for mixed methods approaches remains: is it possible to meaningfully relate qualitative and quantitative methodologies at the level of their worldviews, and thus accommodate a true diversity?

On its surface, this problem appears unsolvable. Post-positivist and interpretivist worldviews make basic ontological and epistemological assumptions—assumptions about the nature of reality and knowledge—that are at odds with one another. As the incompatibility thesis suggests, subscribing to one worldview appears to logically rule out the other worldview. This problematic impasse of worldviews is clearly not an empirical problem—“empirical” itself is part of a worldview that an interpretivist would not accept, inasmuch as it refers to post-positivist epistemology. Rather, this is a philosophical problem to be solved at that level. Indeed, when unsolvable problems have occurred historically, the foundational (ontological) assumptions have often been the culprit (Kuhn, 1962). In fact, the ontological is often considered the deepest level of philosophical assumption. It is possible that the very properties of mixed methods approaches that have proven so problematic are actually manifestations of a particular ontology.

Addressing the Problem

If the problem I have described is, in fact, rooted in the ontology of mixed methods approaches then an ontological analysis of mixed methods approaches appears to be in order. To be sure, several others have taken on the dilemma of mixed methods by proposing alternative approaches to mixing methods. For example, Slife and Gantt (1999) proposed a methodological pluralism based on community discourse involving multiple worldviews. Likewise, Yanchar, Gantt, and Clay (2005) and Yanchar and Williams (2006) argued for a critical approach to methods that requires researchers to be aware of their fundamental assumptions and to choose methods based on assumptions that best illuminate the object of study. These researchers

implicated ontological problems in mixed methods approaches, but their projects have been primarily to flesh out alternative approaches rather than to offer ontological analysis. Indeed, such an ontological analysis is conspicuously lacking from the mixed methods literature. Thus, in the following chapter I will offer an examination of the ontologies that could underlie mixed methods approaches in preparation for offering an ontological analysis of mixed methods proposals.

Chapter 3: Ontologies and Mixed Methods

Thus far, I have outlined the mixed methods approach to combining qualitative and quantitative methodologies and demonstrated in my review of the mixed methods literature that methods integration almost invariably defaults to the dominance of a single worldview. Because mixed methods researchers intend to not only mix methods, but also methodologies and their incumbent worldviews (e.g., Creswell & Plano Clark, 2011; Johnson & Onwuegbuzie, 2004), this next phase of my project takes on the obstacles preventing mixed methods researchers from preserving and drawing upon multiple methodological worldviews rather than one dominant worldview. In the previous chapter I argued that these obstacles are likely the result of a problematic ontology and I called for an ontological analysis of mixed methods approaches in order to examine whether the root of these problems is ontological. Thus, in anticipation of an ontological analysis, this chapter delves into what ontology is and lays out the basic philosophical tools that will be necessary for the ontological analysis.

The term “ontology” refers to a philosophy of being or existence—essentially it is a philosophy of what is most real or most fundamental. In fact, many philosophers consider ontology to be the foundation of all philosophy and knowledge (e.g., Aristotle, Kant, Heidegger, Gadamer, Taylor). Furthermore, because ontology is so basic and fundamental to our experience of the world, it is often taken for granted and left largely unexamined (Bishop, 2007; Heidegger, 1967; Slife & Williams, 1995). This is one reason why approaching mixed methods at the ontological level is so important—ontology not only addresses what is most fundamental and basic to mixed methods approaches, but it also seeks to articulate and explore what might otherwise operate unexamined.

Indeed, philosophers of science have observed that in most cases research methods have been formulated without explicit ontologies in mind, even though they have clearly made implicit and thus unexamined ontological assumptions (Bishop, 2007; Polkinghorne, 2004; Slife & Williams, 1995; Williams, 2005). For example, Slife and Williams (1995) observed that many of psychology's quantitative methods developed in the late 19th and early 20th centuries are based on an implicit and largely unexamined ontology that was borrowed from the physical sciences of the day. They explained that this ontology assumes that reality is the result of material and efficient causal processes and that these methods by extension make similar assumptions. According to these authors, one of the principal dangers of adopting an unexamined ontology is that it can shape theory and research in unintended and potentially distorting ways. They explain, for example, that such research methods have led many psychological researchers to approach their objects of study (humans) as if they are causally determined in the way that physical scientists typically approach the objects of their study, even though most people (and many researchers) believe that they have some form of agency.

In examining research methods, there are two basic types of ontology at play in the social sciences: abstractionist ontology and relational ontology (Slife, 2004a). Although these terms are not universally employed in discussions of ontology, they refer to basic problems that are at the heart of most discussions of ontology (Bernstein, 1983; Gergen, 2009; Slife & Richardson, 2008). Likewise, the relational and abstractionist ontologies are particularly appropriate here as they are the most cited in the social sciences and are fairly exhaustive in their scope (Bishop, 2007; Gergen, 2009; Slife & Richardson, 2008). Put perhaps overly simply, an abstractionist ontology is one that assumes that something is most real and fundamental when it is abstracted from context. A relational ontology, on the other hand, assumes that something is most real and

fundamental when it is understood in relation to the context of which it is part. In this chapter I propose to explore abstractionist and relational ontologies in order to provide a framework or method for my ontological analysis of mixed methods. Here I offer an in-depth discussion of each of these ontologies, outlining corresponding key features of each ontology. Throughout this exploration of abstractionist and relational ontologies I will highlight their differing implications for the problems facing mixed methods researchers.

An Ontological Toolbox

The purpose of this chapter is not only to give an overview of abstractionism and relationality, but to also provide the philosophical tools necessary to conduct an ontological analysis of mixed methods writings in the following chapter. Thus, the discussion that follows is oriented toward key features of abstractionism and relationality. These key features will help both to illustrate what is at stake for each ontology as well as to offer guideposts that can indicate where a particular ontology may be operating behind the scenes. That is to say, in my forthcoming analysis, I will look for these features in the mixed methods writings to provide evidence for which ontology is predominantly at play in mixed methods.

Abstractionist Ontology

According to abstractionism, things are most real and fundamental when they are contextless (Slife & Richardson, 2008). This notion is what has driven laboratory sciences in their attempt to sterilize their subject of its native context (Polkinghorne, 1983). They assume that they must remove the contextual “noise” from a phenomenon in order to find its real nature. From this abstractionist viewpoint, the object of interest is the same in any context, so removing the context leaves behind only the object of interest without anything to distort or obscure our view of it. Thus, if a researcher is interested in a particular behavior, the laboratory model would

suggest that the researcher should seek to simulate that behavior in the lab where she can control and supposedly minimize the impact of context.

There are several basic features of abstractionism that help clarify both why and how abstractionists value abstractions over context. The first three features that I will discuss, atomism, essentialism, and universalism, are each facets of this same impulse toward abstraction and it will become clear that each of these features implies the others. The fourth feature, sameness, is an outgrowth of the other three and is of particular importance for my upcoming analysis of mixed methods because it highlights how abstractionism approaches the sorts of relationships that mixed methods researchers are trying to bring about between post-positivist quantitative methods and interpretivist qualitative methods.

Essentialism. Abstractionism is aligned with philosophies that are concerned with the “essential” qualities of things (Bohan, 1993). For example, Plato’s theory of forms states that the purest and truest reality is made up of forms—the perfect and ideal instances of any given quality or characteristic of reality (Robinson, 1995). For Plato, our mortal experiences of the world are merely imperfect impressions of these ideal forms. Thus, Plato was concerned with coming to a knowledge of these forms in as pure a state as possible and sought to abstract the essential characteristics of such things as justice from his and others’ everyday experiences of justice.

Accordingly, abstractionism assumes that reality is made up of essences, along the lines of Plato’s forms, that can become obscured by the incidentals of context. Thus, to know this reality, abstractionists seek to “abstract” these essential qualities from the contextual noise of the incidentals (Bishop, 2007). Indeed, this language of “essential” and “incidental” highlights how abstractionists see context as merely ancillary and largely unnecessary to the essential or necessary qualities (Bohan, 1993). For example, a clinical psychologist might have a client take

a personality measure in order to identify his essential personality characteristics. Indeed, personality is commonly defined in abstractionist terms as those qualities that a person exhibits regardless of context (e.g., American Psychiatric Association, 2000). Thus, the personality measure is used as a tool to abstract what the clinician believes is essential in understanding her client from the contextualized totality of the client's thoughts and behavior.

This move toward abstracting the essentials from the incidentals leads many abstractionists to value theories, principles, and laws as key sources of truth (Polkinghorne, 2004). This is because theories, principles, and laws seek to present what is essential about a given topic that can then be applied in any given situation. The law of gravity, for example, expresses a higher truth for the abstractionist than does any given instance of a falling body because the law expresses the essential truth of what lies behind the process of *all* falling bodies. Likewise, an abstractionist would seek to formulate theories that distill the essence of what the theory describes and leave behind the particulars of how that theory might be applied in context.

In terms of research methodologies, abstractionists seek to formulate methods that will capture the essence of research problems, enabling the methods to find application to all kinds of research problems regardless of their contextual particularities (Polkinghorne, 1983). Thus, abstractionist methods typically make no prescriptions in terms of the experimental content to which they should apply—the procedures strive to be sufficiently abstract to contain only the essential properties for their purpose and to avoid limiting themselves to any particular context. This is why abstractionists often talk about “the” scientific method as if it is a singular method (Slife & Williams, 1995). Furthermore, within abstractionist methods the point is typically to “tease out” only the essential qualities of the phenomenon of interest from its context. This is why many abstractionist methods are focused on “isolating” variables and “controlling” or

“manipulating” the experimental situation to minimize the influence of context. They assume that context only introduces “error” that can obscure the essence of what they are trying to investigate.

Essentialism has a number of implications for mixed methods. For instance, rather than understanding methods within the context of a worldview, abstractionists would see methods in terms of essential characteristics such as a logic, a set of procedures, and a type of data.⁵ Thus, the abstractionist approach to mixed methods would suggest that a method could be applied in any worldview context so long as it shows those essential characteristics. For example, a post-positivist might claim that he is using the same methods that interpretivists use by including interviews that are subjected to textual analysis in a mixed methods study, despite the fact that within his post-positivist framework textual data and analysis are used to derive generalizations to apply in a predictive model. From an abstractionist viewpoint, the fact that the values and purposes driving the quantitative investigation as well as the researcher’s overall interpretation of the data are at odds with interpretivism is irrelevant because the researcher has maintained the essential procedures and textual data that make up “qualitative” research.

Atomism. The essentialist leanings of abstractionism are closely tied to abstractionism’s tendency toward atomism—the assumption that the essential qualities of a thing are self-contained within that individual thing (Gantt, 2005; Martin & Sugarman, 1999). Indeed, one might say that atomism provides the container and essentialism provides the contents. Because abstractionists assume that what is most real about something (its essence) is independent of

⁵ These essential characteristics would suggest that the method has “internalized” attributes of a founding worldview, obviating any further contextual grounding in the worldview for its identity as it is applied.

context, that reality is likewise assumed to be a property of the thing itself rather than a property of the thing-in-context (Slife, 2004a).

One implication of atomism is that abstractionists tend to view the world primarily in terms of its parts and only secondarily in terms of the relationships of those parts (Gergen, 2009). This is one reason that many abstractionists tend to think in terms of “variables”—they assume that the truth that they are after in their experimentation is contained within these key pieces that need to be isolated to be understood (Slife, 2004b). Thus, from this view, a researcher who is interested in studying successful marriages would try to isolate the variables that she expects make up successful marriage like spouses’ ratings of marital satisfaction (Ostenson, 2009). The marriage is interpreted in terms of parts like self-contained spouses and their self-contained “satisfaction” rather than in terms of what is between spouses. Interactions of variables or other relationships among self-contained atoms, then, are explained in terms of their parts. When the abstractionist marriage researcher wants to describe the relationship between a husband and wife, she does so in terms of spouses’ internalized perceptions of one another (e.g., attitudes, beliefs, feelings). The researcher presumes that the spouses are self-contained individuals first, and that their interaction or relationship (their marriage) is secondary to their identity.

Furthermore, because atomism suggests that parts carry their identity from context to context without any real alteration to that identity, abstractionists assume that parts are generally interchangeable and transferrable from one context to the next (Slife, 2004b). To return to the example of personality, a person’s behavior may differ to some degree from context to context, but their self-contained personality that drives that behavior is constant because it is independent of context. In like manner, abstractionists see methods, methodologies, and worldviews as distinct, separable, and portable (Yanchar & Williams, 2006). Because they are assumed to be

self-contained, abstractionism dictates that we should be able to use methods within a variety of methodological or worldview contexts without essentially changing that method's identity so long as they retain their self-contained essential characteristics.

Universalism. Rather than changing from context to context, what is essentially true about something for abstractionists is unchanging and applicable to all situations—it is universal (Slife, 2004b). Thus, universalism builds closely upon atomism and essentialism. Because parts are assumed to be self-contained and to bear essential characteristics that are independent of context, they can freely apply to any context without any essential change or adaptation to the context. For example, many abstractionists point to theories and principles as universal and independent of context. Thus, an abstractionist Freudian therapist would assume that the “pleasure principle” universally drives his clients’ (and his own) motivations, regardless of the situation (Rychlak, 1981). The principle need not be adapted to the motives of African tribesmen or to late afternoon motivations; it is meant to be universal and thus free of any particular cultural or temporal context. This is one reason why abstractionists prefer theories to be as general as possible—generality presumably contributes to a theory’s universality because it distances the theory from any particular context (Slife, 2004a). Indeed, this universalist approach to theory builds upon a prominent understanding of truth, namely that the Truth (with a capital “T”) about the world is general, universal, and independent of context.

Likewise, for abstractionists a research method should have universal application within the scope of problems it purports to address (Gadamer, 2004). Thus, an RCT does not specify whether it is intended to test the effectiveness of a medication or the impact of an educational intervention. The contextual particulars of any given RCT are incidental. The RCT design is intended to be a universal logic, applicable to any research situation that calls for testing the

impact of one or more interventions. Indeed, this sense of universalism seems to inhere in what most people think of as methods—procedures that when applied in a variety of situations bring about an intended outcome. For methods to be useful, we generally expect them to be repeatable in new situations rather than rooted in a specific context.

Of course there are exceptions to this universalist understanding of methods. Some qualitative methods, for example, are described as emergent (Hesse-Biber & Leavy, 2010). Rather than dictating a set of procedures *a priori*, these approaches suggest that the methods be formulated throughout the research process, adapting to the contextual demands of the research situation. Although researchers using emergent designs likely draw on their knowledge of how previous studies have approached problems, they nevertheless seek to adapt whatever procedure they use to the context of their particular project and to adjust procedures as the context demands. The point is that although we tend to default to a universalist understanding of research methods, this is not the only way to approach methods.

Because abstractionists assume that what is most true about the world is universal, they also presume a bounded reality—one that has the potential to be known comprehensively (W. Berry, 2001). That is, for theories to be true (the most real) they must be universal, and to be universal they must be comprehensive. Whether or not we actually comprehend all of reality, according to abstractionism each and every bit of reality *could* eventually be known by abstracting the essential and washing out the noise of context. Consequentially, abstractionists prefer theories that attempt to be comprehensive rather than limited in scope and application (Slife, 2004b). Accordingly, abstractionist approaches to mixed methods would favor a single, comprehensive, overarching worldview to orient research rather than multiple limited worldviews.

Sameness. Building upon the previous three, the fourth feature of abstractionism refers to abstractionists' emphasis on sameness. This feature indicates that for abstractionists sameness is the fundamental basis for relationships and difference is generally seen as a barrier to relationship (Ostenson, 2009; Slife & Wiggins, 2009). Sameness is so important here because abstractions themselves (e.g, concepts, theories) are formed in terms of commonalities and similarities manifested across contexts. In other words, to abstract is not merely to divorce from context, but also to focus on similarities (Slife, 2004a). Thus a person's depression is seen from this perspective as a set of depressive episodes, as if "other" episodes matter less (Slife, 1993). The depression is an abstraction from a person's broader contextual experiences in terms of these depressive similarities. In this sense, the assumption of sameness is closely tied to universalism because it suggests that different contexts are essentially the same in the ways that matter and can be universally accounted for in terms of these similarities.

Similarly, atomism also contributes to the abstractionist assumption that relationships must be based on sameness. By assuming that identities are self-contained—that they make no essential reference outside of themselves—abstractionists explain interactions of identities in terms of their own self-contained properties (Yanchar, 2005). That is to say, they explain an identity by reference to itself and not in terms of something that is "other" or different from itself. Recall our earlier discussion of how atomism requires that interacting parts internalize any outside influence, with the outside influence being explained in terms of the properties of the part. This example suggests that under atomism all relationships are self-relationships (sameness) because they are always reduced to properties of the self. Thus, if a worldview is self-contained it can only internalize parts of other worldviews that are similar or that can be made similar, but it cannot truly engage or preserve the otherness of an alternative. This is why

some mixed methods researchers assume that they must translate one form of data into the other form of data for analysis (e.g., Onwuegbuzie & DaRos-Voseles, 2001)—they assume that they cannot otherwise integrate the two unless they are sufficiently similar.

Likewise, essentialism demands sameness because it suggests that the self-contained properties of a part are all that is essential to its identity and that anything “other” is incidental and unnecessary (Bohan, 1993). Ultimately, essentialism amounts to a *de facto* rejection of otherness because it presumes that anything that is other than what it deems essential is unessential. Hence, this leads abstractionists to only attend to those things that are similar to the essential qualities of a variable, a method, or a worldview and to ignore or reject those that are not.

Accordingly, an abstractionist approach to mixed methods would operate much like what we observed in Chapter 2—it would be driven by a single worldview that would either assimilate methods from other worldviews into its own approach (altering them where necessary) or reject and/or ignore any alternative methods that could not be assimilated. A mixed methods researcher grounded in post-positivism, for instance, may seek to integrate qualitative methods by focusing on features that are potentially similar to traditional post-positivist methods. This researcher might home in on the way many qualitative methods guide researchers to extract themes from their textual data, seeing this as a reductive process similar to the way that many quantitative methods reduce rich and complex situations to key variables or factors. In making such an application of qualitative methods, however, the researcher would have to discard many of the interpretivist practices that seek to recontextualize themes and to caution researchers against ultimately interpreting themes reductively and abstractly. Thus, abstractionism guides the researcher to attend to similarities in integrating diverse methods and to discard major

differences. In this sense, the abstractionist approach to integrating diverse methods greatly reduces the diversity of the methods.

In addition, there is a sense that the method wars were based on this assumption that relationships must be based on sameness. This is because the method wars were all about how the differences between interpretivism and post-positivism are insuperable barriers to any sort of integration of the two worldviews (Howe, 1988; Johnson & Onwuegbuzie, 2004; Morgan, 2007). That is, the scholars arguing for interpretivism or post-positivism recognized that these worldviews are profoundly different from one another and they assumed that any attempt to relate the two would result in washing out these important differences in order to make them compatible, particularly considering that one worldview or the other was expected to be universal (Denzin & Lincoln, 1994). Thus, these differences between the worldviews appeared as threats to one another's identity because they suggested an either/or orientation where adopting one worldview would simultaneously reject the other.

Relational Ontology

In contrast to abstractionism, a relational ontology assumes that things are most real and fundamental when they are in context (Slife & Richardson, 2008). That is to say, things are defined (at least in part) by their contextual relationships. For example, relationists would argue that a woman's motherhood only makes sense in relationship to a broader context of her children, as well as her personal and cultural notions of what it means to be a mother. In other words her motherhood is tied up in her relationship to her broader context.

These features of a relational ontology that I discuss below correspond to the abstractionist features already discussed and thus hang together in a similar fashion (see Table 1). That is, the first three features—contextualism, holism, and changeability—each offer a

Table 1

Contrasting Features of Abstractionist and Relational Ontologies

Features of Abstractionism	Features of Relationality
Essentialism—reality is made up of “essences,” the basic essential qualities of a thing; all else, including context is incidental.	Contextuality—reality is contextually situated; what is essential to a thing is rooted in its contextual relationships.
Atomism—reality is made up of self-contained parts. This means that parts contain within them all that is necessary to their identity (e.g., essences), requiring no reference outside of themselves.	Holism—every “part” of reality is inextricably related to a greater whole, with part and whole each contributing to the identity of the other. Thus, identity always goes beyond the thing identified.
Universalism—what is essentially true about the world is unchanging and applicable to all situations; it is universal. Thus, theories and methods should be independent of any given context.	Changeability—what is true about the world is fundamentally contextual and thus has the potential to change as contexts change. Thus, theories and methods should adapt and be secondary to any particular context.
Sameness—relationships are based on similarities and differences are seen as barriers to relationship. Sameness is so important because abstractions themselves are formed in terms of commonalities manifested across contexts.	Difference—relationships require difference as well as similarities. This is because a relationship requires something that is truly “other” or different from the self with which to relate.

different view of the same relational impulse for understanding the world as contextually situated and the three go very closely hand-in-hand. The fourth feature, difference, likewise reveals how the other features of relationality impact the way that relationists approach relationships, particularly relationships between quite different things, such as post-positivism and interpretivism.

Contextualism. Whereas abstractionism assumes that context obscures the essence of a phenomenon, relationality assumes that context itself is essential (part of the essence) in knowing what is real and fundamental (Freeman, 2010; Slife, 2004a, 2004b). For example, a wooden spoon might be a stirring implement in one context and a tool of corporal punishment in another. To understand what sort of tool we are dealing with, the relationist would argue we need to examine whether the context more closely resembles a bowl of cake batter or a disobedient child's backside. This is because according to relationality the reality of the spoon is tied up in its context—it *is* the stirrer in the bowl and it *is* the spanking paddle in the angry parent's hand.

Thus, one of the major implications of relationality is that the more removed we are from the context we are attempting to study, the less we grasp what is real, fundamental, or essential (Yanchar, 2005). In fact, relationists would question whether we even really can be removed from context, arguing that abstraction merely obscures context rather than escapes it (Bishop, 2007; Slife, 2004a). This is not to say that relationists do not rely on abstractions from time to time. Indeed, relationists see abstractions such as theory and language as indispensable (Slife & Richardson, 2008). However, from the relational perspective abstractions should not be mistaken for reality. Rather, they should point back to the rich contextual world and are most useful when they are regularly recontextualized.

Accordingly, theoretical discussions such as this dissertation draw heavily on abstractions such as language and theory. Indeed, one may raise the question of whether I can adequately represent a relational ontology in these fairly abstract terms of philosophical language and “features.” These abstractions are not problematic in and of themselves from a relational perspective, but they become so if they are treated as if the language and theories in question *are* the truth (i.e., if they are reified), rather than as rough approximations that are subordinate to the rich contextual situations which they describe. Thus, relationists strive to use abstractions tentatively and to persistently recontextualize them. For example, the hermeneutic circle is a method of interpretation that states that the whole of a text is best understood in relation to its individual parts and the parts of a text are best understood in relation to the whole (Bernstein, 1983; Palmer, 1969; Ricœur, 1981). In moving through this interpretive circle, a reader engages in temporary abstraction by reflecting on a part of the text or on the whole of the text, but then seeks to return from this abstract view to recontextualize insights that emerged in the provisional abstraction. This method has been extended beyond textual analysis to include all interpretation, including our interpretation of the world. Thus, this hermeneutic method would suggest that we must be in a continual process of abstracting and recontextualizing, following the circular flow from whole to part and part to whole.⁶

Contextualism likewise leads relationists to understand identity as deeply contextual (Freeman, 2010; Macmurray, 1998; Slife, 2004a; Slife & Richardson, 2008). Consider again the example of the clinical psychologist interested in a client’s personality. From a relational

⁶ This description of the hermeneutic circle is itself an abstraction from the practices of hermeneutically oriented researchers. The point from a relational perspective is that this abstraction is helpful in describing what hermeneutically oriented researchers do; nevertheless it is a thin approximation of those practices. The method would become *abstractionist* if we were to treat it as if it is the same thing as what such researchers do and disregard the variety of contextual adaptations in each instance of the “method.”

perspective the clinician would be interested in getting to know what the client is like in a variety of contexts, attending not only to what is the same across contexts, but also to what is different. This is because for the relationist the client's personality itself changes in certain ways as the context changes. Thus, the clinician is open to understanding the client as introverted in some contexts and extroverted in others, rather than expecting the client's behavior to be different manifestations of unchanging underlying traits. Indeed, this relational perspective on personality could account for the low correlations that are often observed in trait studies (e.g., Taylor, Kluemper, & Mossholder, 2010).

In like manner, for the relationist there is a sense that a research method must be rewritten to some degree with each application to a new context (Yanchar, et al., 2005). This is because the method was formulated within a particular context and was thus shaped and defined by that context (Danziger, 1985, 1990). As the method is carried into a new context, the method must change to adapt to the context. Indeed, there may be many similarities from one context to the next (they share a context of contexts), but the relationist attends equally to the differences, as these new particularities can redefine the method in important ways. Indeed, it is common practice in many qualitative studies to cite research designs that inspired a particular study, but to then elaborate on the many important adaptations that were made to the design to better suit the context of the study at hand (Denzin & Lincoln, 1994). Although it is more common in quantitative research to treat research designs as prefabricated frameworks for research (Kazdin, 2003), relationally oriented quantitative researchers would likewise see the adjustments that researchers make in their quantitative methods as a similar form of "rewriting" the method.

