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THE ROLE OF PARADIGMS IN RESEARCH DESIGN

CHAPTER OUTLINE

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I commonly hear people repeat what is apparently a widespread adage:

> *You don't begin research design by deciding whether to do quantitative or qualitative research. You ask a research question and then employ the research methods that will answer your question.*

While I agree with this statement, I contend that it is misleading. Research design doesn't begin with the question. I propose that research design begins with your worldview, your paradigm. This is why I identify paradigm as the first component of the Anatomy. I commonly ask my doctoral students, why do we conduct research? I receive several answers. Some say to learn new information, or gain new insights, or contribute to current conceptions. I echo Lincoln and Guba (1985a) and argue that we conduct research to grapple with truth and to make sense of reality. Your beliefs about truth and reality formulate your paradigm.

    Throughout this book, I argue that you will be empowered to make informed research design decisions when you make your tacit assumptions explicit. This is true of your paradigm, theoretical perspectives, research

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traditions, data collection and analysis methods, and the genre of your research report. When you make the tacit explicit, you are empowered to recognize how your work aligns with other researchers. We all want to believe we are inventing the wheel. We like to think, no one has been so clever as to ask the questions we ask, use the methods we use, and write the report that we write. I hope your work is significant and changes the world. I propose that one strategy for designing impactful research is to unpack your assumptions, compare them with the assumptions made by others, and explicate how your work moves current assumptions forward. In so doing, you can compare your work to the work that has already been done. You are empowered to discuss the significance of your work. When you leave your assumptions implied you set yourself up for drowning in a sea of insights that make it difficult to articulate their significance.

Begin your research design by recognizing your basic paradigmatic assumptions. You ask the questions that you ask because of your view of reality. Whether you are aware of it or not, your research questions emanate from your paradigm. Because research design doesn't begin with your question but with your view of reality, I begin the exploration of the Anatomy and structure the sample question with a brief explication of research paradigms.

INTRODUCTION TO PARADIGMS

Hatch (2002) described research paradigms as the confluence of ontology, epistemology, **methodology** (the philosophy and corresponding methods used to conduct a study), and report genre (see Appendix B). The categorization of paradigms differs across theorists and remains organic and fluid. For example, in 1994 Guba and Lincoln described four paradigms: positivism, post-positivism, critical, and constructivism. In 2005, they added participatory as a paradigm (Lincoln & Guba). Denzin and Lincoln (2005) described four paradigms: positivism, postpositivism, constructivism-interpretivism, and critical. By 2018, Denzin and Lincoln parsed five paradigms: positivist/postpositivist, critical, feminist, constructivist/interpretivist, and participatory/postmodern/poststructural. Others echo positivism, postpositivism, and constructivism and then elaborate on transformative, emancipatory, postcolonial, and indigenous paradigms (Chilisa, 2011). Yet others describe positivism, postpositivism, constructivism, and critical while including pragmatism (Morgan, 2014). Regardless of how you slice and label the pie, or even believe the pie exists, your paradigm influences what research questions you deem to be worth asking. For the purposes of this book, I will slice and label the paradigm pie by highlighting positivism, postpositivism, critical, constructivism, and poststructuralism (see Table 2.1).

TABLE 2.1 ■ Paradigms: Considerations, Historical Roots, and Related Scholars			
Paradigms	**Considerations**	**Historical Roots**	**Related Scholars**
Positivism	Reality exists regardless of human experience; systematic methods can reveal reality; the researcher and researched can be isolated; findings are generalizable	Natural Sciences Psychology Scientific Method Sociology	Comte Durkheim Pavlov Skinner Watson
Postpositivism	Reality is expansive; systematic analyses facilitate the ability to make estimations of reality; the researcher and researched cannot be isolated therefore researcher bias must be acknowledged; findings are contextual and therefore not generalizable but may be transferable	Philosophy Social Sciences Sociology	Kuhn Popper
Constructivism	Reality is ascribed by the human experience; reality is individually invented while socially negotiated	Education Hermeneutics Linguistics Philosophy Postmodernism Cognitive Psychology Sociology	Bakhtin Husserl Piaget Ernst von Glasersfeld Vygotsky
Critical	Reality is power; existence is political; research is an emancipatory act that demands change	Humanities Liberation Theology Literary Criticism Social Sciences	Baudrillard Chomsky Foucault Freire Horkheimer Marx
Poststructural	Reality is plural and fluid; reality may be	Linguistics Literary Theory	Barthes Deleuze

(Continued)

TABLE 2.1 ■ Paradigms: Considerations, Historical Roots, and Related Scholars (Continued)			
Paradigms	**Considerations**	**Historical Roots**	**Related Scholars**
	chaotic and illogical; concepts of reality must be interrogated for reification and binaries; at its core, knowledge is limited and instable	Philosophy Sociology	Derrida Eco Kristeva Lyotard

Note: Table 2.1 provides a mere gist of paradigms and is in danger of misrepresenting these expansive concepts. Across and within paradigms, there is a range of considerations, historical roots, and scholars. To deepen your understanding, be sure to delve into the intricacies across and within paradigms.