Perhaps to an even greater extent, then, relationists would expect that applying research methods to a completely different worldview context would likely result in some important

changes to the identity of the method (Yanchar & Williams, 2006). For example, qualitative methods that are intended to be used hermeneutically, with general themes identified which are then related back to the broader context of interviewee's responses, could be adapted to only focus on their ability to generalize themes. From a post-positivist perspective, these sorts of generalizations could prove helpful in devising hypotheses or generating questionnaire items for further quantitative research. However, the method (originally interpretivist) in its new application has been fundamentally changed, even though the procedures for collecting and analyzing the data are basically the same. The change comes because the purposes of the method as well as the mode of interpreting the results of the analysis are quite different from those that applied in the interpretivist context. In this sense, a relational ontology is more of an anti-system rather than a system because it does not presuppose to have a ready-made method or theory for any given situation—the situation or context dictates and shapes the method.

Holism. Because relationality asserts that the essence of a thing lies in its relation to broader contexts, a relational ontology implies a type of holism where a part's qualities and identity are tied up in its relationships with a greater whole (Gantt, 2005; Slife, 2004b). This holism contrasts sharply with the abstractionist assumption of atomism which assumes that a part's identity is self-contained, requiring no reference "outside" of itself. Instead holism implies a relational identity—an identity that is mutually constituted by a part's relationship with its broader contextual whole (Freeman, 2010; Gergen, 2009).

For example, many typical personality qualities like introversion become nonsensical without some reference to relational context. Not only does introversion imply and require other people from whom a person could turn inward, but the meaning of introversion is also subject to situational and cultural contexts. So called "introverted behavior" takes on very different

meanings when it is exhibited in different contexts such as a football game, a religious service, or a dinner out with friends. Likewise, cultural expectations for such behavior vary and a person who is seen as problematically introverted in the United States (where extroversion is often valued) might be considered appropriately polite or respectful in a culture where people are expected to be more reserved and demure (Freeman, 2010).

Holistic relational identity not only applies to people, but to all that exists (Slife, 2004a). For example, a glass of water can be many things in different contexts. If I'm feeling parched, the glass of water is a source of thirst quenching relief. However, if a small fire breaks out nearby it becomes a fire extinguisher. For the relationist these identities of thirst quencher or fire extinguisher are an integral part of the glass of water's existence within those greater contextual wholes. Thus, identity here is also "between" parts rather than merely within them (Gergen, 2009). In this sense, identity always exceeds the thing identified because it points out to the broader context (Freeman, 2010). This is one reason why relationists argue that research methods are always shaped by their worldview and methodological contexts—the methods necessarily conform to the assumptions and values of the broader worldview context (Danziger, 1990; Yanchar & Williams, 2006).

Another implication of holism for relationality is that we (along with everything else that exists) are related first and individual second (Slife & Wiggins, 2009). That is to say, it is our nature to be in relationship (to context, to others, etc.) and our individuality can never be truly separated from these relationships. Indeed, individuality, as such, is an abstraction inasmuch as it obscures our fundamental relatedness (Cushman, 1996; Richardson, Fowers, & Guignon, 1999; Slife & Wiggins, 2009). In other words, there is no true "partness" except in relationship to a greater whole. Thus, the worry for relationists is that when we use abstractions such as

variables or constructs to emphasize a part from the whole, we might lose sight of the fact that the part is nevertheless rooted to the whole. In this vein, a relational approach to mixed methods would emphasize the importance of attending to the impact on methods as they are brought in relation to an alternative paradigm (Yanchar & Williams, 2006).

Changeability. In contrast to abstractionism's assumption that abstracted truths are universal and unchanging across contexts, relationality assumes that all truth is context-dependent and changeable in relation to contexts (Slife, 2004b). Put another way, abstractionism assumes that something is true in spite of its context, whereas relationality assumes that something is true because of its context. As mentioned previously, this contextualism means that when a research method is applied to a new context, it can change in important ways and accordingly becomes a "new" method in the new context. Thus, a method may provide a pattern based on previous contexts that can be helpful in its application to a new context, but it must accommodate and adapt to the differences of the new context (Yanchar, et al., 2005). In this sense, methods always have a limited application and are secondary to the particular demands of the context of the given problem.

Whereas abstractionist universalism assumes a bounded reality, relationality assumes a reality that always exceeds and overflows our comprehension (Heidegger, 1967; Lévinas & Nemo, 1985; Slife, 2004b). That is to say, reality will never be fully knowable in the comprehensive sense for relationists. Relationists often use an analogy of the horizon to explain our limited view of the world (e.g., Gadamer, 2004). From any given vantage point we are able to view a vast landscape, but our view is limited by the horizon where the landscape continues beyond our sight. As we move toward the horizon, some of the previously obscured landscape comes into view, as other elements previously visible recede behind the horizon to our back.

Likewise, our experience of the world itself is always limited in scope. Our experience gives us a view of the world which always implies something beyond, but which invariably gives up some of its present view in moving toward that beyond.

This limited view of the world cautions relationists against treating contexts themselves as potentially self-contained. There is always a greater context or a “context of contexts.” Thus the term “whole” in holism refers not to a comprehensively self-contained whole, but rather to the unlimited connectedness of contextual relationships. In this sense, any understanding of the whole for relationists is necessarily incomplete and nonfinal. In the words of William James, although the world is not a “through-and-through unity of all things at once [as a self-contained reality would imply] . . . each part hangs together with its very neighbors in inextricable interfusion” (1987, p. 778). This connection of contexts is a strong indicator that relationality is not a relativism in which each person creates his or her own truth (see Slife & Richardson, 2008). Rather, truth here is relative to the context which is beyond any individual person and which “hangs together” with contexts beyond.

Because relationists recognize our view of the world to be necessarily limited, they tend to favor theories (including worldviews) that are likewise limited in scope and that seek to acknowledge their incompleteness (Slife, 2004b). This contrasts with abstractionism’s tendency toward comprehensive systematic theories. The role of theories (as with all abstractions) for the relationist, then, is to provide a provisional vantage point for glimpsing the world, but not to represent and subsume all of reality (as a set of principles or universals). Thus, a relational approach to mixed methods would favor multiple worldviews inasmuch as they help illuminate and make sense of the world. However, relationists would go further by insisting that these worldviews should be held somewhat provisionally, recognizing that any worldview is limited in

what it can reveal (Yanchar, et al., 2005). Furthermore, by treating worldviews as provisional, the relational approach leaves more of an open ground for engagement and relationship of worldviews because worldviews are no longer expected to account for all of reality. Relationists can then be genuinely open to the possibility that an alternative worldview can speak to and inform their current worldview.

Difference. In fact, this assumption that theories and worldviews are limited and provisional is a major reason why relationists believe that difference is just as vital to relationship as sameness. They recognize the value in looking to something beyond or other than one limited worldview in order to make better sense of the world (Gergen, 2009; Ostenson, 2009; Slife & Wiggins, 2009). Indeed, the relational notion of identity *requires* that there be something beyond (Freeman, 2010). By acknowledging limitations and by not expecting comprehensiveness, relationists leave open the possibility of incompleteness, difference, and even contradiction (Bernstein, 1983; James, 1987). These differences and contradictions can be illuminating and valuable, so it is important to relationists that they see these differences *as* differences and not turn them into similarities in their encounters with alternatives. For example, psychotherapists might be tempted to view their depressed patients primarily in terms of their similarities (e.g., through an abstract theory of depression) and thus approach them similarly (Slife & Wiggins, 2009). However, a relational psychotherapist would resist this temptation by seeking to recognize those inevitable moments when his client breaks from his theory of depression, manifesting important differences from any previous client. These moments of difference present new possibilities to the relational psychotherapist for understanding and intervening with his client. Likewise, the relational psychotherapist would see attending to these differences as a safeguard against imposing a theory upon a client without regard for its fit.

One reason that difference is so important to relationists is because, according to holism, differences are key to the relational identities of the things or persons in relationship with one another (Freeman, 2010; Slife, 2004a). That is, holism asserts that the identity of a thing is partly found in its relationships to its broader contexts, its relationships to things other than itself. For example, a mother is not the same person as her daughter, but her identity as a mother is tied up in someone other than herself, namely her daughter. The otherness of her daughter and her relationship with her daughter as an *other*, are integral to her identity as a mother. In this sense difference is not only possible and helpful for relationists, but it is also essential in making sense of the world. According to William James (1987), without difference or otherness all that exists ultimately reduces to one great singularity and any difference or plurality that we experience is ultimately epiphenomenal. In step with relationists, James argues that the plurality that we experience in the world is real and that relationships need not destroy the otherness of the other.

One type of relationship that relies on differences is a dialectical relationship (Rychlak, 1981). A dialectical relationship is one in which something is defined in contrast with something that it is not. For example, we might define post-positivism's emphasis on minimizing values in research (thus seeking objectivity) in contrast with interpretivism's claim that values are inescapable and should be embraced in the research process. Not only can the contrast make clearer what the one thing is by pointing out what it is not, but it also reveals possibilities of what it *could* be. Thus, dialectical thinking is important for relationists because it helps them to see beyond any one theory or worldview and critically evaluate it against other possibilities.

Indeed, this sort of dialectical relationship hints at one way that relationists might approach the problems facing mixed methods. That is, they might advocate that the worldview debate continue, but with the recognition that these worldviews are incomplete, thus allowing

adherents to different worldviews to approach one another with humility and learn from their differences. Indeed, they might argue that the tensions among these worldviews are, to some degree, necessary to their identities. Likewise, they might employ this sort of dialectical relationship in mixed methods experiments by seeking to preserve the differences in qualitative and quantitative methods and then engaging the findings of the two strands in terms of both similarities and differences. Thus, an appropriate integration for a relationist might as likely be an exploration of contradictions and disagreements between two strands of research in a study as it is a conciliation of the two.

Conclusion

This discussion of abstractionist and relational ontologies has demonstrated that each provides strikingly different ways of understanding reality: the former arguing that truth emerges as we abstract things from the context in which they occur, the latter arguing that we can only really understand the truth about something when it is in context. Likewise, I have suggested that there are important differences in the ways that each ontology would approach the mixed methods project, particularly in the manner that they would relate worldviews and would treat methods in the context of an alternative worldview. For abstractionism, worldviews should be universal and comprehensive and so abstractionists would tend to favor ultimately using a single worldview. Consequentially, abstractionists would only relate worldviews based on sameness because this would allow them to incorporate any alternative worldview into the single overarching worldview. Likewise, abstractionists would assume that methods are self-contained and that they retain their essential characteristics in whatever worldview context they find application. For relationality, worldviews are necessarily provisional and incomplete and thus relationists would favor a plurality of worldviews. In order to preserve this plurality, relationists

would assume that the relationships among worldviews must be based on difference as well as sameness. Regarding methods, relationists would assume that they are defined by their relationship to the context of a study's orienting worldview and that the character of a method changes if it is applied under alternative worldviews (if it can be accommodated at all).

In the previous chapter I suggested that the problems mixed methods researchers have faced in integrating interpretivism and post-positivism is likely the result of a problematic ontology and that an ontological analysis was in order. With an understanding of relational and abstractionist ontologies now in place, we are ready to undertake this ontological analysis of the mixed methods literature. The purpose of the ontological analysis will be to see whether mixed methods writings suggest that there is an abstractionist or relational ontology at play, or some combination of the two. Thus, the following chapter will undertake this ontological analysis.

Chapter 4: An Ontological Analysis of Mixed Methods

In previous chapters I have described the mixed methods project and outlined how current approaches to mixed methods appear to fall short of a true integration of qualitative and quantitative methodologies. I have suggested that this problem may be due to a problematic ontology and that an ontological analysis is thus in order. In preparation for this ontological analysis I have described two basic ontologies—abstractionism and relationality—and outlined several contrasting features of these ontologies.

In this chapter I will provide my ontological analysis of the mixed methods literature. The purpose of this ontological analysis is to reveal the ontology or ontologies guiding the mixed methods project through a close analytical reading of the mixed methods literature. Using the basic features of relational and abstractionist ontologies as I have described them in Chapter 3, I will critically evaluate whether the mixed methods literature appears to be founded upon relationality or abstractionism or some combination of the two.

Methodology: Ontological Analysis

The purpose of an ontological analysis is to reveal and describe the ontology underlying a particular theory and its associated literature, in this case the mixed methods approaches to integrating qualitative and quantitative methodologies. In order to undertake such an analysis we need to have an understanding of the possible ontologies that could underlie the theory (hence, Chapter 3). As is the case in this analysis, it is typical for an ontological analysis to employ at least two opposing ontologies for comparison so that the features of one ontology can stand out in contrast to the other. As mentioned in chapter 3, the relational and abstractionist ontologies are particularly appropriate here as they are the most cited in the social sciences and are fairly exhaustive in their scope (Bishop, 2007).

Dialectic approach. The method employed in this analysis is a dialectic approach, meaning that it emphasizes contrasting relations. As alluded to in the previous chapter, the dialectical method involves understanding something by placing it in contrast with what it is not. The basic idea here is that the ontological assumptions in the mixed methods literature will become clearer as they are placed in contrast with alternative assumptions. This is particularly important because, as several scholars have observed (e.g., Richardson, et al., 1999; Rychlak, 1981; Slife & Williams, 1995), ontological assumptions are often taken for granted and thus remain “hidden” to those who assume them. Thus, contrasting these assumptions with alternative assumptions will help bring them into greater relief, making more apparent their operation in the mixed methods literature.

Indeed, this dialectical method is not new—it dates back at least to the ancient Greeks. Socrates, for example, would not state his philosophy monologically, but instead was fond of engaging in dialectical dialogues. Through this dialectical approach he would critically engage his interlocutor, questioning and examining his understanding of a topic against that of his dialogical partner. Socrates’ student Plato likewise used this dialectical format in his writing, using multiple voices representing contrasting perspectives to arrive at the truth of a question. These multiple perspectives allow readers to critically evaluate both sides of an issue and to judge conclusions not just on their own merit, but also in how they contrast with one another.

Hegel was a modern philosopher who is similarly well known for employing a dialectical method for making sense of history. According to Hegel, the progress of history begins with a thesis which is countered by an antithesis. The confrontation of these ideas leads to a higher understanding which is then itself countered again, ad infinitum. Marx, likewise, employed Hegel’s dialectical method to demonstrate how present day economic realities contrasted with

and arose out of their previous historical iterations. The point for both Marx and Hegel was that we can best know something by contrasting it with what it is not.

In modern psychology the dialectic method has similarly found fruitful application. Rychlak (1981), for example, employed the dialectical method to illustrate the underlying assumptions of classic personality theories in psychology, using contrasting assumptions to highlight the assumptions of a particular theorist. A particular strength of Rychlak's approach is that it helps readers to not only recognize the philosophical assumptions of personality theorists, but to also compare these theorists to one another and critically evaluate their theories through contrast.

Similarly, Slife (2011) developed a textbook in psychology called *Taking Sides* which presents contrasting viewpoints on controversial issues in psychology. The text is set up to engage students in debates which compare and contrast the opposing viewpoints and to come to conclusions based on this dialectical exchange. In fact, the text was so successful that it is now in its 17th edition and a whole series of *Taking Sides* books has been developed for a variety of fields. One of the major strengths of this series is that it invites students to approach their discipline as critical thinkers who can question the claims and assumptions of any one thinker in the field by engaging an alternative viewpoint for comparison.

Indeed, many modern educators now see this dialectical approach as central to critical thinking in general (e.g., Brookfield, 1987; Norris, 1985; Phelan & Garrison, 1994; Yanchar & Slife, 2004). Within psychology, this approach to critical thinking has found application in a recent book edited by Slife, Reber, and Richardson (2005). The book is arranged with chapter pairs that explore mainstream and alternative assumptions (often ontological assumptions) of various sub-fields of psychology. Through this method of contrasting relationships the chapters

not only attempt to point out the assumptions that undergird mainstream psychology, but also to highlight them in contrast possible alternatives. According to Slife, Reber and Richardson, the presentation of alternatives was particularly important because they help to bring to light assumptions that might otherwise be taken to be “just the way things are” rather than one option among many of approaching psychology.

The present analysis. There is a sense that this dissertation has already been employing the dialectical method in my presentation of abstractionism and relationality in Chapter 3. That is, by presenting the two ontologies side by side and in contrast with one another, it has been my intention to bring greater clarity to how each ontology operates as it stands out against its alternative. In similar fashion, this ontological analysis will build upon the dialectical contrasts of the previous chapter by applying an understanding of relationality and abstractionism to the mixed methods literature. One particular appeal about the dialectic method for this project is that it is not unique to either relational or abstractionist ontologies. That is to say, the dialectical method has found application within abstractionism (e.g., Plato, 1997) as well as relationality (e.g., Slife, 2004a). In that sense, drawing dialectical comparisons does not in and of itself presuppose one ontology or the other. This analysis involves extracting ontological themes through a close reading of the mixed methods literature and identifying those themes with the features of one or the other ontology. When I identify a theme with one particular ontology, where appropriate or needed, I also describe how the alternative ontology would approach the same issue, thus dialectically illustrating the fit with one ontology and the contrast with the other.

The “data” of this analysis is focused on literature involving mixed methods approaches to integrating qualitative and quantitative methodologies. I have identified three basic categories of writings that pertain to methodological integration for inclusion in the analysis:

1. Articles and chapters that address integration at the worldview or paradigm level. These articles argue against the qualitative/quantitative divide of the paradigm wars and argue in favor of some sort of mixing of qualitative and quantitative methodologies.
2. Articles and chapters that address integration at the methodological level. These articles describe the technical elements of conducting mixed methods studies such as research design.
3. Articles and chapters that address integration at the methods level. These articles describe empirical studies employing mixed methods designs.

I have organized this analysis according to these categories, labeled with shorthand: worldview, methodology, and methods. For each of the first two categories, worldview and methodology, I have identified a comprehensive exemplar article or chapter that represents common themes from and takes into account the relevant literature for that category. Likewise, for the methods category (which represents the broadest literature) I have identified five exemplar studies representing each of the five basic types of mixed methods research designs. Thus, for each category I will identify themes that emerged in my reading of the literature and then provide an in-depth analysis of those themes using the identified exemplar that illustrates the ontological foundations of that particular facet of mixed methods. Because the point of an ontological analysis is to provide a close and in-depth reading, this analysis necessarily focuses on a small number of articles rather than exploring a “thinner” reading of a great many articles. As I introduce my exemplar articles I will provide justification for how the articles are “exemplary” and comprehensive and I will provide references to the broader literature which they represent.

Analysis

Worldview. Within the mixed methods literature, articles that address worldview issues generally take on two primary tasks: 1) critiquing the incompatibility thesis arising from the paradigm wars and 2) arguing for a new worldview to ground mixed methods (e.g., Creswell & Plano Clark, 2011; Greene, Caracelli, & Graham, 1989; Howe, 1988, 1992; Johnson & Onwuegbuzie, 2004; Kelle, 2006; Lund, 2005; McKeganey, 1995; Morgan, 2007; Onwuegbuzie & Leech, 2005a, 2005b; Plewis & Mason, 2005; Scott & Briggs, 2009; Sechrest & Sidani, 1995; Shah & Corley, 2006; Steckler, et al., 1992; Teddlie & Tashakkori, 2003, 2009). My principle exemplar of these worldview articles, Burke Johnson and Anthony Onwuegbuzie's 2004 article "Mixed methods research: A research paradigm whose time has come," takes on both of these tasks. Johnson and Onwuegbuzie are two of the leading scholars of mixed methods research, particularly in addressing philosophical issues relating to mixed methods and they are well published in these areas. This article, in particular, is widely cited as definitively establishing mixed methods as overcoming the incompatibility thesis and providing a paradigm of its own (Bazeley, 2006; Dellinger & Leech, 2007; Denscombe, 2007, 2008; Greene, 2008; Leech & Onwuegbuzie, 2009; Mertens, 2009; Morgan, 2007; Raudenbush, 2005; Teddlie & Tashakkori, 2009; Teddlie & Yu, 2007). Furthermore, this article is fairly comprehensive and representative of what many other mixed methods researchers have argued on these issues (e.g., Creswell & Plano Clark, 2011; Howe, 1988, 1992; Morgan, 2007; Onwuegbuzie & Leech, 2005a, 2005b; Teddlie & Tashakkori, 2003, 2009).

Theme: Problems with the paradigm wars. Johnson and Onwuegbuzie's (2004) first major argument is that the incompatibility thesis arising from the paradigm wars is incorrect in asserting that qualitative and quantitative methods are incompatible. According to these authors,

the era of the paradigm wars was a period where methodologists overemphasized philosophical differences between interpretivism and post-positivism and created an unnecessary divide between qualitative and quantitative researchers. They suggest that this divide has led to a state of affairs where graduate students often believe that they must declare allegiance to one methodology or the other as they embark on their research careers. The authors go on to argue that qualitative and quantitative methods themselves are much more loosely tied to their founding paradigm or worldview than the paradigm wars would indicate. Likewise they contend that the differences between the worldviews of interpretivism and post-positivism are overblown and that they share many important similarities that are favorable for mixing methods,. The authors conclude that because these traditions are, in fact, so similar and because methods need not be rooted in a single paradigm, researchers can and should combine qualitative and quantitative methodologies.

As they argue against the incompatibility thesis of the paradigm wars, it initially appears that Johnson and Onwuegbuzie could be assuming a relational ontology. After all, they are arguing against the division that has treated qualitative and quantitative methods and worldviews as self-contained and incompatible because of differences. However, on closer inspection their approach to overcoming the paradigm wars shows many signs that they are, in fact, assuming an abstractionist ontology. First, the authors assume atomism in their treatment of research methods as if they are self-contained, independent from any fundamental connection to a broader context, including a worldview context. They assert, “Although many research procedures or methods typically have been linked to certain paradigms, this linkage between research paradigm and research methods is neither sacrosanct nor necessary” (p. 15). According to Johnson and Onwuegbuzie, methods retain their identity regardless of paradigmatic or worldview context and

the authors argue that this independence allows for mixing methods because it frees researchers from concerns over paradigm conflicts. In other words, the authors are asserting that we should understand methods as atomistically self-contained, requiring no reference outside of themselves (e.g., to worldview contexts) for their basic identity.⁷

Similarly, Johnson and Onwuegbuzie assume atomism in their characterization of how mixed methods bridges the interpretivist and post-positivist paradigms. They describe “a continuum with qualitative research anchored at one pole and quantitative research anchored at the other” and then assert that “mixed methods research covers the large set of points in the middle area” (p. 15). This continuous model of research methodologies suggests that the authors are trying to unite qualitative and quantitative (and between them mixed methods) in one self-contained system where differences are merely differences of degree. On the other hand, the authors do go on to offer an alternative metaphor for those who prefer to think categorically: “mixed methods research sits in a new third chair, with qualitative research sitting on the left side and quantitative research sitting on the right side” (p. 15) The point for Johnson and Onwuegbuzie is that mixed methods is a middle ground between the two purist positions. It is possible that with this categorical explanation the authors mean to allow for the three approaches to be distinct *and* related, as holism would advocate. However, they go on to extol the similarities across these traditions (more on this below) and to reject purist positions, suggesting that they are instead arguing for one overarching and self-contained system in which any worldview distinction between qualitative and quantitative research is wiped out.

⁷ The atomism seen here is perhaps even a stronger form of atomism than many abstractionists would assume. That is to say, Johnson and Onwuegbuzie are asserting that methods are independent of paradigms or worldviews. Other abstractionists, such as those in the paradigm wars, recognize methods as necessarily related to worldviews because they are informed by the logic of a worldview—the logical relationship suggesting that they are at least weakly related (as opposed to the strong relationship of a contextual identity) rather than fundamentally independent.

Closely tied to the authors' assumption of atomism is their corresponding assumption of essentialism. Because methods and procedures are assumed to be self-contained, they are likewise assumed to retain their basic "essence" as they are abstracted from their original worldview context. In other words, a method's identity presumably does not change in a new context because it preserves its essential characteristics. According to the authors, what is essential to research methods are the basic procedures involved in them and they argue that this essence is retained regardless of the paradigmatic or worldview context. Indeed, the authors provide no indication that methods would be any different when taken out of their original worldview context. Instead, they argue that methods do not depend on their worldview to be what they are and to be useful to researchers.

Furthermore, the authors assume universalism when they assert that methods can be applied to whatever worldview context researchers deem appropriate. Whereas the paradigm wars contended that worldviews limited what methods could be accommodated, Johnson and Onwuegbuzie argue that paradigmatic worldviews need not limit methods and that methods can be universal to any worldview. Because methods are assumed to be atomistically self-contained and therefore to carry their basic essence from context to context, there appears to be no limitation in their application to any given context. Furthermore, by rejecting the purist points of view, the authors have sought to make their model for research methods comprehensive. That is to say, there is no research situation to which their approach to qualitative and quantitative research is expected not to apply. Their model itself is expected to be universal.

One of the most prominent abstractionist features in Johnson and Onwuegbuzie's article is their assumption that relationships must be based on sameness. They argue that one of the major flaws of the paradigm wars "has been the relentless focus on the differences between the

two orientations” (p. 14). Instead, they argue that the two orientations are actually much more similar (and therefore relatable) than the paradigm wars have indicated. The authors emphasize this sameness in terms of how both approaches employ empirical observation, describe data, provide explanations of data, speculate about the outcomes of observations, and attempt to provide warranted assertions about human beings. Johnson and Onwuegbuzie attempt to reduce the differences between qualitative and quantitative orientations to issues of micro and macro observation and then argue that these differences are complementary and that one does not exclude the other—essentially making them similar by arguing that they are two sides (macro and micro) of the same coin (observation). This move, however, simply ignores some of the more fundamental philosophical differences between the worldviews (e.g., objectivism vs. value-laden research, sensory observation vs. lived experience, etc.; see Chapter 2). In other words they minimize some differences and flatly ignore other important differences. Ultimately, the authors assume that differences between the two worldviews would be barriers to their relationship and thus the attempt to downplay any differences and to focus on what they see as similarities that should allow for relationship.

These examples suggest that Johnson and Onwuegbuzie’s critique of the paradigm wars is thoroughly abstractionist in its ontology. They assume that methods can be universally applied across paradigms because they are atomistically self-contained and thus carry their essential qualities with them from context to context. They likewise assume that the relationship between qualitative and quantitative worldviews must be based on sameness and they accordingly emphasize the similarity of the two worldviews. Furthermore, they put forth a model for understanding qualitative and quantitative methods that seeks to be universal to all research situations and to contain any relevant methodological approach.

Had the authors assumed a relational ontology, they would have approached their topic quite differently. Perhaps the most important change would be an emphasis on relationships of difference. A relational approach would seek to preserve the otherness of differing research paradigms and so would seek for a mixed methods that allows the traditions to speak to one another in their difference, perhaps through contradiction and disagreement as well as convergence. In other words, a relational ontology would lead the authors to explore how the differences between post-positivism and interpretivism are themselves grounds for relationship. Furthermore, a relational approach would have led the authors to take seriously the role of worldviews as context for research methods. They likely would have explored how methods might need to change if they are to be accommodated within alternative worldviews in order to fit the alternative assumptions and values. Likewise, assuming relationality would have led the authors to consider how their model for mixing methods likely does not account for every possible research situation and thus advocate an openness to differing perspectives.

Theme: A new “third” paradigm for mixed methods: Pragmatism. Johnson and Onwuegbuzie acknowledge that, despite the points of commonality in qualitative and quantitative research, the interpretivist and post-positivist paradigms (in their “purist” iterations) give rise to a variety of philosophical problems. According to the authors, these philosophical debates are likely “interminable” and they argue that it is not the purview of social scientists to resolve these conflicts. Moreover, they suggest that pursuing these debates is not likely to make any meaningful difference to the practical problems that researchers face. Instead, they claim that in order to avoid these apparently irresolvable conflicts from the purist positions, mixed methods must put forth a “third” alternative paradigm which can better accommodate both schools of methods without the conflicts.

In step with the overwhelming majority of mixed methods researchers (e.g., Biesta, 2010; Feilzer, 2010; Greene & Hall, 2010; Howe, 1988; Morgan, 2007; Onwuegbuzie & Leech, 2005a; Scott & Briggs, 2009), Johnson and Onwuegbuzie (2004) argue for pragmatism as the best alternative paradigm to serve as a foundation for mixed methods.⁸ According to Johnson and Onwuegbuzie, pragmatism is an approach that emphasizes the practical over the ideal. What this means for researchers is that “when judging ideas [like worldviews and methodologies] we should consider their empirical and practical consequences” (p. 17). In other words, researchers should judge claims about interpretivism and post-positivism as well as qualitative and quantitative methods based on the practical consequences of accepting those claims or employing those methods. More specifically, the authors assert that researchers should “choose the combination or mixture of methods that works best for answering [their] research questions” (p. 17). Thus, they identify the research question as the “most fundamental” determinant of the appropriate methods and methodologies for any given project.

The decision to opt for a new worldview in pragmatism, rather than relating the two founding worldviews of qualitative and quantitative methods, has important ontological implications and suggests that, here too, Johnson and Onwuegbuzie are employing an abstractionist ontology. As they did in making their argument against the paradigm wars, the authors continue to assume here that methods are atomistically self-contained and therefore can have universal application across worldviews (such as pragmatism) without any loss of their

⁸ A number of other paradigms for mixed methods have been suggested, including the transformative paradigm (Mertens, Bledsoe, Sullivan, & Wilson, 2010), critical realist paradigm (Maxwell & Mittapalli, 2010), and dialectical paradigm (Greene & Hall, 2010). Because the pragmatic paradigm is most widely regarded in the mixed methods literature, my analysis here focuses on Johnson and Onwuegbuzie’s account of pragmatism. However, as I will expand upon below, much of my analysis and critique of pragmatism applies more broadly to any of these “third” paradigm approaches, inasmuch as they sidestep relating positivism and interpretivism by devising a new worldview that is neither positivist nor interpretivist.

essential qualities. Likewise, they assume that the foundations of qualitative and quantitative methods are basically similar and that because of this similarity these methods can be related and mixed. It is on the basis of these assumptions that they argue that qualitative and quantitative methods can operate unchanged within pragmatism. However, in their argument for pragmatism it becomes clear that the authors are making these assumptions not only about methods, but also about worldviews and paradigms.

Initially it appears that the authors are critical of the abstractionist treatment of worldviews in the paradigm wars. It was common in the paradigm wars to treat post-positivist and interpretivist worldviews as all-encompassing abstractionist systems of thought. Worldviews were assumed to be atomistically self-contained—ideally worldviews would describe and account for all that matters to researchers and thus need no reference outside of themselves to other worldviews. Likewise, worldviews were meant to encompass everything that is essential to understanding the world. Thus, researchers in the paradigm wars assumed that worldviews contained all of the essential characteristics necessary in a worldview to account for the world. Because worldviews were intended to be all-encompassing they were also assumed to be universal. That is to say, worldviews intended to account for all there is, or at least all that matters to researchers. It was not the intention that researchers draw upon different worldviews depending on the context. Furthermore, relationships among worldviews were understood only in terms of sameness. Because these worldviews were so different, they were presumed to be irreconcilable. Moreover, the intention that worldviews be able to account for all possible situations placed these worldviews in competition—either they were the same and in agreement (one might even say they would be redundant) or they were different and rejected one another.

Johnson and Onwuegbuzie, along with many other mixed methods researchers, reject the way that the paradigm wars assumed qualitative and quantitative methodologies to be insulated from and opposed to one another, based on this similar tension between worldviews. However, as my analysis of their treatment of the method wars suggests, rather than ultimately questioning the abstractionism underlying the method wars' understanding of worldviews, Johnson and Onwuegbuzie instead brought this same abstractionism to bear on methods and used it to import methods into a new third (abstractionist) worldview or paradigm. In other words, rather than challenging the philosophical structure that made post-positivism and interpretivism (and their methods) seemingly irreconcilable, the authors made from the same philosophical cloth a new "container" for qualitative and quantitative methods that could presumably house both approaches without conflict. That is to say, in pragmatism the authors have put forth a worldview that is itself atomistically self-contained, presumably containing the essential characteristics to universally account for all research situations, both qualitative and quantitative. Indeed, this is the same problem that arises for all "third" paradigm approaches—rather than questioning the abstractionism that seems to prevent meaningfully relating post-positivism and interpretivism, they merely opt for a new abstractionist paradigm (one that is neither post-positivist nor interpretivist and thus is not a true "relating" of the two).

In fact, Biesta (2010) contends that Johnson and Onwuegbuzie are not actually offering an alternative paradigm in pragmatism.⁹ Rather, he argues, they are advocating what he calls "everyday pragmatism," the notion that we should emphasize "what works" and favor practice over philosophy. This everyday pragmatism, according to Biesta, does not delve sufficiently into

⁹ Biesta (2010) applies this critique not only to Johnson and Onwuegbuzie (2004), but also to several of the prominent mixed methods accounts of pragmatism (e.g., Morgan, 2007).

the breadth and depth of philosophical pragmatism as articulated by philosophers such as Pierce, Dewey, James, Davidson, and Rorty. Instead, they offer some general maxims about “workability” and leave much of their philosophical worldview unarticulated. Because they are not fully articulating a pragmatic worldview, this leaves open questions about what sorts of worldview assumptions would ground this pragmatism.

For example, what is it about the practical situation that can resolve conflicts between qualitative and quantitative approaches where philosophical and methodological discussions have supposedly failed? Are worldview conflicts only philosophical or can they be practical as well? For instance, a mixed methods researcher drawing from the same subject pool for both the qualitative and quantitative strands of a study might be faced with a practical conundrum: should she strive for objectivity by employing a double blind in her mixed methods study as the quantitative strand would suggest or should she instead embrace the value-laden perspectives of researchers and participants as the qualitative strand would suggest? This dilemma is simultaneously practical and philosophical, so how does the practicality of the situation rescue the researcher from the philosophical problem? Likewise, how does a theory of “what works” determine what our standards for “working” are? In other words, what values does pragmatism presuppose? What might pragmatic researchers be tacitly assuming about what are worthwhile research ends and what are appropriate research questions to which “workable” methods can be applied?

In raising these questions I do not mean to suggest that pragmatically oriented mixed methods researchers could not offer an account of how pragmatists ought to determine “workability,” how practical worldview conflicts might be settled, or more generally what sort of value system underlies their pragmatism. However, in this case (as with other mixed methods

accounts of pragmatism; see Biesta, 2010) Johnson and Onwuegbuzie treat pragmatism as a system that can objectively arbitrate methodological and worldview conflicts using the supposedly value-free tools of the research question, the (ambiguous) standard of “workability,” and the practical situation. It appears that in this “everyday pragmatism” there is an unacknowledged and unexamined value system at play, much as I described in Chapter 2 under the label “unacknowledged methodological appropriation.”

Had Johnson and Onwuegbuzie assumed a relational ontology, instead of responding to the paradigm wars with a new paradigmatic worldview, they likely would have pursued more relational ways of understanding worldviews and their methods. First, they may have explored how it changes our understanding of worldviews if we no longer treat them as self-contained systems, but rather as incomplete worldviews in the context of other worldviews. One result of this contextualist assumption would be that they could explore how the differences between worldviews can themselves strengthen mixed methods. For example, they could explore how a mixed methods study could put the two worldviews in dialogue and debate with one another on a research question. Likewise, the authors may still have drawn inspiration from the methods of the pragmatists inasmuch as they point researchers to attend to the context of practical situations. However, they would have further explored how researchers must nevertheless examine their notions of “what works” and orient any given practical situation to its broader context. In fact, they may have found a welcome application in the hermeneutic circle, because rather than stopping with workability and the practical situation, the hermeneutic circle would suggest that researchers recontextualize these specifics in terms of their broader cultural and philosophical contexts. This circular movement from part to whole and whole to part would prevent

researchers from treating any one context (like the practical situation) as if it is not contextually situated itself.

Summary. As my analysis of Johnson and Onwuegbuzie (2004) has indicated, although they appear to show some relational impulses, mixed methods accounts of worldview issues ultimately assume an abstractionist ontology. In their critique of the paradigm wars as well as in their proposal of a new paradigm in pragmatism, Johnson and Onwuegbuzie treat both worldviews and methods as atomistically self-contained systems that retain their essential characteristics regardless of the context in which they are applied. Likewise, the authors assume that in order to be meaningfully related, worldviews or methods must be similar and that differences are barriers to relationship. Furthermore, this analysis has suggested that pragmatism, the favored “third” paradigm or worldview for most mixed methods researchers, is likely not so much a bona fide worldview as it is a screen for hiding the operations of worldviews in mixed methods research. Had the authors assumed a relational ontology they instead would have emphasized the differences as well as the similarities between interpretivism and post-positivism and explored how these differences are borne out in methods practices. Furthermore, they would have sought to bring about a meaningful relationship between the worldviews that preserves these differences, rather than dissolving them into similarities. Likewise, they would have assumed that method practices are necessarily shaped by their worldview contexts and they would have explored the ways that bringing methods in contact with new worldviews might alter them.

Methodology. With the development of mixed methods research over the past 20 years, a number of researchers have proposed a wide variety of possible mixed methods research designs (e.g., Creswell & Plano Clark, 2007, 2011; Jones, 1987; Leech & Onwuegbuzie, 2009;

Mason, 2006; Morgan, 1998; Sandelowski, et al., 2007; Sherman & Strang, 2004; Teddlie & Tashakkori, 2009; Teddlie & Yu, 2007; Wheeldon, 2010). Creswell and Plano Clark (2011) have summarized these designs and provided a basic typology of mixed methods designs in the recent second edition of their textbook on mixed methods research. For my exemplar of methodological approaches to integration I will draw upon their textbook chapter that describes these typologies. Creswell is a leading figure in mixed methods with several successful methodology textbooks to his name in qualitative, quantitative, and mixed designs, many in collaboration with Plano Clark (Creswell, 2007, 2009, 2011; Creswell & Plano Clark, 2007, 2011; Plano Clark & Creswell, 2007; Plano Clark & Creswell, 2009). Likewise, Creswell is one of the founding editors of the *Journal of Mixed Methods Research*, the leading mixed methods journal. Creswell and Plano Clark are co-directors of the Office of Qualitative and Mixed Methods Research at the University of Nebraska-Lincoln and their expertise is often sought in providing training and workshops in mixed methods designs (e.g., Creswell, February, 2008; Plano Clark & Creswell, July, 2011). Their widely regarded textbook (Creswell & Plano Clark, 2007, 2011), is frequently cited by researchers as the source of their mixed methods design (e.g., A. Berry, Katras, Sano, Lee, & Bauer, 2008; Davidson, et al., 2008; Davis & Higdon, 2008; Quan-Haase, 2007; Vitale, Armenakis, & Feild, 2008), suggesting that this textbook and the chapter under analysis here are fairly representative of the mixed methods community's approach to methodology and design.

Theme: Emergent vs. Fixed Designs. In opening their chapter, Creswell and Plano Clark acknowledge that mixed methods research can employ both emergent and fixed designs. Fixed designs are those that determine ahead of time all of the methods and procedures that researchers will use in conducting their experiment and are more typical in post-positivist

research. Emergent designs, on the other hand, are those for which the design and procedures “emerge” throughout the research process as the researchers seek to mold their design to the dynamic and unfolding contextual demands of the research situation. Accordingly, emergent designs are more typical in interpretivist research. Creswell and Plano Clark state that both types of designs are important, but go on to only describe fixed designs, hinting at a possible bias toward post-positivism rather than the integration or even co-equal status of post-positivism and interpretivism.

Moreover, fixed designs lend themselves more readily to abstractionism. For example, they appear to be self-contained (with no loose ends for “emergence”), with their essential qualities already accounted for and prescribed. Context then can fill in the details as the design is applied, but the basic character of the design is independent of any particular research context. Likewise, fixed designs presume a sort of universalism—they are universal to particular types of research situations (thus Creswell’s term “typology”) and they neglect the inherent changeability of research situations that a relational ontology would suggest.

According to the authors, they limit themselves to fixed designs because their emphasis here is on planned research and because the “linear and fixed nature of printed text” (p. 55) is inadequate for an exposition of emergent designs. However, the authors chose this emphasis and could have just as well described emergent possibilities throughout the research process. Likewise, other methodologists have successfully described emergent designs in printed text (e.g., Hesse-Biber & Leavy, 2010). Creswell and Plano Clark (2011) could have at least provided a case example of an emergent study (as they did with the fixed designs they outline) to illustrate emergent possibilities, but they did not. Thus, the authors appear to pay lip service to emergent designs (and their relational implications), but go on to exclusively feature fixed

designs. Had the authors assumed a relational ontology they likely would have featured a fuller exploration of emergent designs, particularly considering how oriented emergent designs are toward context. Likewise, in discussing fixed designs they would take particular care to discuss how fixed designs will likely need to be adapted and “rewritten” to address the contextual demands of a given research situation.

Theme: “Mixed” worldview designs: Convergent parallel designs. This first category of designs draws upon what Creswell and Plano Clark call “mixed” worldviews (meaning they mix qualitative and quantitative methods in a single worldview) and is made up of convergent parallel designs. Convergent parallel designs, the most common mixed methods design according to the authors, are designs in which qualitative and quantitative data are collected at the same time with each strand of research addressing the same research question. The data are collected in parallel, meaning that they are collected simultaneously, but separately. The convergence of the two data strands, then, takes place in the overall interpretation of the data, typically in the discussion section of the write-up. The authors stress that in these designs the qualitative and quantitative strands should have equal importance in answering the research question—neither should provide a “dominant” methodology.

Creswell and Plano Clark acknowledge that placing equal importance on the qualitative and quantitative strands of convergent parallel designs raises significant philosophical challenges regarding how to relate interpretivism and post-positivism. They state: “Instead of trying to ‘mix’ different paradigms, we recommend that researchers who use this design work from a paradigm such as pragmatism to provide an ‘umbrella’ paradigm to the research study” (p. 78). In other words, the authors are advocating that researchers rely upon a single worldview, albeit a worldview which they identify as “mixed” in orientation. This move toward pragmatism in

many senses sidesteps the question of how to relate post-positivism and interpretivism and also invokes many of the same ontological issues that come from the “third” worldview approaches (specifically pragmatism) discussed above.

Accordingly, several features of convergent parallel designs suggest that these designs rely on an abstractionist ontology. By importing qualitative and quantitative methods into a new “umbrella” worldview, convergent parallel designs invoke the abstractionist trio of essentialism, atomism, and universalism. They assume that the methods are essentially the same under the new worldview, because they carry with them their essential characteristics. Likewise, in order to retain their essential qualities from one worldview to the next, methods must be atomistically self-contained. That is, the methods do not depend on anything outside of themselves (such as the worldview context of a research situation) for their identity. What is implied here is that methods can be universal to any worldview. Thus, Creswell and Plano Clark give no indication that there is any essential change to these methods when the two strands of data are “converged” at the interpretation stage, suggesting that they continue to retain their basic essence.

Abstractionism (and essentialism in particular) is particularly evident here because convergent parallel designs include those that involve researchers translating qualitative data into quantitative data for a converging quantitative analysis. The quantitized data are assumed to retain their basic essence from their qualitative form, despite their massive reduction from textual data to numbers.

Furthermore, convergent parallel designs assume that relationships must be based on sameness. This need for sameness is seen most prominently in Creswell and Plano Clark’s argument that researchers should adopt a single “umbrella” worldview rather than relate interpretivism and post-positivism. One of the major justifications they give for sidestepping

relating the two worldviews is because they are too different—they diverge too significantly on key issues. In other words, they see the differences between the worldviews as preventing an adequate relationship between the two and instead they turn to a single worldview that emphasizes points of sameness between qualitative and quantitative methods. Beyond worldview considerations, these designs require an emphasis on sameness across the qualitative and quantitative research strands. The authors emphasize that in order to converge the findings at the interpretation stage, it is important for both strands to be in lockstep with one another in the ways that they define the phenomena under consideration. This imperative ignores that there are often important differences between qualitative and quantitative approaches to conceptualizing their object of study. Quantitative methods tend to favor precise definitions (typically operational definitions geared toward quantitative measurement) of the object of study at the outset. On the other hand, many qualitative methods begin with a working definition (typically linguistic) of the phenomenon, fully expecting the ensuing data collection and interpretation to revise and inform the definition along the way. Thus, these practices encourage researchers to treat these methods as if they are more similar and to ignore important differences, all in the name of making them more relatable to one another.

It is true that Creswell and Plano Clark acknowledge that the two strands of research in convergent parallel designs may result in divergent findings, which divergence may at times be insightful. However, the authors nevertheless point to the importance for researchers to resolve such divergence, typically with further data collection. Although resolving divergent findings may be one fruitful option, the authors ignore the possibility that emphasizing the differences and mining these differences for what they can say about the phenomenon under consideration might often be an appropriate and illuminating option. Moreover, resolving divergence with

further data collection begs the question of what type of data should be collected: qualitative, quantitative, or both? In fact, divergent findings may sometimes occur because of important differences between the methodologies. Hence, choosing one method to resolve differences may in reality be merely ignoring differences—the differences emerge from the methods as much as (or more than) from the findings.

Had the authors assumed a relational ontology they likely would not have defaulted to a single worldview like pragmatism, but would have sought to preserve worldview differences by advocating that interpretivism and post-positivism ground the qualitative and quantitative strands respectively and then relate these strands in terms of these differences. Furthermore, they would have assumed that methods are shaped by their worldview contexts and would have explored how methods might be impacted by coming up against a different worldview, either in pragmatism or in the “integration” of the two strands at the interpretation stage. In order to assure that both worldviews were indeed represented, the authors also would have explored how differences between the worldviews and their methods matter to their identities and would have sought to preserve these differences. Furthermore, they may have also considered ways that divergent findings could be understood in terms of worldview differences and encouraged researchers to explore these differences rather than merely seeking to resolve them.

Theme: “Multiple worldview” designs—Explanatory and exploratory sequential designs. Explanatory and exploratory sequential designs, according to the authors, are two-phased mixed methods designs that are intended to draw upon multiple worldviews. Explanatory sequential designs begin with a quantitative phase that addresses the primary research questions and then is followed by a qualitative phase, which is geared toward explaining the quantitative results in greater depth. Conversely, exploratory sequential designs begin with a primary

qualitative phase which is followed by a quantitative phase aimed at generalizing the qualitative findings. This design is often employed to develop quantitative measures of phenomena originally observed qualitatively.

Creswell and Plano Clark argue that these designs draw upon multiple worldviews, by employing the respective worldviews in sequence. They acknowledge that it will be tempting for researchers to default to the primary worldview and they admonish researchers to make a shift to the alternate worldview when shifting to the other methodology. However, this approach to integration implies a sort of atomistic independence, where each phase of research is self-contained. The trouble is that Creswell and Plano Clark do not explain how to make this shift or how to relate the two worldviews if the shift is made. Rather, they give procedural explanations for how the second phase is informed by the findings of the first phase, as if the two phases are already compatible. By making the shift procedural, without attending to the philosophical challenges that are also implied, they risk the possibility that no true shift in worldview will take place (see Chapter 2 on methodological eclecticism).

Instead, it is more likely that rather than relating methods from multiple worldviews, researchers will default to a single dominant worldview for the entire study as they formulate an overall conception and purpose for the study (which indeed is what we see in the studies employing these designs covered below in the “Methods” section of this analysis). In fact, from the authors’ discussion of these two designs it appears that the designs likely have a post-positivist bent. The explanatory sequential design, according to Creswell and Plano Clark, is better suited for post-positivist researchers because it emphasizes quantitative methods. The qualitative methods here are more of an “add-on” to provide in-depth description of what has been explored quantitatively. Likewise, although they identify qualitative methods as the

primary method in exploratory designs, they describe how the typical purposes of these designs are to pursue post-positivistic goals: identifying variables for quantitative research and developing quantitative measures. The dominance of post-positivism suggests an unacknowledged universalism—the values of post-positivism are implicitly universal in these designs, even where qualitative methods are employed.

By avoiding the discussion of how to relate the two methodological phases and likely ending up with a single dominant worldview, the authors appear to also be assuming that relationships are based on sameness. They do not discuss how to relate truly post-positivist and truly interpretivist research strands in ways that draw on their differences because they have no language for it. Likewise, the dominance of post-positivism in these designs betrays that fact that the differences that an alternative worldview could have brought are ultimately ignored.

Thus, the risk for these “multiple worldview” designs is that one methodological worldview (typically interpretivism) may become subservient to the other (typically post-positivism) and ultimately subsumed by the dominant worldview. Thus, these designs do not in fact invoke and relate multiple worldviews, but instead are more likely to point to a single worldview. My analysis above suggests that this dominance of a single worldview is the result of an underlying abstractionist ontology in these designs, as evidenced by assumptions of atomism, universalism, and sameness. Had the authors assumed a relational ontology they likely would have taken greater care that the two strands in these designs be grounded in different worldviews, post-positivism and interpretivism. To ensure that multiple worldviews are indeed implemented, the authors would have explored in greater depth the differences between these two worldviews, including where their respective assumptions might lead to certain incompatibilities that could prevent a seamless crossover from one strand to the next. Indeed,

they would have explored how relationships based on these differences might be a way of interfacing the two methodologies rather than demanding that they be compatible based on similarities. Furthermore, they likely would have laid out dilemmas that might arise in the transition from one strand to the next and explored how researchers can make critically informed decisions about shifting from one worldview's conception of a phenomenon to that of the other worldview. A relational approach also would likely have led the authors to provide several examples to illustrate how researchers have responded to such situations based on the contextual demands of the research situation.