Identifying your paradigmatic assumptions will help you articulate your research questions. Instead of starting your research design with your question, I encourage you to begin with unpacking your paradigmatic assumptions. Table 2.1 provides some general distinctions. However, I want to point out that these distinctions are simplistic and should be valued accordingly. When you dig deeper into paradigmatic assumptions, you will find "blurred" (Geertz, 1993; Lincoln & Guba, 2005) rather than clearly boxed considerations.

In a basic sense, ontology is the philosophy of existence. Consider Descartes' (1637) argument for reality, *I think therefore I am*, as an example of an ontological statement. Your ontological assumptions will influence what questions you consider to be worth asking. For positivists, existence is external to human beliefs, waiting to be discovered. Research can be designed to isolate variables and examine existence. Nonpositivists view existence as a flexible reality. Some contend existence is too expansive to grasp (postpositivism), created by those who experience it (constructivism), centered on power (critical), as well as reified and therefore conceptualizations of existence are questionable (poststructuralism).

Similarly, your epistemological assumptions inform your research questions. In brief, epistemology is the philosophy of the existence of knowledge. Positivism views knowledge as preexistent and independent of knowers. Postpositivism acknowledges that the researcher and the researched are inseparable therefore bias can and must be acknowledged. In my field of education, the 1990s constructivist revolution epitomized epistemological enlightenment (e.g., Steffe & Gale, 1995). Constructivists helped my field to

examine the epistemological assumptions made in education. How does knowledge exist? Constructivists argued, knowledge is formulated by the knower. Critical epistemologies contend that knowledge exists as power. Research is therefore an emancipatory act that inherently requires change. Poststructuralists question assumptions made about the existence of knowledge and posit that knowledge as known is questionable.

Paradigms are similar to religious views in this sense: they do not change for the sake of a study. Paradigms are deeply held convictions that explain reality. You change paradigms with the regularity you change religions (i.e., not very often). It is possible to change paradigms—but it is a life-changing event. I propose that you have paradigmatic views of reality—whether you know it or not. With the warning that the paradigm descriptions I provide merely scratch the surface, I pose the following considerations to assist you in your pursuit of understanding your own paradigmatic assumptions. Do you believe reality exists—regardless of whether humans ever walked the earth? You might be a positivist. Do you believe reality exists—but is so inconceivably expansive that we can only make sense of our immediate realities? You might be a postpositivist. Do you believe reality is subjective because it is individually invented while socially negotiated? You might be a constructivist. Do you believe that the essence of reality is power and the purpose of research is to enact change? You might be a criticalist. Do you believe that concepts of reality are reified and questionable? (In fact, the notion of paradigms rubs you wrong.) You might be a poststructuralist. Examining your paradigmatic assumptions will help you hone your research question. Begin research design by asking questions that examine reality. You will likely find research that asks questions aligned to your paradigm ring true while those misaligned ring hollow. Ask research questions that help you make sense of reality by first identifying and understanding your paradigmatic assumptions about reality.

If you tend to ask cause/effect/impact questions, you might be a positivist. On the other hand, if you are a nonpositivist but find yourself asking cause/effect/impact questions, you need to consider ways to rephrase your question. I find that many novice researchers commonly ask cause/effect/impact questions but do not see their ontological or epistemological beliefs represented in positivism. I wonder if our culture, steeped in the scientific method, influences us to consider reality in cause/effect/impact terms. Maybe you are a positivist and cause/effect/impact questions are meaningful to you. That's great! You can formulate a corresponding research design. However, if you are a nonpositivist, peruse the literature in your field and find varied ways to formulate research questions that grapple with nonpositivistic realities.

Otherwise, you may ask research questions that precipitate research methods and findings that you find vapid.