Theme: Dominant worldview designs—Embedded designs, transformative designs.

Creswell and Plano Clark identify embedded and transformative designs as mixed methods designs that employ a single dominant worldview. They describe embedded designs as those that employ a traditional qualitative or quantitative design, but that mix methods by including quantitative or qualitative data to answer a secondary question in the service of the overarching dominant research design. For example, a researcher may collect supplementary qualitative data in order to inform and improve recruitment in an overarching quantitative design. According to the authors, the worldview of the dominant methodology should be used to ground the entire study. Although the embedding of alternative data can take place within qualitative and quantitative designs, the authors acknowledge that in practice the majority of embedded designs involve embedding qualitative data within quantitative experimental designs under the guidance of a post-positivist worldview.

Transformative designs are those mixed methods designs that employ a transformative worldview throughout a study, including the design of the study. The transformative worldview is “a framework for advancing the needs of underrepresented or marginalized populations” (p.

96). According to Creswell and Plano Clark, the researcher may use a variety of research procedures that are similar or identical to those that the authors describe under other names. However, the key feature of the transformative design is that the researcher is approaching the design according to what research decisions will best empower marginalized populations and encourage social justice-oriented change. In this sense, the authors consider the transformative worldview a research paradigm rather than merely a theory orienting the content of a study because it is employed to inform research design decisions as well (cf. Mertens, 2007).

Although embedded and transformative designs employ both qualitative and quantitative data, they do not attempt to integrate post-positivist and interpretivist worldviews. Instead they incorporate the two types of methods within a single dominant worldview. As we have already seen with other one-worldview designs, these dominant worldview designs imply an underlying atomism and essentialism because they assume that self-contained qualitative or quantitative methods can be imported into alternative worldviews and still retain the basic essence that makes them what they are. Furthermore, these designs default to an assumption of universalism because they treat research situations as if a single worldview is universally applicable. They do not guide researchers to be sensitive to changing contexts as a relational approach would suggest. Transformative designs, for example, do not caution researchers to be aware of instances where social justice concerns should recede into the background. Likewise, embedded designs do not point to instances where researchers should engage the alternative worldview rather than merely using alternative procedures within the dominant worldview. Indeed, it is telling that embedded designs are primarily used with a post-positivist orientation, suggesting that many researchers may be assuming a universal post-positivism, despite their use of mixed methods.

Likewise, because they employ a single worldview, methods in these designs are related based on sameness rather than difference. Embedded designs focus on the way that supplementary methods can be put to the same purposes dictated by the overarching design. The supplementary methods are included not because they provide a contrasting worldview, but because they supplement the existing worldview. Correspondingly, transformative designs focus on similarities based in social justice goals—whatever methods offer in pursuit of these goals is included, all else is discarded. Hence, transformative designs do not engage alternative worldviews (e.g., interpretivism or post-positivism) that are not explicitly concerned with social justice.

Had Creswell and Plano Clark employed a relational ontology there likely would have been several important differences. First, they would have discussed how importing methods from their original worldview into an alternative worldview necessarily changes the method because it has changed its context. In other words, they would have emphasized how methods' identities are contextual and explored how researchers must adjust methods to the demands of a new worldview. Likewise, they would have cautioned researchers against defaulting to a single worldview with these designs, as if their chosen worldview is universal. Rather, they may have suggested that researchers (at least in the planning stage of design) consider the merits of several worldviews for making sense of their phenomenon of interest before concluding that a single dominant worldview (post-positivist, interpretivist, transformative, or otherwise) is the appropriate fit in that particular instance. Furthermore, they likely would have cautioned that, contrary to the goals of mixed methods, these single worldview designs limit the diversity of methods available to researchers and recommended that researchers implement these designs as

part of a broader program of research that engages and relates multiple worldviews with diverse methods.

Summary. This analysis of the methodology of mixed methods, as typified by Creswell and Plano Clark's (2011) chapter on research designs, has indicated that an abstractionist ontology is at play in mixed methods methodology. Although they attempt to engage a variety of worldviews in mixed methods research, this analysis has suggested that Creswell and Plano Clark do not demonstrate how multiple worldviews (particularly post-positivism and interpretivism) are meaningfully related in these designs. Instead, each class of research design has been shown to ultimately employ only a single worldview, even where the authors have suggested otherwise. Thus, not only have they failed to engage more than one worldview, but they have removed any possibility of relating worldviews as mixed methods demands because such a relationship requires multiple worldviews. Likewise, the authors treat the methods in these designs as if they are self-contained atoms that can carry their basic essence from one worldview to the next without any essential change to their identity in the new worldview context.

This treatment differs fundamentally from a relational ontology because the relational approach would see methods as necessarily contextual, deriving their identities in relationship to their worldview context. Thus, relationality would demand that methods change in fundamental ways as they are adapted to new worldview contexts. Likewise, a relational ontology would have sought to preserve a plurality of worldviews in these designs by demonstrating and drawing upon an awareness of important differences between worldviews. Indeed, a relational approach would likely have led the authors to offer a much fuller explanation of how researchers might relate the two strands of research in these designs, particularly in terms of their differences.

These differences would be essential because the goal for relationists would be to ensure that they are in fact relating two *different* worldviews and not merely importing new procedures into a single dominant worldview.

Methods. Thus far this analysis has indicated that writings addressing the worldviews and methodologies of mixed methods are founded on an abstractionist ontology. However, the question remains whether this abstractionism comes through in the practical application of mixed methods designs or whether mixed methods researchers are more relational in their actual experimentation. Because of the vastness of the literature comprised of studies employing mixed methods designs, I have limited my analysis to five studies identified by Creswell and Plano Clark (2011) as exemplars of the five types of mixed methods designs that they address in their textbook and discussed above: convergent parallel designs (Wittink, Barg, & Gallo, 2006), explanatory sequential designs (Ivankova & Stick, 2007), exploratory sequential designs (Myers & Oetzel, 2003), embedded designs (Brady & O'Regan, 2009), and transformative designs (Hodgkin, 2008). These studies represent not only the design typology provided by Creswell and Plano Clark (2011), but are likewise representative of other prominent classifications of mixed methods designs (e.g., Leech & Onwuegbuzie, 2009; Morgan, 1998; Teddlie & Tashakkori, 2009; Teddlie & Yu, 2007) and broadly encompass the types of designs being employed in the mixed methods literature. Thus, these articles represent the breadth of mixed methods research designs and are recognized as “textbook” instances of those designs by leading mixed methods scholars Creswell and Plano Clark (2011).

I will take each study in turn and, following a synopsis of the study in question, I will provide an analysis of how the article approaches integrating the qualitative and quantitative strands of the study. In this analysis I will first attend to whether and how the article addresses

the worldview(s) at play in the study, including any discussion of integrating or otherwise relating worldviews. I will also discuss whether and how the article addresses the manner in which the worldviews at play impact the methods used in the study. These discussions of worldview issues will be essential in distinguishing whether a study is employing an abstractionist ontology or a relational ontology. This is because a relational ontology will assume that worldview contexts play a major role in defining what a method is. Thus, relationists likewise assume that it is necessary to explain the role of worldviews in order to make clear how and why methods were employed in particular ways, especially where this involves using methods in the context of alternative worldviews. Conversely, an abstractionist ontology is not likely to address any issues arising from the application or integration of a method to an alternative worldview because (as is now familiar) they assume that methods are:

1. *atomistically* self-contained and independent of worldview contexts,
2. portable from worldview to worldview because they retain their basic *essence*,
3. and *universal* or unchanging across worldview contexts.

Thus, the manner in which a study deals with (or fails to deal with) worldviews will serve as an indicator of whether they are approaching methods under the relational assumptions of holism, contextualism, and changeability or under the abstractionist assumptions of atomism, essentialism, and universalism. Where relevant, I will also address whether the integration of the quantitative and qualitative strands is based on relationships of sameness or difference.

Convergent parallel design: “Unwritten rules of talking to doctors about depression: Integrating qualitative and quantitative methods.” As an exemplar of a convergent parallel design, Creswell and Plano Clark selected Wittink, Barg, and Gallo’s 2006 study on older patients’ communications with their physicians about depression. Recall that convergent parallel

designs are those that employ separate and simultaneous qualitative and quantitative research strands, with integration of the results taking place at the interpretation stage, typically in the discussion section of the study.

This study investigated older patients (age 65 and older) who self-identified as depressed. In the quantitative strand patients were surveyed using various measures of patient characteristics, including depressive symptoms and functional status; their doctors were asked to rate the level of the patients' depression. Patients whose doctors rated them as depressed were compared to those whose doctors rated them as not depressed and no significant differences were found, except for a small age difference between the two groups. In the qualitative strand patients were interviewed using a semi-structured format on their experiences communicating with their physicians about their emotions. Analyses of these interviews revealed four primary themes:

1. "My doctor just picked it up" (patients did not bring up depression, but the doctor did, possibly reading non-verbal cues)
2. "I'm a good patient" (patients reported playing a role of being happy and cooperative and thus did not bring up their depression)
3. "They just check out your heart and things" (patients believed that physicians are only concerned with physical symptoms, not emotional symptoms)
4. "They'll just send you to a psychiatrist" (patients reported reluctance to bring up depression because they worry that their physician would not be comfortable talking about depression and "turf" them to a psychiatrist)

Integration. The authors did not address the worldviews guiding their methods, including whether they employed pragmatism or some other "umbrella" worldview as Creswell and Plano

Clark (2011) advise. If anything, their study seemed more oriented toward a post-positivist worldview, with qualitative results viewed in terms of the generalized themes they offered rather than the richer contextualized descriptions of patients' experiences they might also have offered. Likewise, the researchers did not provide any discussion of how the methods were affected by the worldview or worldviews guiding the study, suggesting that their implementation of this design retains the abstractionist assumptions discussed in the "Methodologies" section.

Instead, the researchers emphasized the two methodologies as hypothesis testing (quantitative) and hypothesis generating (qualitative). As discussed previously, this characterization of qualitative and quantitative methods is further evidence that the study is solely relying on a post-positivist worldview, with qualitative methods merely laying the groundwork for the eventual (and epistemologically more important) quantitative hypothesis testing. Likewise, it appears that the researchers are emphasizing the methods' sameness based on an orientation toward hypotheses, rather than differences (many qualitative researchers see qualitative methods as having little to do with hypotheses and prediction). The authors did attempt to integrate the two strands by including a table that depicted columns based on each qualitative theme and rows providing descriptive statistics of the "patient characteristics" for those groups of patients that expressed each theme. However, the authors did not offer any discussion of how these qualitative and quantitative data relate to one another nor did they conduct any statistical analyses using these groupings based on the qualitative data. Thus, the table does not actually provide an integrative interpretation of the data so much as present them in a way that may allow the reader to extrapolate how they might relate to one another. In fact, in their discussion section the authors talked less about an integration of their data and more about how the qualitative data revealed helpful information about differences within the sample

that were not indicated by the quantitative data. In this sense, they seem to be saying that the qualitative method was more sensitive than the quantitative method, essentially *dividing* them based on a lack of sameness rather than relating them in terms of how they mutually enrich their understanding.

Hence, it appears that this study was based on an abstractionist ontology. First, there was no real integration of the data so much as the data were rather presented side by side. Second, the authors did not address worldviews, nor did they indicate how their methods changed in the context of a new worldview. And third, both the qualitative and quantitative strands of the study appear to have been approached through a post-positivist worldview and related in terms of sameness. Had the authors assumed a relational ontology they would have taken greater care to ground the two strands of their study in post-positivism and interpretivism and to explain the different ways that these worldviews guided each strand. Likewise, they would have explored how the context of multiple worldviews might have created tensions between their methods and possibly led to adaptations in the methods. Perhaps most importantly, the authors would have more fully explored the relationship between their two strands of data by placing them in conversation with one another, highlighting where they complement one another as well as where they diverge.

Explanatory Sequential Design: “Students’ persistence in a distributed doctoral program in educational leadership in higher education: A mixed methods study.” As an example of the explanatory sequential design, Creswell and Plano Clark (2011) chose Ivankova and Stick’s 2007 study examining the factors contributing to students’ persistence in a distributed (or distance-based) doctoral program. The explanatory sequential design begins with a quantitative strand and is then followed by a qualitative strand that is intended to further

explain the results of the quantitative strand. In this study, the quantitative strand involved a survey of 278 current and former students in the University of Nebraska-Lincoln's distributed doctoral program in Educational Leadership in Higher Education. A factor analysis of this data resulted in five factors that were predictive of students' persistence in the program:

1. "program"
2. "online learning environment"
3. "student support services"
4. "faculty"
5. "self-motivation."

The researchers followed the quantitative strand with a qualitative strand that further explored the experiences of four students. One student each was selected from the pool of newer students, matriculated students, program graduates, and withdrawn students. These students were selected using statistical procedures to ensure that they were both statistically representative of the groups from which they were drawn and that they represented maximal variation of the overall sample of students. The four students were interviewed using semi-structured interviews and researchers analyzed archival materials including online archives of classes the students had participated in and notes and pictures the students submitted to the researchers. Analyses of these interviews and other materials revealed four principle themes related to students' persistence in the program:

1. "quality of academic experiences"
2. "online learning environment"
3. "support and assistance"
4. "student self-motivation"

Integration. In step with Creswell and Plano Clark's (2011) advice that researchers using this design first orient themselves according to a post-positivist worldview, this study was principally post-positivist with its focus on predictive factors and providing generalizable descriptions of what impacts students' persistence in the program. However, when it came to integrating the qualitative element of the study, rather than shifting to an interpretivist perspective as Creswell and Plano Clark advise, Ivankova and Stick (2007) appear to approach their qualitative data as merely an extension of their quantitative data and to view the qualitative data through a post-positivistic lens. This is perhaps not surprising considering that Creswell and Plano Clark (2011) offer little guidance regarding how to make such a shift, as mentioned above.

There are several indications that Ivankova and Stick (2007) oriented their qualitative research strand according to a post-positivist worldview. For example, the researchers selected their qualitative participants based on post-positivist values of representativeness and generalizability. They likewise oriented their analysis and findings toward generalizable themes, which they treated as if they applied to the broader sample of students, again emphasizing generality over particularity. Consequentially, they were less concerned with providing a rich account of the experiences of persisting or failing to persist in the program as an interpretivist worldview might have dictated. Thus, there is a sense that the two strands are "integrated" because they are approached through the same post-positivistic worldview, but it appears that the researchers did not integrate or otherwise relate post-positivism and interpretivism.

Likewise, the researchers did not provide any discussion or other indication that they approached their qualitative methods any differently from a post-positivist framework. Rather, in step with an abstractionist ontology, they treated their qualitative methods as if they were essentially the same within a post-positivist worldview as they are within an interpretivist

worldview. Thus, this study also appears to have assumed an abstractionist ontology, lacking any meaningful relating of worldviews or sensitivity to the impact of worldview contexts on methods. Had they assumed a relational ontology the authors would have at least offered a justification for only employing post-positivism and explained how their qualitative methods were altered to their post-positivist context. More likely, however, relationality would have led them to conceptualize their qualitative strand from a truly interpretivist perspective and to more fully distinguish this strand from the quantitative strand. They may have approached their qualitative sampling more in terms of selection methods that would help them get at the sorts of experiences that they want to understand instead of focusing on generalizability. They also would have offered a discussion of how these different worldviews shed light on students' persistence in the program from very different perspectives, drawing particular attention to how the two perspectives speak to one another in terms of these differences.

Exploratory Sequential Design: “Exploring the dimensions of organizational assimilation: Creating and validating a measure.” To exemplify exploratory sequential designs Creswell and Plano Clark (2011) selected Myers and Oetzel's 2003 study that created and validated a measure of organizational assimilation (the degree to which a person has assimilated with an organization such as an employing business). Exploratory sequential designs begin with a qualitative strand and are followed by a quantitative strand, building upon the quantitative findings. As is the case with this study, the design is most frequently employed to devise a quantitative measure.

In this study the researchers first interviewed 13 individuals of various ages, employment histories, and organization types on their experiences of assimilation in their organization as well

as on their observations generally of how they have seen others assimilate or fail to assimilate. From these interviews the researchers identified six dimensions of organizational assimilation:

1. “familiarity with others”
2. “organizational acculturation”
3. “recognition”
4. “involvement”
5. “job competency”
6. “adaptive/role negotiation”

Based on these qualitative findings the researchers then devised a questionnaire with multiple questions representing each of these six dimensions of organizational assimilation. They surveyed 342 participants from a variety of organizations using their measure as well as three other scales, which were used for validation purposes. The researchers then used confirmatory factor analysis to test the content validity of the items and to winnow out any items that had a factor loading below .40. They likewise performed tests of validity, demonstrating that, as predicted, their scale correlated positively with measures of job satisfaction and organizational identification and negatively with a measure of propensity to leave.

Integration. Although Creswell and Plano Clark (2011) advise that researchers using exploratory sequential designs begin with an interpretive worldview and then shift to a post-positivist worldview, it appears that Myers and Oetzel (2003) relied solely on post-positivism to orient their study and integrate their data. Rather than trying to get inside of interviewee’s experiences themselves, the researchers appeared to be using these experiences as a means of getting at the “construct” of organizational assimilation that they presumed to lie behind those experiences.

This qualitative exploration was intended to identify “dimensions” rather than experiences and was ultimately intended to result in a quantitative measure. Thus, the qualitative methods were used for ultimately quantitative purposes and were not employed according to an interpretivist worldview. Furthermore, because they employed only one worldview, the researchers were unable to integrate or relate post-positivism and interpretivism. Accordingly, integration in this study occurred as the qualitative data were used to generate the “dimensions” or “factors” of organizational assimilation as well as the questionnaire items.

It appears that Myers and Oetzel have assumed an abstractionist ontology in their study. As with the two previous studies I have discussed, they offered no indication that their methods were changed or adapted to fit the new worldview. Likewise, they did not attempt to relate worldviews and where they did relate qualitative and quantitative methods it was based on the sameness provided by a single post-positivistic worldview. A relational ontology may have led this study in several different directions. First, the researchers likely would have considered whether organizational assimilation is more the sort of phenomenon that naturally lends itself to counting or to linguistic description rather than assuming that their goal from the outset was to quantitize organizational assimilation. In other words, they would have adopted methods according to the contextual demands of organizational assimilation rather than assuming a post-positivistic framework by default. Assuming that they did find contextual justification for qualitative and quantitative exploration, the authors would have approached their qualitative strand first and foremost in terms of how it made sense of interviewee’s experiences of organizational assimilation. Likewise, in transitioning to the quantitative strand, the authors likely would have discussed the philosophical decisions they faced in moving from rich textual interviews to thinner and more general themes to numerical scores. They also would have

cautioned their readers about the dangers of confusing these “thin” and abstract representations of organizational assimilation with respondent’s actual lived experiences and offered their instrument only as a rough heuristic that should only be used in light of other contextual information.

Embedded Design: “Meeting the challenge of doing an RCT evaluation of youth mentoring in Ireland: A journey in mixed methods.” For their exemplar of embedded designs Creswell and Plano Clark (2011) selected Brady and O’Reagan’s 2009 account of their journey developing a mixed methods RCT evaluation of the Big Brothers Big Sisters program in Ireland. Embedded designs are those that employ a traditional qualitative or quantitative design, but that mix methods by including quantitative or qualitative data to answer a secondary question in the service of the overarching dominant research design. This article is unique among Creswell and Plano Clark’s (2011) exemplars in that it does not describe the results of the experiment, but rather provides a case study of a research team’s process in developing their research design, eventuating in an embedded mixed methods design.

In this article, Brady and O’Reagan (2009) explored the challenges in meeting their funding agency’s preference for RCTs, citing the design’s methodological rigidity and relative unfamiliarity in evaluation in Ireland as particularly challenging. The authors described three phases in the development of their design. In the first phase they initially designed their study attending to the demands of the RCT methodology and grappled with the limitations they faced in their particular research situation (ethical, practical, scientific). Specifically they were concerned with the ethical implications of assigning some youth to receive no mentoring and the practical demands of recruiting enough participants in the one region of the country where the program was sufficiently well established.

The researchers had received multiple requests from the service providers that they be given an opportunity to offer qualitative feedback as part of the evaluation, so in the second phase they looked at incorporating an embedded qualitative strand. This qualitative strand, they explained, would allow them to supplement their primary research question regarding the outcomes of this mentoring program with a complimentary inquiry into the mentoring processes that would lead to these outcomes. Thus, this qualitative strand addressed two additional research questions regarding how the program is experienced by stakeholders and how the program is implemented.

When consultants were concerned that this qualitative piece could spin off on its own and lack integration with the quantitative piece, they moved into the third phase in which they anchored these strands of research to a theoretical model of mentoring and added a research question that pointed toward integration. Specifically, they asked “What results emerge regarding the potential of this youth mentoring program from comparing the outcome data from the impact study with the case study data from the mentoring pairs?”

Integration. Because the article only describes the design phase of the study and not the actual results or interpretation, it is difficult to speak to the actual integration of the qualitative and quantitative research strands. Nevertheless, unlike the previous studies I have so far analyzed, Brady and O’Reagan did provide some discussion of the worldviews orienting their study. They described a process of beginning in pragmatism where they focused on the fit of their methods to their research questions and then moving to a dialectic worldview where they poised the two methods to speak to one another in relationship. They did not, however, discuss the way that pragmatism or dialectics relates to the original worldviews of their qualitative and

quantitative methods, nor do they indicate whether there is any relational impact on one method or the other as it comes in contact with a new worldview.

It is possible that the authors intend for their dialectic stance to describe a dialectic relationship between the worldviews of post-positivism and interpretivism, rather than a dialectic relationship of qualitative and quantitative procedures within a single worldview. However, they do not indicate that such is the case and they speak of dialectics as the worldview grounding the study rather than a framework for relating worldviews. Nevertheless, this dialectic stance leaves open the possibility that the authors are open to relationships of difference, although it remains to be seen whether they will actually employ relationships of difference or will rather default to relationships of sameness.

Furthermore, the authors did discuss how they employed a theoretical model to unite the qualitative and quantitative research questions. That is, the data from the two strands were expected to speak to various facets of a theory about the impact of youth mentorship. However, the authors did not indicate that this theory shows any promise of integrating the post-positivist and interpretivist worldviews. They only suggest that both strands can shed light on the theory. As we have seen in previous examples, it is quite possible to apply the data to inform a theory through the lens of a single worldview rather than through multiple worldviews in relationship. Considering that embedded designs, according to Creswell and Plano Clark (2011), typically rely on a single dominant worldview, it is very possible that this study will employ the single lens of the RCT's post-positivist worldview rather than relating post-positivism and interpretivism.

This study then, shows some potential signs of a relational ontology, but it remains to be seen whether the authors' final approach will actually be relational or whether it will instead assume an abstractionist ontology. Perhaps the key question for this study is whether the authors

will be able to truly approach each strand of the study from the founding worldview of the method they are using and then relate these strands in a way that preserves their worldview differences. I have noted that there are some indications that they could end up employing a single worldview. If this is the case, then from a relational approach they would want to offer contextual justification for why a single worldview made sense for their study and describe how the new worldview context altered their methods.

Transformative Design: “Telling it all: A story of women’s social capital using a mixed methods approach.” Creswell and Plano Clark’s (2011) exemplar of a transformative design is Hodgkin’s 2008 study on women’s social capital, a construct referring to a person’s involvement in community relationships. Transformative designs are those that employ any configuration of both qualitative and quantitative research strands and are oriented to the transformative worldview (emphasizing social justice in each stage of research). In this particular study, Hodgkin was concerned that previous research on social capital had largely been oriented to a White, middle class, male conception of social capital and she wanted to investigate whether there might be differences and even inequities in women’s social capital that had heretofore gone unexamined.

She began by conducting a survey of both men and women on which participants indicated their frequency of participation in social, community, and civic activities. Hodgkin conducted statistical analyses that indicated that there were indeed differences in the social capital profiles of women as compared to men, with women participating in more social activities overall, women more likely to engage in informal activities, and men more likely to engage in formal activities. In the second phase of the study she interviewed 12 of the women from the first phase in order to try to understand the motivations behind these women’s

participation in civic activities. Themes emerging from the interviews revealed a variety of motivations for women to engage in social and civic activities. First, some women believed that being socially engaged was their duty as “a good mother,” seeing these activities as part of caring for their children. Second, others used these activities to avoid social isolation, attending to their own needs. And third, others saw these activities as part of being “a good citizen,” focusing their motives on the good of their community.

Integration. The integration of the qualitative and quantitative findings in this study took place through the lens of a single transformative worldview, rather than incorporating an integration of more than one worldview. That is, the methods were used instrumentally in the service of the transformative worldview’s higher values of social justice and giving a voice to the voiceless. Thus, the author described the quantitative data as “providing the big picture, revealing a different pattern of participation for men and women” and the qualitative data as “developing and sharpening this picture, assisting to explain why this may be so” (p. 313). She likewise characterized the quantitative data as useful in revealing larger patterns of difference between men and women’s social capital and the qualitative data as giving a voice to women regarding their experiences within those patterns. In this sense, Hodgkin uses the transformative worldview to emphasize points of commonality for relating the two methods—they are both potentially tools for empowerment. Accordingly, Hodgkin did not indicate whether the methods were adapted in any way to fit the context of a transformative worldview. Rather, she treated the methods as if they could be imported into this new worldview without any essential change.

Thus, as with the four previous exemplars, it appears that Hodgkin’s study is also undergirded by an abstractionist ontology. She treats her methods as if they operate independently of any particular worldview context and relates them based on their similarities

rather than also allowing for their important differences. Had she assumed an abstractionist ontology the author would have discussed her decision to use a transformative worldview in contrast with the possibilities of employing post-positivism or interpretivism and explained how the context of her research problem was best suited to a transformative approach. Furthermore, she would have also been open to the possibility that her study warranted multiple worldviews, particularly considering the differences that other worldviews could bring to bear on her research problem. Likewise, she would have assumed that her methods are constrained by their worldview contexts and explored how her methods are adapted to fit the transformative worldview.

Summary. It appears that the authors of these five studies have successfully managed to use qualitative- and quantitative-like procedures together to address common research problems. However, with one possible exception, this analysis suggests that their use of multiple methods has been under the guidance of a single worldview rather than multiple worldviews in relationship. It is significant to note that, unlike the studies that explicitly stated that they were using an alternative “third” worldview, the studies that did not discuss their worldview orientation appeared to be oriented toward post-positivism. This unacknowledged post-positivism corresponds with what I observed in Chapter 2’s literature review—that many instances of mixed methods do not appear to draw upon interpretivism, but instead incorporate textual procedures within the already dominant (and often taken for granted) post-positivistic worldview.

Given that there was little discussion of the role of worldviews in these articles, it is perhaps unsurprising that the authors correspondingly offered little discussion of the role that their orienting worldview plays in contextualizing their use of research methods. Perhaps most

indicative that these studies assumed an abstractionist ontology, none of the authors indicated that their methods were impacted in some way by their application within a new worldview context as a relational ontology would suggest. This assumption that their methods are unchanged in new worldview contexts suggests they have retained the atomism, essentialism, and universalism which I have previously identified in the writings on worldview and methodology.

Likewise, where the authors did attempt to integrate their qualitative and quantitative findings, they tended to base these relationships on sameness rather than highlighting the differences that would be so important to a relational approach. The primary way that the authors made their methods similar was by adapting one or both methods to fit within a single uniting worldview. In this way, many of the authors were able to treat that data from one strand of their study as if it was merely an extension of the other strand. Furthermore, the authors did not explore divergent, contradictory, or otherwise conflicting relationships based on differences between methodologies as a relational ontology would have indicated. Where they did point to differences, they were complimentary differences that were more differences of degree rather than of kind (e.g., hypothesis generation vs. hypothesis testing, breadth vs. depth). It does remain to be seen, however, whether Brady and O'Reagan's (2009) proposed dialectical framework will allow them to approach their qualitative and quantitative strands in terms of their methodological differences and allow these differences to engage one another dialectically.

Conclusion

At the conclusion of my literature review in Chapter 2, I suggested that the reason mixed methods approaches are struggling to genuinely relate post-positivism and interpretivism could be because they are assuming a problematic ontology. As this ontological analysis has borne

out, it appears that mixed methods approaches to integration are largely, if not exclusively, undergirded by an abstractionist ontology that prevents any meaningful relationship between these two methodological worldviews that preserves their different identities. This abstractionism favors an approach to worldviews that treats them as self-contained and comprehensive, leaving little room for a relationship with an alternative worldview that purports to be profoundly different. As my analysis has indicated, this abstractionist approach to worldviews has emerged not only in writings that explicitly address worldview issues, but also those addressing mixed methods at the methodological and methods levels.

In addition to this approach to worldviews, abstractionism has also led mixed methods researchers to treat methods themselves as if they are contextless. Perhaps the most common theme in this analysis has been that mixed methods researchers import methods into alternative worldviews as if they operate essentially the same in any worldview context. As I have argued above, this treatment of methods assumes that they are universally applicable across worldviews because they atomistically contain the essential characteristics that make up their identity, and therefore they require no further reference or adaptation to worldview contexts to be what they are. In fact, as I have noted both in Chapter 2 as well as in various points in this analysis, it appears that qualitative methods in particular end up being modified to fit an alternative post-positivist worldview, but because of these abstractionist assumptions this modification is not acknowledged.

The primary implication of this analysis is that abstractionism as an ontological foundation for mixed methods has prevented mixed methods researchers from approaching their research through multiple worldviews and from drawing relationships between multiple worldviews that preserve their differences. Accordingly, this abstractionism has prevented

mixed methods researchers from *truly* mixing their methods because methods are guided by worldviews. A possible implication of this failure is that an alternative ontology has a better chance at approaching mixed methods in a way that is truly based in a plurality of worldviews rather than a single worldview. In this vein, I propose to explore a relational ontology within mixed methods to see if it can solve these problems that abstractionism seems to create. In my exposition of abstractionist and relational ontologies in Chapter 3, as well as in my dialectical analysis in this chapter, I have offered hints at how a relational ontology would approach mixed methods. My purpose in the next chapter, then, is to conclude this dissertation by more fully illustrating how a relational ontology would transform mixed methods to be able to draw on the breadth and diversity that the interpretivist and post-positivist worldviews have to offer.

Chapter 5: An Ontologically Relational Approach to Mixed Methods

In Chapter 2 I argued that the problem facing mixed methods researchers was that, despite their intention to integrate methods from differing worldviews, mixed methods approaches to combining qualitative and quantitative data invariably did not integrate the worldviews that drive the methods, and thus never did any real “mixing.” I suggested that seemingly unsolvable problems like this one have often had roots in a problematic ontology and I proposed an ontological analysis to investigate whether the problem facing mixed methods was indeed ontological. Thus, in Chapter 3 I laid out the ontological tools necessary for an ontological analysis of the mixed methods literature and in Chapter 4 I conducted the ontological analysis. As this analysis revealed, existing mixed methods approaches are indeed founded on an abstractionist ontology which appears to create this problem of disallowing the meaningful relating and engaging of two or more methodologies. In conducting this analysis, Chapters 3 and 4 also included a contrasting exploration of a relational ontology and hinted at some of the implications of an alternative relational approach to mixed methods. Perhaps the biggest implication has been that a relational ontology might approach mixed methods in a way that solves their problem—namely in that it appears to allow for a meaningful relating and engagement of multiple worldviews, and thus meaningful guidance of a type of mixed method.

Thus, the purpose of this chapter is to conclude this dissertation with an exploration of how a relational ontology might help to resolve the dilemma of mixed methods by allowing researchers to engage and relate multiple worldviews and, thus, truly draw upon a mixture of methods. Of course, it is beyond the scope of this dissertation to provide researchers with a comprehensive “how to” manual on a relational approach to research methods. Instead, this chapter has two goals: First, to coalesce the relational themes already present in previous

chapters by providing an overview of how a relational approach to research methods would change mixed methods and help to truly and meaningfully engage divergent methodologies. Second, to more fully illustrate how relationality helps to solve the problems of mixed methods by providing an example of a relational approach to a specific mixed method topic.

A Relational Take on the Current Practice of Mixed Methods

In a number of places my ontological analysis indicated that mixed methods writings often showed relational impulses, even if these were ultimately premised by abstractionism. Thus, I would like to begin by exploring how relationality might take some of these relational intentions and see them through in a thoroughly relational fashion. As I have noted previously, the mixed methods critique of the paradigm wars initially appears to be a critique of an atomistic approach to worldviews (e.g., Johnson & Onwuegbuzie, 2004; see Chapter 4). The paradigm wars were thought to treat post-positivism and interpretivism as if they are atomistically self-contained, creating a rift between the two that apparently allows for no relating of the worldviews or of the respective quantitative and qualitative methods that were associated with them. Mixed methods researchers reacted to this atomism and criticized these approaches as unnecessarily insular (Howe, 1988; Johnson & Onwuegbuzie, 2004; Morgan, 2007). They argued that a researcher should be able to appreciate and draw upon both worldviews and both types of data, linguistic and numerical.

A relational approach to research would be sympathetic to this critique of the paradigm wars. Worldviews, according to relationists, are provisional, fallible, and contextual, so treating them as if one overarching worldview should be able to contain all that is true about the world as the paradigm wars appeared to do is problematic. Likewise, relationists would agree with mixed methods advocates that it is essential for researchers to be able to engage and relate more than

one worldview, if for no other reason than to dialectically reveal their own worldview assumptions. Moreover, relationists would concede that there is nothing about post-positivism that rules out linguistic data nor is there anything about interpretivism that rules out numerical data.

However, from here relationists part ways with current attempts at mixed methods. As the ontological analysis demonstrated, rather than approaching worldviews tentatively and in relational plurality, mixed methods researchers have slipped back into a framework of self-contained and comprehensive worldviews, thus not allowing them a meaningful relation of worldviews and methods. They proposed new “third” worldviews to subsume all research situations, but these were merely *new* worldviews with differing fundamental assumptions from the older worldviews they were intended to subsume. In other words, the third worldviews did not simplify, but instead complicated the overall mixed methods picture, including the abstractionist notion of the self-containment (and thus unrelatability) of all the worldviews. More often than not, the “subsuming” worldview merely incorporated textual data and analysis into the existing and familiar post-positivist framework, and thus obliterated truly qualitative methods. The biggest problem with their overall approach is that they have failed to mix methods because a true mixed methods requires multiple worldviews (to guide multiple methods) and a meaningful relating of those diverse worldviews and methods.

Thus, relationists would argue that mixed methods researchers have not actually “mixed” methods, but instead have managed to liberalize post-positivism by expanding the types of data and procedures available to post-positivist researchers. That is, they have failed to engage and relate both interpretivism and post-positivism together, leaving their methods to be guided by a single worldview and by extension a single family of methods. In fact, there is historical

precedence for this sort of liberalization of post-positivism. Behaviorist post-positivism in the early 20th century was based on a very narrow notion of observability which assumed that the only real and scientifically investigable phenomena were observable behaviors (Gardner, 1987). Under this behaviorist framework mental phenomena were explained in terms of behaviors: memory was expressed in terms of behavioral learning and language in terms of “verbal behaviors” (e.g., Skinner, 1957). The “cognitive revolution,” challenged this narrow rendition of post-positivism by arguing that scientists can and should be able to study cognitive phenomena that are not directly observable in the behaviorist tradition (Gardner, 1987). Noam Chomsky (2002), for example, famously disputed B. F. Skinner’s (1957) behavioral conception of language by demonstrating that Skinner’s theory of language could not account for the syntactical complexity of language nor the rapid acquisition of grammatical language ability in young children. Chomsky’s triumph, in concert with other contemporary cognitivist challenges to behaviorism (Miller, 2003), was hailed as a “revolution” that challenged psychologists to broaden their scientific methods to include not only behaviors, but also mental phenomena, however operationally defined (Gardner, 1987).

Although this “revolution” led to a broadening of post-positivistic practices, it did not change the basic assumptive framework that makes up the post-positivistic worldview (Bishop, 2005; Yanchar, 2005). Bishop (2005), for example, demonstrated that cognitive psychology continues to make the same basic assumptions of post-positivism (e.g., empiricism, efficient causation) in its reaction to the behaviorist notion of science and that this cognitive approach merely takes a more liberal view on scientific observability than did the behaviorists (cf. Gardner, 1987). Analogously, my analysis of mixed methods has suggested that their methodological “revolution” has further liberalized post-positivism by expanding the sorts of

procedures available to post-positivist researchers, although they have failed to relate and employ both post-positivism *and* interpretivism. Though relationists might applaud this broadening of post-positivism with its move toward greater diversity within the worldview, they would nevertheless argue that this falls far short of their actual goal of mixing and relating methodologies.

One particular worry from a relational perspective about the abstractionist attempt to mix methods is that it could lead researchers to believe that they use, understand, and integrate both qualitative and quantitative methodologies, when in fact they only use and understand one worldview's version of using numerical and textual data. Nursing researchers Giddings and Grant (2007) expressed just this concern, relating a scenario based on their experiences that illustrates how abstractionist mixed methods can obscure the value and need for interpretivism:

A Masters student from a science department who was using a mixed-methods design for her dissertation research (survey and semi-structured interviews) was overheard saying to a faculty member after a research forum in which a hermeneutic phenomenologist had presented her work: 'You know, I don't know what they are going on about. Why they go on into all that philosophical and methodological stuff. I'm doing qualitative research and it is pretty straightforward . . . doesn't need all that . . .' Both walked away looking somewhat satisfied and somewhat bemused. (p. 201)

The student in this example dismissed an interpretivist qualitative approach because she assumed that her understanding of qualitative research, as informed by mixed methods approaches, was sufficient to address any qualitative research situation. Giddings and Grant expressed the worry that in a similar manner abstractionist attempts at mixed methods will lead to the further marginalization of truly interpretivist research by guiding researchers, funding agencies,

academic departments, and policy makers to assume only a post-positivist revision of qualitative methods and ignore or dismiss the interpretivist worldview, methodology, and methods. If this becomes the case, mixed methods would not only have failed in making both interpretivism and post-positivism accessible to researchers, but it would have actually done the opposite by increasing the dominance of post-positivism and making interpretivism *less* accessible.

Furthermore, this state of affairs would only further emphasize that abstractionist attempts at mixed methods have failed to actually mix methods because they have failed to “mix” the interpretivism that is necessary to have a true “mixture” of methods.

Thus, a relational ontology has great sympathy for the relational intentions of the mixed methods movement. In step with these intentions, a relational ontology would seek to move away from the abstractionism implied in the paradigm wars and to increase diversity in the methods available to researchers. However, the relational approach would seek to rectify the apparent failures seen in the current abstractionist approach to mixed methods by ensuring that they are not merely mixing procedures, but actually mixing *methods* which would require a relationship of diverse worldviews.

A New Relational Direction

How then would a relational ontology seek to provide a true mixed methods that relates post-positivism and interpretivism, thus resolving the problems of the paradigm wars? In this section I will offer eight key features of a relational mixed methods. Each of these features are integral to relationality’s possible solution for relating multiple worldviews as the mixed methods project ultimately requires. In explaining these features, I will attempt to describe some of the specific practices that a relational ontology would imply for mixed methods researchers and I will explain how these practices help to preserve a plurality of worldviews (and by

extension a meaningful mixing of methods). Throughout this discussion it will be important to recall that abstractions, as opposed to *abstractionism*, do have a place in a relational ontology (see Chapter 3). Abstractions are both useful and necessary from a relational perspective because they allow us to represent and reflect upon facets of our otherwise immensely complex and boundless lived experience, although they are not viewed as contextless or unchangeable by context differences. Thus, using language to describe an experience or an idea and using theories or philosophies to describe an understanding of the world are all important ways that relationists seek to make sense of the truth about the world. However, relationists assume that these abstractions are necessarily impoverished, fallible, and incomplete representations of the world and that they should point back to the richer and more real context of lived experience. Conversely, abstractionists tend to treat abstractions themselves as if they represent what is really real and true (and thus unchangeable) about the world. Hence, as we will see in this section, relationists use abstractions, but do so contextually as opposed to the abstractionist approach which treats abstractions as independent of context.

Feature 1: Shifting between and relating worldviews requires that researchers have an awareness of the differences between worldviews in order to avoid simply imposing the old worldview on a different set of methods. Indeed, the claim that relationships *require* difference is one of the key assumptions I have attributed to a relational ontology. This feature means that researchers need to be aware not only of the ways that worldviews might be philosophically different, but also how they are practically different. For example, several of the studies I examined in my ontological analysis used supposedly qualitative methods to generate generalizations that they could apply to a broader population. A relational researcher would recognize that these practices are grounded in post-positivism and that an interpretivist practice

(in its differences from a post-positivist practice) would emphasize and seek out the rich particularity of specific situations over thinner generalizations. By recognizing these differences the researcher could more deliberately employ practices that actually draw on multiple worldviews. To be sure, a relational approach would not rule out a researcher using post-positivist textual methods or interpretivist numerical methods. The point here is that a researcher should be aware of these worldviews and how they differ so that such a choice can be made deliberately and according to the contextual demands of the research situation, rather than through the operations of an unexamined and unacknowledged worldview.

A further implication of this focus on difference in relational mixed methods is that relational researchers would be reluctant to treat interpretivist and post-positivist strands of a mixed methods study as if they are talking about the exact same thing. Recognizing that these worldviews will often lead to different basic assumptions about the nature and identity of the object of study, relationists would not assume that their approach in one strand would necessarily translate to their approach in the other strand. Thus, their attempts to relate the two strands would often involve other sorts of relationships than equation, such as comparison and contrast. In this sense, the metaphor of “mixing” methods would have limited application here inasmuch as it implies a blending of interpretivist and post-positivist methods at some point in the study. For the same reason that American multicultural metaphors have moved from the “melting pot” to the “tossed salad” (e.g., Bachmann, 2006), relational mixed methods would want to take care that the distinct identities of the parts not be lost in their part-whole relationships.

This focus on differences implies a number of important research practices for relational mixed methods. Perhaps most obviously, researchers would make a point of looking for important worldview differences as they conceptualize, design, and carry out their research to

ensure that they are holding true to their intended worldviews. Although much of this attention to differences could occur informally, researchers may find it helpful and important to employ fidelity checks in which experts on the worldviews in question review their research designs, analyses, interpretations, and practices to ensure that they are faithful to their intended worldviews. These fidelity checks could also be helpful in honing in on areas where the demands of one strand of a mixed study appear to impinge on the normal worldview operations of the other strand. Although such conflicts between worldviews may result in compromise, these decisions can be made in consultation with experts and according to the contextual demands of the object of study rather than by unconscious default to a dominant worldview.

Feature 2: A true plurality of worldviews will probably require a plurality of worldviewers. That is to say, relationality would not expect that every person should be able to comprehensively adopt and represent every worldview. This is because a relational ontology assumes that people, like everything else that exists, are rooted within a particular context, which context allows for some views of the world and obscures other views of the world. It may be helpful here to recall the analogy of the horizon I discussed in Chapter 3. From a particular vantage point we can see off to a horizon, beyond which the landscape nevertheless extends. As we move toward the horizon, some of that previously obscured landscape comes into view while other views recede behind the horizon to our backs. This analogy illustrates the relationist claim that we are always limited in our ability to view the world and that our vantage point both reveals and conceals aspects of the world. The analogy likewise implies that an effort to gain every view of the world will be fruitless because each move to a new vantage point opens up certain vistas and closes down others.

Moreover, relationists assume that worldviews are “sticky.” That is to say, our worldviews arise out of the context of our history, culture, family, friends, beliefs, and practices. Although relationists would understand these contexts to be changeable, dynamic, and in flux, they would likewise assume that our contexts hang together in “contexts of contexts” and thus persist in important ways. Take culture for example. Much of a person’s identity is shaped in relationship to his or her culture and culture is generally assumed to play a part in a person’s view of the world. Although it is possible for a person to encounter and even immerse herself in another culture, there is often a sense that she carries a certain “nativity” that colors the way she encounters and interprets this new culture. Of course she can interpret her nativity in a variety of ways and perhaps she could even be “adopted” into the new culture. These operations of culture however are always in relation to where she has come from and the context in which she finds herself. As an adoptee she has likely lost certain views of her native culture and nevertheless lacks a multitude of other cultural viewpoints. The point here is that according to relationality we cannot absolutely abstract ourselves from any particular context (like culture) to then enter into any other context. Our contexts both constrain and enable our views of the world.

The analogy to culture does imply that relationality allows that we can “try on” alternative worldviews and indeed it is important to the relational researcher to do so. However, the analogy likewise warns that in trying on alternatives we may nevertheless be prone to approach them in ways that are shaped and colored by our native worldview. Because of these contextual constraints on our views of the world, a plurality of worldviewers becomes all the more important to relational mixed methods. Such a plurality not only provides a diversity of alternative worldviews for us to “try on,” but it also can place us in relationship with worldview “natives” who can evaluate and challenge our representations of their perspectives. These

worldview “natives” would be ideal experts to provide the worldview fidelity checks suggested with Feature 2. In this light, fidelity checks not only emphasize and ensure a researcher’s faithfulness to an intended worldview, but they also relationally engage a plurality of worldviewers in framing and interpreting a study.

Thus, to approach a truer plurality of worldviews a relational ontology would suggest that a community of worldviewers can better engage and relate multiple (and more likely diverse) perspectives. This is perhaps not surprising since relationists would reject the notion that a plurality of worldviews should be atomistically contained within the perspective of any one person. Of course, it is possible for a community to form based primarily on similarities in their worldviews and to ignore or downplay their differences. However, a relational approach would suggest that truly diverse views would be valuable and important in order to gain a richer understanding of the world and thus would advocate for communities that draw on difference as well as similarity (see Slife, 2004a for a fuller discussion of communities based on difference). In other words, such a community would need to respect and value each other and the worldviews others bring that are truly different from one’s own. Likewise, it would be important to relationists that these communities do not become “atoms” themselves. Because communities and community members get their worldviews by virtue of their relationships to other worldviewers, it would be important that community members partake in a variety of communities and that communities overlap in important ways. Thus, just as relationality points to “contexts of contexts” it would likewise emphasize “communities of communities.”

This move toward community anticipates one of the primary practical implications of this feature: that researchers would seek to encounter a diversity of worldviews by engaging in community relationships with others whose views of the world contrast their own. Such

relationships would be enriching in their own right, but they could also be the source of research collaborations that would be more likely to represent a true diversity of worldviews. For example, a mixed methods study could involve a collaboration between a pair of researchers who are each “native” to a different worldview and who value and respect the other’s perspective. Each researcher could provide guidance to the other in their efforts to be faithful to the worldviews they are seeking to employ. Indeed, the reason they could understand one another is because they dialectically imply one another—their contrasting differences highlight their very identities. For example, the post-positivist’s assumptions about avoiding bias and seeking objectivity will likely bring into relief the interpretivist’s assumptions about embracing bias and seeking the best set of values. Their exchanges on issues surrounding these differences can help each to see where the other is coming from (*in* their differences) and deepen their understanding of one another. Likewise, a diverse community could be a source of dialogue and debate, with community members regularly encountering new perspectives and challenges through discourse with others in the community and in the broader communities of communities.

Feature 3: In designing a study, researchers would take their cues from the object of study in context. This feature may appear similar to the pragmatist injunction that mixed methods researchers often invoke: let the research question determine the methods (e.g., Johnson & Onwuegbuzie, 2004; Morgan, 2007). Although this pragmatist move does suggest that the research question provides a context to guide the methods, from a relational perspective starting with the research question is not contextual enough. The problem is that research questions themselves are shaped by a broader context, including the nature of the object of study. This contextual nature of research questions means that relationists would not only tailor methods to the context of the research question, but that they would also interrogate and explore the research

question itself in terms of its cultural, ethical, and philosophical contexts and its fit with the object of study.

Thus, an important research practice for relationists would be to reflect upon the nature of the object of study and to approach it from the vantage point of several worldviews to see what worldviews (and by extension what methods) show particular promise in making sense of it. This reflection would likely include consideration for how these worldviews would shape potential research questions. A researcher might consider, for example, whether the phenomenon of interest is something that makes more sense in terms of efficient and material causal processes or in terms of agentic causes that are rooted in formal and final causation (cf. Slife & Williams, 1995). Indeed, the researcher may conclude that each perspective shows promise and opt for a mixed approach. Whatever the conclusion, this decision will lead the researcher to frame research questions in particular ways and to select methods that complement the contextual identity of the object of study. In this sense, relational researchers are less concerned about a commitment to a particular worldview (and thus a set of methods) and more concerned about what is going to help them get at the thing they are trying to understand.

Feature 4: A relational ontology would encourage an openness to an even greater diversity of worldviews, methodologies, and methods. In other words, relationality would not expect that post-positivism and interpretivism be comprehensive, but rather that other worldviews (indigenous to a particular culture or religion) could likewise be helpful and illuminating. Indeed, post-positivism and interpretivism are both outgrowths of the western intellectual tradition (Cochran, et al., 2008) and worldviews with roots in other cultures could illuminate possibilities in research that are not readily apparent to these two worldviews. In order to be open to such a breadth of worldviews, relationists would seek to be aware of their

notions of knowledge and research to avoid unknowingly imposing these notions on other cultural worldviews.

Traditional scientific worldviews, for instance, may not appropriately represent some of the ways that a different culture approaches the world and the relationist would want to take care to understand the cultural worldview on its own terms. Sociologist Douglas Porpora (2006), for example, has observed that the methodological practices in most studies on religious experiences tend to “bracket out” the spiritual objects of those experiences (e.g., God), assuming a sort of atheism. According to Porpora, the problem here is that the contents of experiences are informed by the objects of those experiences and he argued that researchers risk misconstruing and misunderstanding these experiences if they rule out spiritual phenomena *a priori*. In fact, he concludes that this bracketing implies “that there are no genuine experiences of anything so that the very category of experience dissolves” (p. 59). The point for Porpora is that if researchers want to understand religious experiences, they need to take seriously the worldviews of those having the experiences because these worldviews help define those experiences.

For instance, Slife and Reber (in press) demonstrated that a theistic worldview provides important advantages for psychologists who want to study religious experience because spiritual worldviews themselves (e.g., theism) frame the experiences of the religious people under investigation. To illustrate the problem of ignoring spiritual worldviews like theism, the authors demonstrated that most psychological research on Christian prayer ends up instrumentalizing prayer in ways that point *away* from the truly theistic understanding of prayer (e.g., glorifying God, acknowledging dependence on God) that frames the experiences of participants. They argued that if researchers really want to understand the meaning of Christian prayer, they would need to know something about the theism of the person praying. Regardless of a researcher’s

orientation toward theism, according to these authors, giving credence to a theistic framework on the part of their participants provides a better conceptual fit and greater illumination for making sense of what they are trying to understand.

Thus, relational researchers would seek to encounter a broad diversity of worldviews, methods, and methodologies by exploring different philosophical and cultural approaches to knowing the world. Likewise, these explorations would be particularly guided by the things they are trying to study, as in the example of theism for studying religious experience. Indeed, taking participants' worldviews seriously in this manner reflects the relational impulse that has led many researchers to refer to them as "participants" rather than as "subjects"—they literally participate in shaping our understanding of the object of study. In this sense, relationists would eschew any particular methodological or worldview orthodoxy in favor of a more pluralistic approach to worldviews, methodologies, and methods.

Feature 5: Relationists would encourage creativity in response to the contextual demands of research situations. Because relationality assumes that interpretivism and post-positivism are not comprehensive (nor are their current methods), a relational mixed methods would call upon researchers to be innovative and creative in devising methods that help them get at the thing they are trying to study. Of course, this sort of creativity will require that researchers be aware of their own assumptions and seek out alternative assumptions so that they can be sensitive to the creative possibilities in their research practices. Likewise, researchers would persistently reflect upon the nature of their object of study as well as the limitations of their current methods in order to discover new possibilities that can help them better understand their object of study.

Thus, researchers would approach each instance of research design as if they are “rewriting” their methods in important ways. Although they may in many cases be tailoring otherwise familiar methods to their particular research situation, they would nevertheless want to be asking themselves how the contextual particularities of their object of study might dictate innovations in their methodology. This practice of “rewriting” methods is perhaps more closely associated with qualitative methods, but from a relational perspective it would apply just as well to quantitative methods. That is to say, relationists recognize that quantitative researchers regularly adapt their methods to the particular needs of their research project. The point here would be to make this process more explicit and to immensely broaden the methodological possibilities available to researchers.

Feature 6: Dialogue (as opposed to monologue) can bring a plurality of worldviews into relationship. Perhaps the primary way that relationists would attempt to “integrate” mixed methods would be to place them in dialogue with one another. Indeed, there is a sense that the verb “integrate” is not quite apt for describing an attempt to relate different worldviews because it implies that the worldviews would somehow reconcile into a single viewpoint (defeating the goal of multiple worldviews). Dialogue, on the other hand, suggests multiple voices representing multiple perspectives. Thus, the goal in a mixed methods study would be to interpret findings in a way that places the two strands of research in dialogue with one another. This dialogue could engage similarities and differences between the two strands, not only in terms of their findings, but also in terms of the way that their worldview assumptions differently frame an understanding of the object of study. Thus, research reports would try to convey these multiple voices in the first-person, rather than the third-person monological style traditional to research reports. This dialogical approach to interpreting and reporting findings could be particularly well suited to

collaborations between “natives” of different worldviews who can each literally provide a different voice to the dialogue.

Because relationists are interested in differences as well as similarities, they would be open to the possibility that the dialogical engagement of two strands of a mixed study could result in contradiction and disagreement as well as convergence and agreement. Researchers might approach such disagreements in a variety of ways. As always, the object of study (and information or “data” pertaining thereto) would be a primary consideration in arbitrating a disagreement, and it could be the case that one perspective is judged to make better sense of it. However, researchers may also choose to present their divergent findings and interpretations as they stand in opposition, making the best case they can for each perspective. In this way they can offer their audience a dialectical perspective on their study and engage a community of researchers in further dialogue to explore such differences. Indeed, philosopher of science Paul Feyerabend (1993) has argued that, historically, pursuing tensions between divergent viewpoints has often led to scientific progress that could not have been anticipated in the midst of such tensions. This is not to say that relationists would not be interested in resolving disagreements, but rather that they would avoid being hasty in seeking a resolution if such a resolution shuts down a perspective that still appears to have something to offer the conversation. Likewise, they would expect that any resolution would come through the dialectical comparisons that emerge in dialogue, thus allowing the community to critically evaluate how to best make sense of the phenomenon in question.

Quantum physics offers a well-known example of progress emerging from divergent viewpoints in the debate over whether light is a wave or a particle (Kumar, 2010; Slife & Wendt, 2009). Rather than coming to a resolution that favored one perspective or the other, physicists

came to consider *both* viewpoints as correct depending on the context, even though the two theories are considered to be quite different—even incompatible. That is to say, under some observational contexts light is understood as a wave and under others as a particle. Indeed, physicists generally regard these seemingly contradictory contextual properties as inherent to nature of light (cf. Slife & Wendt, 2009). One major lesson that a relational ontology would draw from this example is that in some situations the notion of “resolution” itself can be an abstraction that does not reflect the true nature of the object of study. In other words, abstractionist resolution is almost always thought to be based on similarities (i.e., abstract concepts), which the wave/particle resolution cannot abide, rather than on differences, whereas the relationist is open to both types of resolution (and reconciliation).

This sort of dialogue in research need not be merely between the worldviews of researchers, but can also include dialogue with the worldviews of research participants and other stakeholders in research (see Feature 4). For example, Steen Halling (Halling, Kunz, & Rowe, 1994; Halling & Leifer, 1991; Rowe, et al., 1989) has argued for a dialogical approach to research that involves research participants as “co-investigators.” In Halling’s approach, participants not only provide “data,” but they also participate in the interpretation of the data through a continual dialogue with researchers about what their data mean and how to make sense of them. In their study on the experience of forgiving another, Halling and his colleagues (Rowe, et al., 1989) argued that the radically interpersonal nature of forgiveness called for just this sort of ongoing open dialogue with participants. The point for Halling here is that the dialogical relationships that a relational ontology endorses can and often should go beyond simply a dialogue between researchers.

Feature 7: The necessarily limited and incomplete nature of any theory or position, according to a relational ontology, demands that researchers approach knowledge claims and one another with humility. Because a relational ontology assumes that a theory or other knowledge claim, as an abstraction, is necessarily limited and incomplete, relationists likewise assume that those making such claims must do so with a humility that acknowledges these limitations. Indeed, not only are knowledge claims limited, but so is any individual's perspective on the world, suggesting that no individual will ever escape this need for humility. Thus, in contrast with abstractionism's assumption that comprehensive knowledge about the world is possible (at least in theory), relationality is assuming that knowledge is *always* to some degree incomplete and fallible. These limitations on knowledge do not mean that knowledge is not possible—quite the contrary. The relationist would argue that it is because of our limited perspective that we can know the world at all because our perspective allows us to engage the world. The challenge for relationists, then, is to pursue knowledge and avoid error, all the while acknowledging their limitations and maintaining a humble openness to the truth that might be revealed through the perspective of another.

Accordingly, the goal for relational researchers would not be to propose comprehensive theories or to outshine other researchers. Instead, relationists would expect that their theories might help to illuminate a phenomenon in relation to a particular context, but they would also recognize that new contexts and new understandings will necessarily revise and sometimes go beyond their theories. Indeed, because relationists assume that the things they study have contextual identities, they would expect that some contexts would change the very nature of the object of study (e.g., the wave of light), requiring new theories and new understandings. Likewise, recognizing their own fallibility and limited perspective, relationists would strive to

recognize their need for others. They would seek out collaborations and seek to maintain an openness to the ways others' views can sharpen their own understanding.

A word about these features. Upon inspecting these features, it may initially appear that they essentially describe qualitative methods. Perhaps this is because the dominance of post-positivism in psychology (itself an abstractionist understanding of post-positivism) could lead to the conception that all alternatives are cut from the same cloth, lumping them together under “interpretivism.” Furthermore, although it is true that some methodologists have attempted to approach their methodology relationally (e.g., Slife & Gantt, 1999; Yanchar, et al., 2005; Yanchar & Williams, 2006), these instances are rare, particularly considering how relationality demands an openness to multiple worldviews and not just to interpretivism. In this sense, interpretivist qualitative methods may attempt to be more sensitive to context in their collection and interpretation of data, thus showing relational impulses, much as the liberalization of quantitative research in the last few decades. Nevertheless many interpretivists tend to limit themselves to a single worldview. Moreover, relationality as I have described it requires quantitative methods because it acknowledges and expects that there are contexts where numbers and counting are going to be especially helpful in making sense of the world. Furthermore, the post-positivist worldview would be one among the many worldviews that relationists would draw upon, being an essential tool in the relational toolbox. My point here is that, although some interpretivist approaches may have relational elements, a relational mixed methods exceeds qualitative methods and interpretivism because it values and requires a plurality of worldviews, methodologies, and methods well beyond qualitative interpretivist methods.

An Example of Ontologically Relational Mixed Methods in Action

To provide a fuller illustration of how a relational approach to mixed methods might work, in this section I will offer a hypothetical example of relational mixed methods in action. Of course, even with the practical detail I hope to provide here, this example is necessarily an abstraction of what relational mixed methods would be like in practice. Thus, the purpose of the example is not to capture everything that a relational approach could entail (indeed relationality would suggest that such a task is impossible), but rather to highlight several practices that stand out as uniquely relational and that show potential for engaging multiple worldviews within one research context. These highlights, then, can serve as a guide and point of comparison for how relational mixed methods might operate in other contexts. The example follows below.

Dr. Fletcher is a psychologist who works for the research department in the American headquarters of a major Christian religion. Her background and training has emphasized post-positivist methods, but as a budding ontological relationist she has been making an effort to learn more about interpretivism and interpretivist qualitative methods with particular interest in how they might open up new possibilities in her research for the church. Her relationality has led her to understand that no philosophy of science exists on its own in a final state pushing her to look beyond post-positivism, in contrast to some of her colleagues who expect a single worldview to be universally sufficient. Consequentially, she is curious about seeking dialectical alternatives, in part to help her understand her own perspective. Likewise, she is hopeful that learning more about interpretivism will enable her to expand her methodological “toolbox” and allow her to use methods in combination to shed light on her research in ways that her post-positivism alone might not. Recently Dr. Fletcher was given the task of investigating church attendance among church members.

As a relationist, Dr. Fletcher begins by reflecting on the nature of church attendance to gain a better sense of what philosophies would be best suited to guide her conceptualization and methodological choices in this study. She notes that in the past the research department's studies on attendance have relied solely on quantitative measures to understand church attendance. However, in reflecting upon the nature of church attendance she recognizes that there are aspects of attendance that lend themselves to counting (how frequently do people attend church) as well as aspects that do not (what is the nature of people's experiences attending church). Dr. Fletcher is unsatisfied with the previous quantitative surveys on the meaning of church attendance because she worries that they are not adequate to represent the diverse and dynamic meanings that she suspects are core to the equally diverse church membership. Part of her concern is that the fixed nature of a survey requires that she determine in advance what types of meanings should be available to her participants and she is not confident that it is possible to sufficiently anticipate all of the possible meanings that might be crucial here. Likewise, she is worried that important meanings might be lost as participants attempt to translate their experiences from ordinary language to the numerical language required in a quantitative survey. Thus, she concludes that a purely quantitative post-positivist approach may not be the best fit for fully understanding the church membership's attendance.

At this point we can already see that Dr. Fletcher's relational orientation is leading her to make several important decisions that would likely be absent had she approached the study assuming abstractionism. First, she is seeking out alternative worldviews to her own (Feature 1). These alternatives are helping her to recognize worldview assumptions in some of her own post-positivist methods (e.g., that meanings can be abstracted into a fixed set of essential meanings on a questionnaire, that people's experiences can adequately be represented by numbers). Likewise,

she is careful to tailor her philosophical/methodological approach to her object of study (Feature 3)—she is concerned that the methods she uses will philosophically shape her understanding of church attendance and thus wants to ensure that they make assumptions that fit closely with the experiences of church attendees.

Dr. Fletcher anticipates that interpretivist qualitative methods might be able to better help her get at the meanings church members experience in their attendance, alongside the post-positivist quantitative methods that would explore the frequency of members' church attendance. However, because she does not consider interpretivism her "native territory," Dr. Fletcher decides to consult with Dr. Simon, a colleague at a local university who is an expert in qualitative methods. As Dr. Fletcher describes what she is trying to get at in understanding the meanings that church members experience in their church attendance, Dr. Simon suggests that a qualitative method based in the phenomenological tradition might be a good fit for her purposes. He explains that this sort of method seeks to understand particular experiences in the ordinary language that people use to describe them and could allow her to pursue meanings as they emerge throughout her investigation, including unexpected meanings. Dr. Fletcher invites Dr. Simon to work with her on this project by serving as a consultant and a "native" representative of interpretivism and he gladly agrees.

As the pair discuss the implications of using the qualitative method that Dr. Simon suggested, it becomes clear to Dr. Fletcher that she needs to not only consider the worldviews that guide her in her research, but also the worldviews of her participants. She recognizes that the meanings she wants to get at are themselves part of a worldview context. Dr. Fletcher raises this concern with Dr. Simon and points out that the church members she will be studying subscribe to a theistic worldview that is not represented in either post-positivism or

interpretivism. After exploring this observation they conclude that it will be essential as she asks interview questions and provides interpretation of interview data that she do so from a framework that assumes that God could be active in members' lives. Thus, she could refer to "God" rather than merely to a church member's "conception of God" or "belief about God." Indeed, "conception of God" was previously and erroneously considered to be more neutral or objective about theist's experiences, but this proved problematic because "conception" referred to a participant's mental construct rather than to the God that a participant was claiming to actually experience (cf. Slife & Reber, 2009). Hence, it is important to Dr. Fletcher that she not treat her participants' experiences as if they are "all in their heads," but rather that she take them in the terms that her participants actually experience them. Thus, she could likewise ask about "God's influence" on their attendance experiences rather than simply their "beliefs" or "notions" of God's influence. This move would not be presumptuous because she can also refer to "conceptions of God" or "beliefs" and "notions" about God when that is the nature of the participant's experiences of "God." Instead, it simply frees her up to take the experiences on the participants' terms.

In Dr. Fletcher's consulting with Dr. Simon we can further see how her relational orientation is impacting her research approach. Dr. Fletcher is acknowledging the limitations of her own particular worldview, and in the humility that this limitation evokes (Feature 7) she engages in dialogue (Feature 6) with another worldviewer (Feature 2) with the explicit purpose of engaging a perspective that is different from her own. Note that she is not merely seeking Dr. Simon's technical expertise in qualitative methods, but rather she is seeking out his full perspective as a worldviewer (in part because she recognizes that such expertise implies a worldview). Moreover, Dr. Fletcher's relationality leads her to not only engage a dialogue

among researchers' worldviews, but also among the worldviews of their participants (who are themselves worldviewers). Not only does this move show further relational adaptation to the contextual demands of her object of study, but it also reflects Dr. Fletcher's understanding that researchers' meanings and interpretations are not atomistically separate from participants' meanings and interpretations—they define and shape one another in holistic relationship. Likewise, Dr. Fletcher's openness to and curiosity about different worldviews allows her to consider a worldview in her participants that is different from either interpretivism or post-positivism (Feature 4). That is, she does not expect interpretivism and post-positivism to be collectively universal. In order to accommodate her participants' theism, Dr. Fletcher and Dr. Simon creatively adapt her approach to interviewing and interpreting interview data to reflect this theism (Feature 5). In this sense, they have “rewritten” a method to uniquely address the contextual demands of understanding the meanings of church attendance.

Although Dr. Fletcher has not yet collected or interpreted any data in this study, there is a real sense that her interpretivism and post-positivism are already enriching one another. This is because the worldviews side by side are drawing into greater focus their differences, including what each could differently contribute to the project. Her qualitative methods bring into greater relief how valuable her quantitative methods are for assessing and describing church members' attendance behaviors. Qualitative interviews by contrast appear much less suited to that job. Likewise, her quantitative methods bring into greater relief how valuable her qualitative methods are for exploring and understanding the meanings that church members experience as they attend church. Quantitative measures of these meanings seem to fall short in contrast with what her qualitative methods have to offer here. Thus, we are already seeing some of the fruits of “mixing” or relating methods.

As Dr. Fletcher and Dr. Simon consult on her research design they run into some questions in discussing her sampling methods. Dr. Fletcher explains to Dr. Simon that in her previous quantitative research she has preferred to use random sampling in order to obtain a sample that would be representative of the broader church population and thus allow for generalization of her results. However, she is concerned that the low number of participants in the qualitative strand of her study will fall short of the requirements of probability sampling theory for a representative sample. Dr. Simon explains that although qualitative methods are concerned with a type of generalizability, they attend to it differently from probability sampling theory and their sampling methods often have other concerns as well. He explains that her sample needs to be representative of the sorts of experiences that she wants to understand and that the focused and detailed scope of her method might require her to likewise focus what types of experiences she expects to look at in this study. Dr. Simon goes on to clarify that generalization based on this study would be judged more in terms of how similar the research context is to the context to which she would like to generalize. If contexts are dissimilar then she should expect that experiences in the different context could likewise be different and thus would want to be cautious about making generalizations. However, he points out that generalizations are primarily about sameness and that comparing the context of a qualitative study to a fairly different context might nevertheless provide insights that could allow her to anticipate some of the possible meanings of those differences.

Dr. Fletcher takes Dr. Simon's admonition to focus her qualitative research question and consults with the church research department as well as some of the church leadership that will be using her findings in order to decide what would be most helpful. The group is initially confused as to why they cannot get the "big picture" in this study, but Dr. Fletcher explains how

she believes that this qualitative method will allow them to see much that would otherwise be lost in grasping at the “big picture” with a method that is less sensitive to the natural language and diversity of church members’ experiences. The group concludes that they are particularly interested in the experiences of teens in their church attendance and that they want to get the perspective both of teens who attend frequently and those who attend infrequently. They are curious about whether and how the frequency with which teens attend distinguishes their experiences. They also suggest that this mixed study could serve as a “test case” to see if the qualitative approach indeed delivers as Dr. Fletcher has suggested it might. If so, then they intend to follow up with similar studies into other experiences of their church members.

These exchanges with Dr. Simon and with the research department and church leadership demonstrate further manifestations of Dr. Fletcher’s relational ontology. Her conversation with Dr. Simon illustrates how dialogue between worldviewers helps insure against imposing one worldview on the methods of another (Features 1 and 6). Dr. Fletcher is learning how to reframe her notions of sampling and generalizability (and by extension the goals of her qualitative strand) to attend to the differences in interpretivism. Likewise, Dr. Fletcher is beginning to engage a broader community in dialogue, including not only other researchers, but also stakeholders in the research (Feature 2). This involvement of stakeholders in the process further acknowledges the blurred boundary between theory (research findings) and practice (organizational action) because it places the study in the context of the church’s needs much in the tradition of “action research.” That is, Dr. Fletcher is not pursuing an abstract theoretical understanding of attendance which will later be applied to contextual situations in organizational decisions, but rather she is taking her cues throughout the research process from the context of the organization’s needs and current understanding of attendance (Feature 3). Furthermore, we can already see that this relational

dialogue is beginning to open up broader views within this community as fellow researchers and church leaders begin to consider the interpretivist worldview. Their exchange about the “big picture” illustrates how neither worldview will entirely “get its way” and how these compromises are based on the demands of the object of study and its stakeholders, rather than on an arbitrary worldview preference.

With their new focus, Dr. Fletcher and Dr. Simon hammer out the details of Dr. Fletcher’s research design and it begins to become clearer how the quantitative and qualitative research strands might speak to one another. They decide that it will make most sense to begin with her quantitative strand addressing the question of how frequently do church members attend church services. This quantitative strand will draw from a very large sample and will describe attendance throughout the church as well as in terms of demographic and regional groups. Because the qualitative strand is framed in terms of teen’s frequency of attendance, Dr. Fletcher will follow the quantitative strand with the qualitative strand, using her quantitative data on teens’ frequency of attendance to help her define frequent attendees and infrequent attendees. Based on these definitions, she will recruit five frequent attendees and five infrequent attendees for qualitative interviews. This qualitative strand will primarily address the question of what is the nature of teens’ experiences attending church. Dr. Fletcher and Dr. Simon are framing this question without reference to frequency because they do not want to assume at the outset that frequency of attendance will distinguish teens’ experiences. Thus, they will address this question through an analysis of all of the teens’ interviews. However, their secondary question with this strand is whether any distinct themes emerge based on whether teens attend frequently or infrequently and they will address this through separate analyses of the interviews for the two groups of teens.

With this second qualitative analysis, Dr. Fletcher is struggling not to approach it in post-positivist terms, although she wants to be as faithful as possible to interpretivism and thus takes care to check her post-positivist impulses. She is accustomed to treating the comparison of two groups in terms of “variables” and “significant differences” and she wonders how this comparison might differ. Furthermore, she wonders whether interviewers should be “blind” to whether a participant is a frequent or infrequent attendee so as to not bias their interview toward their expectations of attendance experiences based on frequency.

Dr. Simon explains that there are several important differences in the way that interpretivism frames this qualitative comparison. He describes how qualitative meanings typically are not taken to have the same strong (atomistic) boundaries that “variables” often connote and so the different themes that may emerge should be understood as embedded in the contexts of teens’ experiences. In this sense, they are not looking for “factors” or “essential characteristics” that distinguish frequent attendees from infrequent attendees, but rather for narratives that may or may not distinguish the experiences at church of those who attend frequently from those who attend infrequently. Put differently, they are looking at the contextual relationships between two contexts.

Regarding the issue of interviewer bias, Dr. Simon agrees that it will be important to attend to bias, but points out that interpretivism understands and approaches bias quite differently from post-positivism. Whereas post-positivism seeks to minimize bias in the quest for objectivity (and thus would favor “blinding”), interpretivism assumes that every perspective inevitably has some sort of bias and so the goal would be to be aware of bias and to strive for the sorts of bias that show promise in illuminating the object of study. He observes that in this case they are interested in participants’ “biases,” and so it will be important for interviewers to be

aware of their own biases and to have training on how they can gear their interviews to favor participants' perspectives. He explains that interviewers would also "test" or look for violations of their own biases—a type of objectivity, but one that does not presume an independence from values or biases. He would likely direct interviewers to refrain from guessing about things like a participant's frequency of attendance, but would also expect that this sort of information would likely nevertheless emerge in the course of the interview. Thus, interviewers would not be "blind," but would be careful to allow participants to have as much of a voice as possible in framing and describing their experiences. He points out that this approach does not eliminate the interviewers' perspectives, but it does frame their perspectives so that they are biased toward understanding experiences in participants' own words. Because he is much more experienced with these interviewing skills, Dr. Simon suggests that he conduct training for interviewers.

Again, in this exchange we see that dialogue between worldviews (Feature 6) can dialectically distinguish one from the other and make clearer what each has to offer (Feature 1). However, this dialogue also illustrates how each worldview (or worldviewer) interrogates the other, pushing for greater clarity and understanding on issues that emerge from their own perspectives (Features 1, 2, and 6). Although these sorts of exchanges between interpretivists and post-positivists about bias are not unique to Drs. Fletcher and Simon, they illustrate how this dialogue can challenge and sharpen a worldview's perspective. By asking about bias, Dr. Fletcher raises an issue that is very important to her post-positivism and challenges Dr. Simon to address this concern, albeit from through his interpretivism. This is not to say that interpretivism would not otherwise attend to bias, but rather to point out that post-positivism here may help to draw urgency and focus to the need for interpretivism to attend to the way it deals with bias. Put

differently, interpretivism's attention to bias is, in part, a relational response to post-positivism rather than a self-contained response to a self-contained problem.

Dr. Fletcher first collects and analyzes her quantitative data. The quantitative data show specific patterns of attendance for different demographic groups of church membership. Within the teenage group, the findings show that teenagers are more likely to either attend regularly (>75% of Sunday services) or to attend infrequently (<25% of Sunday services) and that relatively few teens fall between these two groups. These findings are fortuitous for Dr. Fletcher's qualitative study because they provide a clear way of distinguishing frequent and infrequent attendees that reflects the actual behavior of teenage church members. Using this definition of attendance frequency (>75% or <25%) to sample participants, she collects and analyzes her qualitative data. The overall qualitative analyses suggest that many teens experience church attendance as an opportunity to socialize with other teens and to worship as a community. Many teens expressed experiencing church as a place where they feel accepted and a place where they feel they are better able to connect with God. They described feeling God's presence in church and "hearing His voice in [their] heart[s]." A minority of the teens described experiencing church attendance as a time where they felt that they did not quite fit in because they felt somehow "different" from others at church. These teens said that they felt a connection with God at church and that this led them to persist in attending, although feeling as if they were on the outside made attendance more of a struggle.

Because this initial qualitative analysis suggests two different types of experiences for teens, Dr. Fletcher wonders if this difference will sort out between frequent and infrequent attendees in her subsequent analysis. However, to her surprise in her secondary analysis she finds these themes emerging within both groups. Instead, the major difference that emerges is

that many infrequent attendees reported feeling like other church members treated them as if they are “special.” They generally described feeling like these church members wanted them to have a good experience and to attend more frequently. However, those who reported “marginal” experiences said that this “special” treatment felt insincere and seemed to heighten their sense of being different, whereas those who reported feeling more integrated described this treatment as contributing to their sense of acceptance and integration. Thus, frequency does not appear to map onto whether or not teens felt marginalized, but it does appear to lead to experiences of being treated as “special.” Likewise, teens’ marginal or integrated status shaped the meaning of this special treatment.

In writing up her findings and presenting them to church leadership and others in the research department, Dr. Fletcher describes how the two strands of her study inform one another (Feature 6): first, with the quantitative strand helping to define attendance frequency for the qualitative strand, and second, with the qualitative strand describing in-depth experiences of attendance as they relate to the frequency of attendance that the quantitative strand had counted. She is also careful to point out that the quantitative and qualitative strands are addressing different, but related, things (Feature 1). That is, the behavior of attending church frequently or infrequently is not the same thing as the meanings experienced at church, although attendance certainly is a necessary condition for those experiences and frequency seems to open up the possibility for particular experiences. She explains that keeping these differences in mind has helped guide her research decisions in employing different worldviews/methods that attend to these differences (Features 1 and 3). She goes on to make explicit how worldviews operated in her study, particularly when they conflicted, and how her interaction with Dr. Simon allowed her to make deliberate decisions based on the contextual demands of the nature of church attendance.

Because relationality would demand that a truly relational example not be self-contained, allow me to provide a postscript that points toward what lies ahead for Dr. Fletcher and her community. The research department and the church leadership are very pleased with what they have learned from Dr. Fletcher's study and they are interested in making qualitative and mixed methods a bigger part of how they do their research, suggesting that their community and their research toolbox is growing more diverse (Features 1, 2, and 4). The leaders express that these findings have proven quite useful and they, in consultation with Dr. Fletcher, are already implementing changes in the church to address the needs of marginalized teens (the researchers, stakeholders, and participants are relationally integrated in the process of the study, making this action a natural extension of the research and not merely an "application" of the findings; Features 2 and 3). The leadership and research department want to build upon Dr. Fletcher's study by exploring the attendance experiences of other groups within their membership and church visitors as well. If this ongoing research is to be truly relational, it will not merely be an accumulation of more and more findings, but also a recurring recontextualization of their understandings of attendance—a dialogue of sorts between their studies and the policies that are enacted (Features 4, 6, and 7). They recognize Dr. Simon's important contribution and they hire him on as a consultant to direct them in their qualitative efforts (Features 2 and 7). In this sense the "mixing" is extending beyond the boundaries of this one study and leading to a greater diversification of this particular community. Likewise, it is drawing on multiple overlapping communities as Dr. Simon represents a broader community of interpretivists.

Conclusion

This dissertation has argued that existing approaches to mixed methods have failed in their intention to engage and relate a plurality of methods from different worldviews and that this

failure is the result of an abstractionist ontology. Fundamentally, an abstractionist ontology assumes the abstractedness of worldviews (along with their methods; i.e., their self-sufficiency or self-containment), and thus the independence or orthogonality of their identities from the context of other worldviews and methods. This means that mixed methods either need to keep their methods independent from one another or attempt a mixture within a subsuming worldview.

The trouble with these options, as my analysis has demonstrated, is that they both prevent a true “mixture” or relationship of the methods involved. The first option leaves the methods independent, foregoing any meaningful relationship between the two. Especially when method implications differ, there can be no guidelines for drawing the kind of relationships among methodologies that mixed methods researchers require. The second option merely complicates the problem by introducing new worldview assumptions that are not the same as those of the worldviews that mixed methods researchers intend to use and relate. In this sense, the methods are guided by a different worldview and there is no evidence, let alone mixing, of the original methods. Likewise, a variation on the second option has led some researchers (often unknowingly) to attempt to incorporate methods from one worldview into the other. The problem here is that within the new worldview the methods change and no longer carry the attributes of the alternative worldview that mixed methods researchers intend to incorporate. In each case the abstractionist understanding of worldviews appears to prevent mixed methods researchers from relating post-positivist and interpretivist methodologies as they intend to do.

In this chapter I have suggested that a relational ontology could help mixed methods researchers to actually engage and relate multiple worldviews in mixed methods. I have argued that a relational approach might accomplish this through several unique features, including the need for researchers to be aware of the differences between worldviews, to acknowledge the

need for many worldviewers, to adapt their worldviews and methodologies to the object of study, to seek out diversity in worldviews and methods, to employ creativity in developing the best methods for the job, to engage in dialogue between worldviews and within research communities, and to strive for humility in making knowledge claims and in relating to one another.

The example of Dr. Fletcher and her community illustrates that a truly “mixed” methods involves much more than using numbers and language within a study. Instead, drawing a relationship between worldviews in a mixed methods study requires careful attention to those worldviews (through their worldviewers) and to the nature of the object of study in context. Likewise, the example illustrates that mixed methods necessarily exceeds the boundaries of a single study because of the way that a study engages a broader community in its planning, execution, and interpretation as well as in the way it invites dialogue with other researchers and other studies, not to mention stakeholders and participants. Bottom line: it illustrates a true “mixing” of methods. That is to say, this example demonstrates how relationality might allow researchers to truly engage and relate multiple families of worldview, methodology, and method in ways that enrich one another and their understanding of their object of study.

One might ask at this point, however, whether a relational ontology would suggest that researchers should also be open to abstractionism as one more worldview that could benefit mixed methods. The difficulty with abstractionism for the relationist is that it returns us to the problematic self-containment paradigm that leads researchers either to distinguish different methodologies, and thus methods, as opposed and poorly fit for relationship because of their differences or to assimilate (and change) methods to fit within a single worldview—the very paradigm that I have argued disallows the entire project of methodological pluralism and mixed

methods. The relationist wants to avoid becoming the proverbial man with a hammer for whom everything becomes a nail, and abstractionism appears to carry that threat. In fact, to stretch the metaphor, abstractionism appears to carry the equal threat that the man with a hammer would reject using both a hammer and a saw together in the same project because they are too different—one is for a pounding project and the other is for a cutting project. The point here is that abstractions themselves are not the problem (there *are* good contextual uses for a hammer), but abstractionism *is* the problem because it treats abstractions as if they are contextless and unchanging.

Indeed, the carpenter's relational use of a plurality of tools serves as a helpful analogy and guide for the mixed methods project. The carpenter's tools represent a plurality of worldviews, although often implicit (and perhaps often more obvious than the worldviews implicit in psychology's research methods). Some tools "see" the world in terms of cutting, pounding, smoothing, or shaping. Each is oriented toward the world in particular ways and the carpenter chooses the tools that best suit the job at hand. In the carpenter's hand the various tools work together in relationship to bring about the object the carpenter intends to build. Although the carpenter may find creative and unorthodox uses for certain tools—perhaps finding that a men's dress shoe is ideal for gently and firmly pounding wooden pegs into place—he is likewise sensitive to their limitations. For example, a screwdriver is ideal for driving screws, it might prove adequate for pounding a nail if a hammer is not at hand, but it would likely make a very poor vice grip. This is why it is so important for the carpenter to be able to use a variety of tools in concert with one another—his project requires pounding there, cutting here, and smoothing there. Although each purpose and each tool is in certain ways distinct, these purposes ultimately work together toward the carpenter's final goal: the well-crafted woodwork.

Just as a sort of methodological pluralism is successful for the carpenter, it has been my contention in this dissertation that a similar pluralism should be within the grasp of researchers in psychology. The challenge that we face is that the complex and often abstract nature of research methods can obscure the worldview implications of a method, making it difficult to see how to relate methods from different worldviews. That is to say, picking up a hammer almost intuitively implies pounding just in the feel of the heft and balance of the hammer in one's hand. It is fairly obvious to the carpenter the ways his hammer can allow him to engage the world as well as the points where he needs to pick up a different tool. In this sense, his hammer implies where pounding leaves off in his project and where cutting or smoothing becomes relevant—it implies a relationship with other tools. A correlational or ethnographic method, on the other hand, does not seem to inspire this same sort of intuitive sense of the method's worldview along with that method's value and limitations or its relationship with other methods.

However, it appears that a relational ontology is particularly well suited to bring these worldview and method-relationship issues to light and to allow researchers to use mixed methods with an ease that more closely approaches the carpenter's use of his diverse toolbox. As I have demonstrated in this chapter, a relational ontology can allow researchers to bring various methodological worldviews into dialectical relationship with one another, making explicit the assumptions that might otherwise go undetected and the practices that might go unexamined. This awareness can help researchers to tailor their use of methods according to the needs of their object of study, recognizing where the usefulness of one method leaves off and another begins (a relationship of difference), as we saw in the example with Dr. Fletcher. In this way, a relational ontology can make clearer how to relate divergent worldviews, methodologies, and methods, thus making a true methodological pluralism and mixture of methods in psychology possible.

References

- Aluko, F. S. (2006). Social science research: A critique of quantitative and qualitative methods and proposal for an eclectic approach. *IFE Psychologia: An International Journal*, 14(1), 198-210.
- American Psychiatric Association. (2000). *Diagnostic and statistical manual of mental disorders: DSM-IV-TR*. Washington, DC: American Psychiatric Association.
- American Psychological Association Presidential Task Force on Evidence-Based Practice. (2006). Evidence-based practice in psychology. *American Psychologist*, 61(4), 271-285. doi: 10.1037/0003-066X.61.4.271
- Anchin, J. C. (2008). Comment: Integrating methodologies in the scientific study of interpersonal psychotherapy: A reaction to 'Therapist immediacy in brief psychotherapy: Case study I and case study II.' *Psychotherapy: Theory, Research, Practice, Training*, 45(3), 316-319. doi: 10.1037/a0013394
- Anells, M. (2006). Triangulation of qualitative approaches: Hermeneutical phenomenology and grounded theory. *JAN Journal of Advanced Nursing*, 56(1), 55-61. doi: 10.1111/j.1365-2648.2006.03979.x
- Bachmann, A. (2006). Melting pot or tossed salad? Implications for designing effective multicultural workgroups. *Management International Review*, 46(6), 721-748. doi: 10.1007/s11575-006-0124-4
- Barbour, R. S. (2003). The newfound credibility of qualitative research? Tales of technical essentialism and co-option. *Qualitative Health Research*, 13(7), 1019-1027. doi: 10.1177/1049732303253331

- Barrett, P. (2003). Beyond psychometrics: Measurement, non-quantitative structure, and applied numerics. *Journal of Managerial Psychology*, 18(5), 421-439. doi: 10.1108/02683940310484026
- Bazeley, P. (2006). The contribution of computer software to integrating qualitative and quantitative data and analyses. *Research in the Schools*, 13(1), 64-74.
- Bazeley, P. (2009). Editorial: Integrating data analyses in mixed methods research. *Journal of Mixed Methods Research*, 3(3), 203-207. doi: 10.1177/1558689809334443
- Bednarz, D. (1985). Quantity and quality in evaluation research: A divergent view. *Evaluation and Program Planning*, 8(4), 289-306. doi: 10.1016/0149-7189(85)90024-2
- Bernstein, R. J. (1983). *Beyond objectivism and relativism: Science, hermeneutics, and praxis*. Philadelphia, PA: University of Pennsylvania Press.
- Berry, A., Katras, M., Sano, Y., Lee, J., & Bauer, J. (2008). Job volatility of rural, low-income mothers: A mixed methods approach. *Journal of Family and Economic Issues*, 29(1), 5-22. doi: 10.1007/s10834-007-9096-1
- Berry, W. (2001). *Life is a miracle: An essay against modern superstition*. Washington, DC: Counterpoint.
- Biesta, G. (2010). Pragmatism and the philosophical foundations of mixed methods research. In A. Tashakkori & C. Teddlie (Eds.), *Sage handbook of mixed methods in social & behavioral research* (2nd ed., pp. 95-117). Thousand Oaks, CA: Sage Publications.
- Bishop, R. (2005). Cognitive psychology: Hidden assumptions. In B. D. Slife, J. S. Reber & F. C. Richardson (Eds.), *Critical thinking about psychology: Hidden assumptions and plausible alternatives*. (pp. 151-170). Washington, DC: American Psychological Association.

- Bishop, R. (2007). *The philosophy of the social sciences: An introduction*. London, England: Continuum.
- Blake, R. L. (1989). Integrating quantitative and qualitative methods in family research. *Family Systems Medicine*, 7(4), 411-427. doi: 10.1037/h0089788
- Bohan, J. S. (1993). Essentialism, constructionism, and feminist psychology. *Psychology of Women Quarterly*, 17(1), 5-21. doi: 10.1111/j.1471-6402.1993.tb00673.x
- Brady, B., & O'Regan, C. (2009). Meeting the challenge of doing an RCT evaluation of youth mentoring in Ireland. *Journal of Mixed Methods Research*, 3(3), 265-280. doi: 10.1177/1558689809335973
- Brannen, J. (2005). Mixing methods: The entry of qualitative and quantitative approaches into the research process. *International Journal of Social Research Methodology: Theory & Practice*, 8(3), 173-184. doi: 10.1080/13645570500154642
- Brookfield, S. D. (1987). *Developing critical thinkers: Challenging adults to explore alternative ways of thinking and acting*: San Francisco, CA: Jossey-Bass.
- Bryman, A. (1984). The debate about quantitative and qualitative research: A question of method or epistemology? *British Journal of Sociology*, 35(1), 75. doi: 10.2307/590553
- Bryman, A. (2006). Integrating quantitative and qualitative research: How is it done? *Qualitative Research*, 6(1), 97-113. doi: 10.1177/1468794106058877
- Buchanan, D. R. (1992). An uneasy alliance: Combining qualitative and quantitative research methods. *Health Education Quarterly*, 19(1), 117-135. doi: 10.1177/109019819201900108

- Campbell, D. T., & Fiske, D. W. (1959). Convergent and discriminant validation by the multitrait-multimethod matrix. *Psychological Bulletin*, 56(2), 81-105. doi: 10.1037/h0046016
- Caracelli, V. J., & Greene, J. C. (1993). Data analysis strategies for mixed-method evaluation designs. *Educational Evaluation and Policy Analysis*, 15(2), 195-207. doi: 10.3102/01623737015002195
- Carey, J. W. (1993). Linking qualitative and quantitative methods: Integrating cultural factors into public health. *Qualitative Health Research*, 3(3), 298-318. doi: 10.1177/104973239300300303
- Chomsky, N. (2002). *Syntactic structures*. Berlin, Germany: Mouton de Gruyter.
- Cochran, P. A. L., Marshall, C. A., Garcia-Downing, C., Kendall, E., Cook, D., McCubbin, L., et al. (2008). Indigenous ways of knowing: Implications for participatory research and community. *Am J Public Health*, 98(1), 22-27. doi: 10.2105/ajph.2006.093641
- Connidis, I. (1983). Integrating qualitative and quantitative methods in survey research on aging: An assessment. *Qualitative Sociology*, 6(4), 334-352. doi: 10.1007/bf00986684
- Creswell, J. W. (2007). *Qualitative inquiry & research design: Choosing among five approaches*. Thousand Oaks, CA: Sage Publications.
- Creswell, J. W. (2009). *Research design: Qualitative, quantitative, and mixed methods approaches*. Thousand Oaks, CA: Sage Publications.
- Creswell, J. W. (2011). *Educational research: Planning, conducting, and evaluating quantitative and qualitative research* (4th ed.). Reading, MA: Addison Wesley.
- Creswell, J. W. (February, 2008). *Designing and executing mixed-methods research*. Paper presented at the Rackham Interdisciplinary Workshop for Qualitative Research in the

Social Sciences, Ann Arbor, MI. Abstract retrieved from:

http://sitemaker.umich.edu/creswell.workshop/creswell_workshop

Creswell, J. W., & Plano Clark, V. L. (2007). *Designing and conducting mixed methods research* (1st ed.). Thousand Oaks, CA: Sage Publications.

Creswell, J. W., & Plano Clark, V. L. (2011). *Designing and conducting mixed methods research* (2nd ed.). Thousand Oaks, CA: SAGE Publications.

Curlette, W. L. (2006). A framework for research studies: Mixed methods through combining Bayesian statistics and qualitative research in individual psychology. *Journal of Individual Psychology*, 62(3), 338-349.

Cushman, P. (1996). *Constructing the self, constructing America: A cultural history of psychotherapy*. Reading, MA: Addison Wesley Longman.

Danziger, K. (1985). The methodological imperative in psychology. *Philosophy of the Social Sciences*, 15, 1-13. doi: 10.1177/004839318501500101

Danziger, K. (1990). *Constructing the subject: Historical origins of psychological research*. New York, NY: Cambridge University Press.

Davidson, P., DiGiacomo, M., Zecchin, R., Clarke, M., Paul, G., Lamb, K., et al. (2008). A cardiac rehabilitation program to improve psychosocial outcomes of women with heart disease. *Journal of Women's Health*, 17(1), 123-134. doi: 10.1089/jwh.2007.0386

Davis, B., & Higdon, K. (2008). The effects of mentoring/induction support on beginning teachers' practices in early elementary classrooms (K-3). *Journal of Research in Childhood Education*, 22(3), 261 - 274.

- Dawson, T. L., Fischer, K. W., & Stein, Z. (2006). Reconsidering qualitative and quantitative research approaches: A cognitive developmental perspective. *New Ideas in Psychology*, 24(3), 229-239. doi: 10.1016/j.newideapsych.2006.10.001
- de Vries, H., Weijts, W., Dijkstra, M., & Kok, G. (1992). The utilization of qualitative and quantitative data for health education program planning, implementation, and evaluation: A spiral approach. *Health Education Quarterly*, 19(1), 101-115. doi: 10.1177/109019819201900107
- Dellinger, A. B., & Leech, N. L. (2007). Toward a unified validation framework in mixed methods research. *Journal of Mixed Methods Research*, 1(4), 309-332. doi: 10.1177/1558689807306147
- Denscombe, M. (2007). *The good research guide*. Maidenhead, Berkshire, England: McGraw-Hill International (UK) Ltd.
- Denscombe, M. (2008). Communities of practice. *Journal of Mixed Methods Research*, 2(3), 270-283. doi: 10.1177/1558689808316807
- Denzin, N. K., & Lincoln, Y. S. (1994). *Handbook of qualitative research*. Thousand Oaks, CA: Sage Publications.
- Deshpande, R. (1983). 'Paradigms lost': On theory and method in research in marketing. *Journal of Marketing*, 47(4), 101-110. doi: 10.2307/1251403
- Dixon-Woods, M., Agarwal, S., Young, B., Jones, D., & Sutton, A. (2004). *Integrative approaches to qualitative and quantitative evidence*. London: Health Development Agency. Retrieved from https://www.nice.org.uk/niceMedia/pdf/Integrative_approaches_evidence.pdf

- Dixon-Woods, M., Bonas, S., Booth, A., Jones, D. R., Miller, T., Sutton, A. J., et al. (2006). How can systematic reviews incorporate qualitative research? A critical perspective. *Qualitative Research*, 6(1), 27-44. doi: 10.1177/1468794106058867
- Dzurec, L. C., & Abraham, I. L. (1993). The nature of inquiry: Linking quantitative and qualitative research. *Advances in Nursing Science*, 16(1), 73-79.
- Feilzer, M. Y. (2010). Doing mixed methods research pragmatically: Implications for the rediscovery of pragmatism as a research paradigm. *Journal of Mixed Methods Research*, 4(1), 6-16. doi: 10.1177/1558689809349691
- Feyerabend, P. (1993). *Against method* (3rd ed.). New York, NY: Verso.
- Forshaw, M. J. (2007). Free qualitative research from the shackles of method. *The Psychologist*, 20(8), 478-479.
- Freeman, M. (2010). The space of selfhood: Culture, narrative, identity. In S. R. Kirschner & J. Martin (Eds.), *The sociocultural turn in psychology: The contextual emergence of mind and self*. (pp. 137-158). New York, NY: Columbia University Press.
- Gadamer, H. G. (2004). *Truth and method* (J. Weinsheimer & D. G. Marshall, Trans., 2nd rev. ed.). New York, NY: Continuum.
- Gantt, E. E. (2005). Social psychology: Exploring alternative conceptual foundations. In B. D. Slife, J. S. Reber & F. C. Richardson (Eds.), *Critical thinking about psychology: Hidden assumptions and plausible alternatives*. (pp. 81-96). Washington, DC: American Psychological Association.
- Gardner, H. (1987). *The mind's new science: A history of the cognitive revolution*. New York, NY: Basic Books.

- Gergen, K. J. (2009). *Relational being: Beyond self and community*. New York, NY: Oxford University Press.
- Giddings, L. S., & Grant, B. M. (2006). Mixed methods research for the novice researcher. *Contemporary Nurse*, 23(1), 3-11.
- Giddings, L. S., & Grant, B. M. (2007). A Trojan horse for positivism?: A critique of mixed methods research. *Advances In Nursing Science*, 30(1), 52-60.
- Greene, J. C. (2008). Is mixed methods social inquiry a distinctive methodology? *Journal of Mixed Methods Research*, 2(1), 7-22. doi: 10.1177/1558689807309969
- Greene, J. C., Benjamin, L., & Goodyear, L. (2001). The merits of mixing methods in evaluation. *Evaluation: The International Journal of Theory, Research and Practice*, 7(1), 25-44. doi: 10.1177/13563890122209504
- Greene, J. C., Caracelli, V. J., & Graham, W. F. (1989). Toward a conceptual framework for mixed-method evaluation designs. *Educational Evaluation and Policy Analysis*, 11(3), 255-274.
- Greene, J. C., & Hall, J. N. (2010). Dialectics and pragmatism: Being of consequence. In A. Tashakkori & C. Teddlie (Eds.), *Sage handbook of mixed methods in social & behavioral research* (2nd ed., pp. 119-143). Thousand Oaks, CA: Sage.
- Greene, J. C., & McClintock, C. (1985). Triangulation in evaluation: Design and analysis issues. *Evaluation Review*, 9(5), 523-545. doi: 10.1177/0193841x8500900501
- Guba, E. G., & Lincoln, Y. S. (1988). Do inquiry paradigms imply inquiry methodologies? In D. M. Fetterman (Ed.), *Qualitative approaches to evaluation in education: The silent scientific revolution*. (pp. 89-115). New York, NY: Praeger Publishers.

- Gürtler, L., & Huber, G. L. (2006). The ambiguous use of language in the paradigms of QUAN and QUAL. *Qualitative Research in Psychology*, 3(4), 313-328. doi: 10.1177/1478088706070840
- Haight, W. L. (1997). Integrating 'quanta' and 'qualia' in the study of human development. *PsycCRITIQUES*, 42(11), 1029-1030. doi: 10.1037/001411
- Halling, S., Kunz, G., & Rowe, J. O. (1994). The contributions of dialogal psychology to phenomenological research. *Journal of Humanistic Psychology*, 34(1), 109-131. doi: 10.1177/00221678940341007
- Halling, S., & Leifer, M. (1991). The theory and practice of dialogal research. *Journal of Phenomenological Psychology*, 22(1), 1-15. doi: 10.1163/156916291x00019
- Hammersley, M. (1996). The relationship between qualitative and quantitative research: Paradigm loyalty versus methodological eclecticism. In J. T. E. Richardson (Ed.), *Handbook of qualitative research methods for psychology and the social sciences*. (pp. 159-174). Oxford, England: BPS Blackwell.
- Hanson, W. E., Creswell, J. W., Plano Clark, V. L., Petska, K. S., & Creswell, J. D. (2005). Mixed methods research designs in counseling psychology. *Journal of Counseling Psychology*, 52, 224-235. doi: 10.1037/0022-0167.52.2.224
- Harden, A., & Thomas, J. (2005). Methodological issues in combining diverse study types in systematic reviews. *International Journal of Social Research Methodology: Theory & Practice*, 8(3), 257-271. doi: 10.1080/13645570500155078
- Hayward, P., Peck, E., & Smith, H. (1993). Qualitative and quantitative approaches to needs assessment in mental health: Creating a common currency. *Journal of Mental Health*, 2(4), 287-294. doi: 10.3109/09638239309016963

- Heidegger, M. (1967). *Being and time* (J. Macquarrie & E. Robinson, Trans.). Oxford, England: Blackwell.
- Henderson, K. A., & Bedini, L. A. (1995). Notes on linking qualitative and quantitative data. *Therapeutic Recreation Journal*, 29(2), 124-130. doi: 10.1080/014904099273138
- Hesse-Biber, S. N., & Leavy, P. (2010). *Handbook of emergent methods*: Guilford Publications.
- Hill, C. E., & Lambert, M. J. (2004). Methodological issues in studying psychotherapy processes and outcomes. In M. J. Lambert (Ed.), *Bergin and Garfield's handbook of psychotherapy and behavior change* (5th ed., pp. 84-135). New York, NY: John Wiley & Sons.
- Hinds, P. S., & Young, K. J. (1987). A triangulation of methods and paradigms to study nurse-given wellness care. *Nursing Research*, 36(3), 195-198. doi: 10.1097/00006199-198705000-00025
- Hodgkin, S. (2008). Telling it all: A story of women's social capital using a mixed methods approach. *Journal of Mixed Methods Research*, 16, 441-454. doi: 10.1177/1558689808321641
- Hoshmand, L. T. (1989). Alternate research paradigms: A review and teaching proposal. *The Counseling Psychologist*, 17, 3-79. doi: 10.1177/0011000089171001
- Howe, K. R. (1988). Against the quantitative-qualitative incompatibility thesis or dogmas die hard. *Educational Researcher*, 17(8), 10. doi: 10.3102/0013189X017008010
- Howe, K. R. (1992). Getting over the quantitative-qualitative debate. *American Journal of Education*, 100(2), 236-256. doi: 10.1086/444015
- Ivankova, N., & Stick, S. (2007). Students' persistence in a distributed doctoral program in educational leadership in higher education: A mixed methods study. *Research in Higher Education*, 48(1), 93-135. doi: 10.1007/s11162-006-9025-4

- James, W. (1987). *Writings, 1902-1910*. New York, NY: Library of America.
- Johnson, R. B., & Onwuegbuzie, A. J. (2004). Mixed methods research: A research paradigm whose time has come. *Educational Researcher*, 33(7), 14-26. doi: 10.3102/0013189x033007014
- Johnstone, P. L. (2004). Mixed methods, mixed methodology health services research in practice. *Qualitative Health Research*, 14(2), 259-271. doi: 10.1177/1049732303260610
- Jones, E. (1987). Translation of quantitative measures for use in cross-cultural research. *Nursing Research*, 36(5), 324-327. doi: 10.1097/00006199-198709000-00017
- Kazdin, A. E. (2003). *Research design in clinical psychology* (4th ed.). Boston, MA: Allyn and Bacon.
- Kelle, U. (2006). Combining qualitative and quantitative methods in research practice: Purposes and advantages. *Qualitative Research in Psychology*, 3(4), 293-311. doi: 10.1177/1478088706070839
- Kelley, K. N. (2007). A textbook case for mixing methods. *PsycCRITIQUES*, 52(10). doi: 10.1037/a0006641
- Kuhn, T. S. (1962). *The structure of scientific revolutions*. Chicago, IL: University of Chicago Press.
- Kumar, S. P. (Ed.). (2010). *History of science and philosophy of science: A historical perspective of the evolution of ideas in science*. New Delhi, India: Pearson Education.
- Lambert, M. J., Garfield, S. L., & Bergin, A. E. (2004). Overview, trends, and future issues. In M. J. Lambert (Ed.), *Bergin and Garfield's handbook of psychotherapy and behavior change* (5th ed., pp. 805-821). New York, NY: John Wiley & Sons.

- Leech, N., & Onwuegbuzie, A. (2009). A typology of mixed methods research designs. *Quality & Quantity*, 43(2), 265-275. doi: 10.1007/s11135-007-9105-3
- Lévinas, E., & Nemo, P. (1985). *Ethics and infinity* (R. A. Cohen, Trans.). Pittsburgh, PA: Duquesne University Press.
- Lipson, J. G., & Meleis, A. I. (1989). Methodological issues in research with immigrants. *Medical Anthropology*, 12(1), 103-115. doi: 10.1080/01459740.1989.9966014
- Looker, E. D., Denton, M. A., & Davis, C. K. (1989). Bridging the gap: Incorporating qualitative data into quantitative analyses. *Social Science Research*, 18(4), 313-330. doi: 10.1016/0049-089X(89)90011-2
- Lund, T. (2005). The qualitative-quantitative distinction: Some comments. *Scandinavian Journal of Educational Research*, 49(2), 115-132. doi: 10.1080/00313830500048790
- Macmurray, J. (1998). *Persons in Relation*. Amherst, NY: Prometheus Books.
- Mark, M. M., & Shotland, R. L. (1987). *Multiple methods in program evaluation*. San Francisco, CA: Jossey-Bass.
- Martin, J., & Sugarman, J. (1999). *The psychology of human possibility and constraint*. Albany, NY: State University of New York Press.
- Mason, J. (2006). Mixing methods in a qualitatively driven way. *Qualitative Research*, 6(1), 9-25. doi: 10.1177/1468794106058866
- Maxwell, J. A., & Mittapalli, K. (2010). Realism as a stance for mixed methods research. In A. Tashakkori & C. Teddlie (Eds.), *Sage handbook of mixed methods in social & behavioral research* (2nd ed., pp. 145-167). Thousand Oaks, CA: Sage Publications.
- McGrath, J. E., & Johnson, B. A. (2003). Methodology makes meaning: How both qualitative and quantitative paradigms shape evidence and its interpretation. In P. M. Camic, J. E.

- Rhodes & L. Yardley (Eds.), *Qualitative research in psychology: Expanding perspectives in methodology and design*. (pp. 31). Washington, DC: American Psychological Association.
- McKeganey, N. (1995). Quantitative and qualitative research in the addictions: An unhelpful divide. *Addiction*, 90(6), 749-751. doi: 10.1111/j.1360-0443.1995.tb02214.x
- Mertens, D. M. (2009). *Research and evaluation in education and psychology: Integrating diversity with quantitative, qualitative, and mixed methods*. Thousand Oaks, CA: Sage Publications.
- Mertens, D. M., Bledsoe, K. L., Sullivan, M., & Wilson, W. (2010). Utilization of mixed methods for transformative purposes. In A. Tashakkori & C. Teddlie (Eds.), *Sage handbook of mixed methods in social & behavioral research* (2nd ed., pp. 193-214). Thousand Oaks, CA: Sage Publications.
- Michell, J. (2003). The quantitative imperative: Positivism, naïve realism and the place of qualitative methods in psychology. *Theory & Psychology*, 13, 5-31. doi: 10.1177/0959354303013001758
- Miller, G. A. (2003). The cognitive revolution: A historical perspective. *Trends in Cognitive Sciences*, 7(3), 141-144. doi: 10.1016/s1364-6613(03)00029-9
- Morgan, D. L. (1998). Practical strategies for combining qualitative and quantitative methods: Applications to health research. *Qualitative Health Research*, 8(3), 362-376. doi: 10.1177/104973239800800307
- Morgan, D. L. (2007). Paradigms lost and pragmatism regained. *Journal of Mixed Methods Research*, 1(1), 48-76. doi: 10.1177/2345678906292462

- Morse, J. M. (2005). Editorial: Qualitative research is not a modification of quantitative research. *Qualitative Health Research*, 15(8), 1003-1005. doi: 10.1177/1049732305280771
- Morse, J. M., Niehaus, L., Wolfe, R. R., & Wilkins, S. (2006). The role of the theoretical drive in maintaining validity in mixed-method research. *Qualitative Research in Psychology*, 3(4), 279-291. doi: 10.1177/1478088706070837
- Myers, K. K., & Oetzel, J. G. (2003). Exploring the dimensions of organizational assimilation: Creating and validating a measure. *Communication Quarterly*, 51(4), 438-457. doi: 10.1080/01463370309370166
- Norris, S. P. (1985). Synthesis of research on critical thinking. *Educational Leadership*, 42(8), 40-45.
- Ogborne, A. C. (1995). Unhelpful divide but important distinction. *Addiction*, 90(6), 755-757. doi: 10.1111/j.1360-0443.1995.tb02216.x
- Onwuegbuzie, A. J., & DaRos-Voseles, D. A. (2001). The role of cooperative learning in research methodology courses: A mixed-methods analysis. *Research in the Schools*, 8(1), 61-75.
- Onwuegbuzie, A. J., & Leech, N. L. (2005a). On becoming a pragmatic researcher: The importance of combining quantitative and qualitative research methodologies. *International Journal of Social Research Methodology: Theory & Practice*, 8(5), 375-387. doi: 10.1080/13645570500402447
- Onwuegbuzie, A. J., & Leech, N. L. (2005b). Taking the 'Q' out of research: Teaching research methodology courses without the divide between quantitative and qualitative paradigms. *Quality & Quantity: International Journal of Methodology*, 39(3), 267-296. doi: 10.1007/s11135-004-1670-0

- Ostenson, J. A. (2009). *Measuring relationships or measuring individuals: An ontological analysis of marital therapy outcome measures*. (Doctoral dissertation). Available from ProQuest Dissertations and Theses database. (AAT No. 3394997)
- Palmer, R. E. (1969). *Hermeneutics*. Evanston, IL: Northwestern University Press.
- Payne, G., Williams, M., & Chamberlain, S. (2005). Methodological pluralism, British sociology and the evidence-based state: A reply to May. *Sociology*, 39(3), 529-533. doi: 10.1177/0038038505053107
- Perlesz, A., & Lindsay, J. (2003). Methodological triangulation in researching families: Making sense of dissonant data. *International Journal of Social Research Methodology: Theory & Practice*, 6(1), 25-40.
- Pernice, R. (1996). Methodological issues in unemployment research: Quantitative and/or qualitative approaches? *Journal of Occupational and Organizational Psychology*, 69(4), 339-349.
- Phelan, A. M., & Garrison, J. W. (1994). Toward a gender-sensitive ideal of critical thinking: A feminist poetic. *Curriculum Inquiry*, 24(3), 255-268.
- Plano Clark, V. L., & Creswell, J. D. (July, 2011). *The practice of mixed methods research from a disciplinary-based perspective*. Paper presented at the 7th Mixed Methods International Conference, Leeds, UK. Abstract retrieved from: http://www.healthcareconferences.leeds.ac.uk/conferences/workshop_details.php?id=17
- Plano Clark, V. L., & Creswell, J. W. (2007). *The mixed methods reader*. Thousand Oaks, CA: Sage Publications.
- Plano Clark, V. L., & Creswell, J. W. (2009). *Understanding research: A consumer's guide*. Toronto, Canada: Pearson Education Canada.

- Plato. (1997). *Complete works*. Indianapolis, IN: Hackett Publishing.
- Plewis, I., & Mason, P. (2005). What works and why: Combining quantitative and qualitative approaches in large-scale evaluations. *International Journal of Social Research Methodology: Theory & Practice*, 8(3), 185-194. doi: 10.1080/13645570500154659
- Polkinghorne, D. E. (1983). *Methodology for the human sciences: Systems of inquiry*. Albany, NY: SUNY Press.
- Polkinghorne, D. E. (2004). *Practice and the human sciences: The case for a judgment-based practice of care*. Albany, NY: SUNY Press.
- Porpora, D. V. (2006). Methodological atheism, methodological agnosticism and religious experience. *Journal for the Theory of Social Behaviour*, 36(1), 57-75. doi: 10.1111/j.1468-5914.2006.00296.x
- Priola, V., Smith, J. L., & Armstrong, S. J. (2004). Group work and cognitive style: A discursive investigation. *Small Group Research*, 35(5), 565-595. doi: 10.1177/1046496404265143
- Quan-Haase, A. (2007). University students' local and distant social ties: Using and integrating modes of communication on campus. *Information, Communication & Society*, 10(5), 671-693.
- Rabinowitz, V. C., & Weseen, S. (1997). Elu(ci)d(at)ing epistemological impasses: Re-viewing the qualitative/quantitative debates in psychology. *Journal of Social Issues*, 53(4), 605-630.
- Raudenbush, S. W. (2005). Learning from attempts to improve schooling: The contribution of methodological diversity. *Educational Researcher*, 34(5), 25-31. doi: 10.3102/0013189x034005025

- Richards, P. S., & Bergin, A. E. (2005). *A theistic, spiritual view of science and research methods* (2nd ed.). Washington, DC: American Psychological Association.
- Richardson, F. C., Fowers, B. J., & Guignon, C. B. (1999). *Re-envisioning psychology: Moral dimensions of theory and practice*. San Francisco, CA: Jossey-Bass.
- Ricœur, P. (1981). *Hermeneutics and the human sciences: Essays on language, action, and interpretation* (J. B. Thompson, Trans.). New York, NY: Cambridge University Press.
- Robinson, D. N. (1995). *An intellectual history of psychology*. Madison, WI: University of Wisconsin Press.
- Rowe, J. O., Halling, S., Davies, E., Leifer, M., Powers, D., & van Bronkhorst, J. (1989). The psychology of forgiving another: A dialogal research approach. In R. S. Valle & S. Halling (Eds.), *Existential-phenomenological perspectives in psychology: Exploring the breadth of human experience*. (pp. 233-244): New York, NY: Plenum Press.
- Rychlak, J. F. (1981). *Introduction to personality and psychotherapy: A theory-construction approach*. Boston, MA: Houghton Mifflin.
- Sale, J. E. M., Lohfeld, L. H., & Brazil, K. (2002). Revisiting the quantitative-qualitative debate: Implications for mixed-methods research. *Quality & Quantity*, 36(1), 43-53. doi: 10.1023/a:1014301607592
- Sandelowski, M., Barroso, J., & Voils, C. I. (2007). Using qualitative metasummary to synthesize qualitative and quantitative descriptive findings. *Research in Nursing & Health*, 30(1), 99-111. doi: 10.1002/nur.20176
- Scott, P. J., & Briggs, J. S. (2009). A pragmatist argument for mixed methodology in medical informatics. *Journal of Mixed Methods Research*, 3(3), 223-241. doi: 10.1177/1558689809334209

- Sechrest, L., & Sidani, S. (1995). Quantitative and qualitative methods: Is there an alternative? *Evaluation and Program Planning, 18*(1), 77-87. doi: 10.1016/0149-7189(94)00051-X
- Shadish, W. R. (1995). Philosophy of science and the quantitative-qualitative debates: Thirteen common errors. *Evaluation and Program Planning, 18*(1), 63-75. doi: 10.1016/0149-7189(94)00050-8
- Shadish, W. R., Cook, T. D., & Campbell, D. T. (2002). *Experimental and quasi-experimental designs for generalized causal inference*. Boston, MA: Houghton, Mifflin and Company.
- Shah, S. K., & Corley, K. G. (2006). Building better theory by bridging the quantitative-qualitative divide. *Journal of Management Studies, 43*(8), 1821-1835. doi: 10.1111/j.1467-6486.2006.00662.x
- Shank, G. (2006). Six alternatives to mixed methods in qualitative research. *Qualitative Research in Psychology, 3*(4), 346-356. doi: 10.1177/1478088706070842
- Sherman, L. W., & Strang, H. (2004). Experimental ethnography: The marriage of qualitative and quantitative research. *Annals of the American Academy of Political and Social Science, 595*, 204-222.
- Simpson, R. G., & Eaves, R. C. (1985). Do we need more qualitative research or more good research? A reaction to Stainback and Stainback. *Exceptional Children, 51*(4), 325-329.
- Skinner, B. F. (1957). *Verbal behaviour*. London, England: Methuen.
- Slife, B. D. (1993). *Time and psychological explanation*. Albany, NY: SUNY Press.
- Slife, B. D. (2000). Are discourse communities incommensurable in a fragmented psychology?: The possibility of disciplinary coherence. *Journal of Mind & Behavior, 21*, 261-272.
- Slife, B. D. (2004a). Taking practice seriously: Toward a relational ontology. *Journal of Theoretical and Philosophical Psychology, 24*(2), 157-178. doi: 10.1037/h0091239

- Slife, B. D. (2004b). Theoretical challenges to therapy practice and research: The constraint of naturalism. In M. J. Lambert (Ed.), *Bergin and Garfield's handbook of psychotherapy and behavior change* (5th ed., pp. 44-83). New York, NY: John Wiley & Sons.
- Slife, B. D. (2011). *Taking sides: Clashing views on psychological Issues*. New York, NY: McGraw-Hill Companies, Inc.
- Slife, B. D., & Gantt, E. E. (1999). Methodological pluralism: A framework for psychotherapy research. *Journal of Clinical Psychology, 55*, 1453. doi: 10.1002/(SICI)1097-4679(199912)55:12<1453::AID-JCLP4>3.0.CO;2-C
- Slife, B. D., & Reber, J. S. (2009). Is there a pervasive implicit bias against theism in psychology? *Journal of Theoretical & Philosophical Psychology, 29*(2), 63-79. doi: 10.1037/a0016985
- Slife, B. D., & Reber, J. S. (in press). Conceptualizing religious practices in psychological research: Problems and prospects. *Pastoral Psychology*.
- Slife, B. D., Reber, J. S., & Richardson, F. C. (Eds.). (2005). *Critical thinking about psychology: Hidden assumptions and plausible alternatives*. Washington, DC: American Psychological Association.
- Slife, B. D., & Richardson, F. C. (2008). Problematic ontological underpinnings of positive psychology: A strong relational alternative. *Theory & Psychology, 18*(5), 699-723. doi: 10.1177/0959354308093403
- Slife, B. D., & Wendt, D. C. (2009). Recent calls for Jamesian pluralism in the natural and social sciences: Will psychology heed the call? *Journal of Mind & Behavior, 30*(3), 103-106.

- Slife, B. D., & Wiggins, B. J. (2009). Taking relationship seriously in psychotherapy: Radical relationality. *Journal of Contemporary Psychotherapy*, 39(1), 17-24. doi: 10.1007/s10879-008-9100-6
- Slife, B. D., & Williams, R. N. (1995). *What's behind the research?: Discovering hidden assumptions in the behavioral sciences*. Thousand Oaks, CA: Sage Publications.
- Slonim-Nevo, V., & Nevo, I. (2009). Conflicting findings in mixed methods research. *Journal of Mixed Methods Research*, 3(2), 109-128. doi: 10.1177/1558689808330621
- Smith, J. K., & Heshusius, L. (1986). Closing down the conversation: The end of the qualitative-quantitative debate among educational inquirers. *Educational Researcher*, 15(1), 4-12.
- Spackman, M. P., & Williams, R. N. (2001). The affiliation of methodology with ontology in a scientific psychology. *The Journal of Mind and Behavior*, 22, 389-406.
- Stainback, S., & Stainback, W. (1985). Quantitative and qualitative methodologies: Competitive or complementary? A response to Simpson and Eaves. *Exceptional Children*, 51(4), 330-334.
- Stam, H. J. (2006). Pythagoreanism, meaning and the appeal to number. *New Ideas in Psychology*, 24(3), 240-251. doi: 10.1016/j.newideapsych.2006.10.002
- Stange, K. C., Crabtree, B. F., & Miller, W. L. (2006). Editorial: Publishing multimethod research. *Annals of Family Medicine*, 4(4), 292-294. doi: 10.1370/afm.615
- Steckler, A., McLeroy, K. R., Goodman, R. M., & Bird, S. T. (1992). Toward integrating qualitative and quantitative methods: An introduction. *Health Education Quarterly*, 19(1), 1-8. doi: 10.1177/109019819201900101
- Stiles, W. B. (2006). Numbers can be enriching. *New Ideas in Psychology*, 24(3), 252-262. doi: 10.1016/j.newideapsych.2006.10.003

- Stiles, W. B., Hurst, R. M., Nelson-Gray, R., Hill, C. E., Greenberg, L. S., Watson, J. C., et al. (2006). What qualifies as research on which to judge effective practice? In J. C. Norcross, L. E. Beutler & R. F. Levant (Eds.), *Evidence-based practices in mental health: Debate and dialogue on the fundamental questions*. (pp. 56-130). Washington, DC, US: American Psychological Association.
- Sugarman, J., & Martin, J. (2005). Toward an alternative psychology. In B. D. Slife, J. S. Reber & F. C. Richardson (Eds.), *Critical thinking about psychology: Hidden assumptions and plausible alternatives*. (pp. 251-266). Washington, DC: American Psychological Association.
- Sullivan, M. L. (1998). Integrating qualitative and quantitative methods in the study of developmental psychopathology in context. *Development and Psychopathology*, 10(2), 377-393.
- Tashakkori, A., & Teddlie, C. (2003). *Handbook of mixed methods in social and behavioral research*. Thousand Oaks, CA: Sage Publications.
- Taylor, S. G., Kluemper, D. H., & Mossholder, K. W. (2010). Linking personality to interpersonal citizenship behaviour: The moderating effect of empathy. *Journal of Occupational and Organizational Psychology*, 83(4), 815-834. doi: 10.1348/096317909x475794
- Teddlie, C., & Tashakkori, A. (2003). Major issues and controversies in the use of mixed methods in the social and behavioral sciences. In C. Teddlie & A. Tashakkori (Eds.), *Handbook of mixed methods in social & behavioral research* (1st ed., pp. 3-50). Thousand Oaks, CA: Sage.

- Teddlie, C., & Tashakkori, A. (2009). *Foundations of mixed methods research: Integrating quantitative and qualitative approaches in the social and behavioral sciences*. Thousand Oaks, CA: Sage Publications.
- Teddlie, C., & Yu, F. (2007). Mixed methods sampling: A typology with examples. *Journal of Mixed Methods Research, 1*(1), 77-100. doi: 10.1177/2345678906292430
- Vitale, D. C., Armenakis, A. A., & Feild, H. S. (2008). Integrating qualitative and quantitative methods for organizational diagnosis. *Journal of Mixed Methods Research, 2*(1), 87-105. doi: 10.1177/1558689807309968
- Waller, R., & Gilbody, S. (2009). Barriers to the uptake of computerized cognitive behavioural therapy: A systematic review of the quantitative and qualitative evidence. *Psychological Medicine: A Journal of Research in Psychiatry and the Allied Sciences, 39*(5), 705-712. doi: 10.1017/s0033291708004224
- Webb, E. J. (1966). *Unobtrusive measures: Nonreactive research in the social sciences*. Chicago: Rand McNally.
- Wendt, D. C., Jr., & Slife, B. D. (2007). Is evidence-based practice diverse enough? Philosophy of science considerations. *American Psychologist, 62*(6), 613-614. doi: 10.1037/0003-066X62.6.613
- Wheeldon, J. (2010). Mapping mixed methods research: Methods, measures, and meaning. *Journal of Mixed Methods Research, 4*(2), 87-102. doi: 10.1177/1558689809358755
- Wiggins, S., & Forrest, S. (2005). Integrating quantitative and qualitative approaches in psychology research methods teaching: The example of a classroom debate. *Psychology Learning & Teaching, 4*(2), 90-94.

- Williams, R. N. (2005). The language and methods of science: Common assumptions and uncommon conclusions. In B. D. Slife, J. S. Reber & F. C. Richardson (Eds.), *Critical thinking about psychology: Hidden assumptions and plausible alternatives*. (pp. 235-249). Washington, DC: American Psychological Association.
- Wittink, M. N., Barg, F. K., & Gallo, J. J. (2006). Unwritten rules of talking to doctors about depression: Integrating qualitative and quantitative methods. *Annals of Family Medicine*, 4(4), 302-309. doi: 10.1370/afm.558
- Woolley, C. M. (2009). Meeting the mixed methods challenge of integration in a sociological study of structure and agency. *Journal of Mixed Methods Research*, 3(1), 7-25. doi: 10.1177/1558689808325774
- Yanchar, S. C. (1997). William James and the challenge of methodological pluralism. *Journal of Mind and Behavior*, 18(4), 425-442.
- Yanchar, S. C. (2005). A contextualist alternative to cognitive psychology. In B. D. Slife, J. S. Reber & F. C. Richardson (Eds.), *Critical thinking about psychology: Hidden assumptions and plausible alternatives*. (pp. 171-186). Washington, DC: American Psychological Association.
- Yanchar, S. C., Gantt, E. E., & Clay, S. L. (2005). On the nature of a critical methodology. *Theory & Psychology*, 15(1), 27-50. doi: 10.1177/0959354305049743
- Yanchar, S. C., & Slife, B. D. (2004). Teaching critical thinking by examining assumptions. *Teaching of Psychology*, 31(2), 85-90. doi: 10.1207/s15328023top3102_2
- Yanchar, S. C., & Williams, D. D. (2006). Reconsidering the compatibility thesis and eclecticism: Five proposed guidelines for method use. *Educational Researcher*, 35(9), 3-12. doi: 10.3102/0013189X035009003