RESEARCH DESIGN AND THE ROLE OF PARADIGMS

Finding My Paradigm: Process of Elimination

To demonstrate how you might think through your own paradigm, I return to the sample question,

> *Given a postpositivist paradigm, what is the nature of literacy in a technology-rich fourth-grade classroom from a sociocultural perspective using ethnographic research methods?*

In order to articulate my dissertation question, I examined my paradigmatic assumptions. Some of this discovery was a process of elimination. I knew that I was not a positivist. While positivism may make sense in the natural sciences, I could not reconcile it with social sciences. Before becoming a professor, I was a classroom teacher who was required to implement end-of-year standardized state-wide tests that were derived from positivistic views of reality. I viewed these assessments as disingenuous and invalid. My reaction to standardized state tests was a good indication that I was not a positivist.

During my graduate studies, constructivism was all the rage. I wanted to fit in but eventually recognized that paradigmatically I am a postpositivist. A tenet of constructivism is that reality is ascribed by the human experience. However, I believe that reality may exist apart from human existence. I therefore continued to examine my own paradigmatic assumptions. A tenet of the critical paradigm is that reality is power. I am so thankful that critical theorists exist as I am in constant need to interrogate my own reification of empowerment and disempowerment. While I value the insights and challenges provided by my critical colleagues, I do not walk into a room and view the situation in terms of who is empowered and disempowered. Thus, I recognized that I am not paradigmatically critical. Similarly, I value the insights provided by my poststructuralist colleagues. I especially value being challenged to question binaries. Nonetheless, this is not my gut ontological or epistemological orientation. Whether I like it or not, I currently view reality as a postpositivist who sees ontology and epistemology as complicated, complex, beyond human purveyance while possibly existing without humanity.

Paradigmatic Implications: Recapitulating a Sample Question

My paradigm has implications for what I view as viable strategies for making sense of reality—my research methods. For example, as a post-positivist, I am interested in the interconnectedness of reality and therefore cannot claim to separate my role in data collection and analysis from the setting (positivism) but must systematically account for my role as well as articulate my assumptions/biases. My data collection and analyses are systematic so I can attempt to make estimations of reality. Because I believe that reality is not generalizable (positivism) but may be transferable, I collect data in natural settings and attempt to provide thick descriptions of these settings so that my readers can transfer insights to their own settings.

To help you explore paradigms and consider implications for your study, I recapitulate my dissertation question according to varied paradigms. These are simplistic, rudimentary, broad stroke recapitulations intended to help you consider the implications of paradigms when you formulate research questions. These are mere possibilities. I begin with positivism. How might a positivist rephrase the sample research question? A positivist believes that reality exists regardless of human experience and the researcher and researched can be isolated. As such, reality is best ascertained by isolating and measuring variables. If I were a positivist, I might ask,

> Given a positivist paradigm, what impact does word processing have on fourth-graders' organization of paragraphs from a behavioral perspective using TOWE (Test of Written Expression)?

The paradigmatic shift has implications for all parts of the question (see Table 2.2). The topic shifts from the *nature of literacy* to the *impact of word processing* on a variable (e.g., organization of paragraphs) that can be measured using psychometrics that have established validity and reliability (e.g., TOWE). As posed, the setting can be anywhere the participants can take the TOWE test. The focus of this study would be on pre–post measures, not on the social norms of a classroom. In fact, the way this question is framed, word processing may not occur in a classroom setting. To conduct this study, I would need to set the parameters for what is meant by word processing (e.g., 20-minutes 3 days/week for 3 months in a project lab, other) and those who meet the parameters would be viable participants. Sociocultural theory provides few insights into the results of the *TOWE* test. Therefore, other perspective(s) are needed to interpret the findings. In this case, I chose to ground my interpretation of results in behaviorism.

TABLE 2.2 ■ Sample Question: Exploring Paradigmatic Implications

	Postpositivism	Positivism	Constructivism	Critical	Poststructural
Interrogative	What	What	How	Who	What
Topic	Nature of literacy	Impact on paragraph organization	Make meaning of and with digital texts	Empowered to communicate	Binaries
Setting	Technology-rich fourth-grade classroom	Location where test can be given	Technology-rich fourth-grade classroom	Technology-rich fourth-grade classroom	Concepts of the nature of literacy
Tradition	Ethnography	Quantitative, *TOWE* pre–post test	Case study	Case study	Metatheory
Perspective	Sociocultural	Behavioral	Social learning theory	Feminist Theory	Deconstructive

A constructivist might believe, among other tenets, that reality is ascribed by the human experience and created by those who experience it, and knowledge is formulated by the knower. This view of reality has implications for how the sample question would be formulated. If I were a constructivist, I might ask,

> *Given a constructivist paradigm, how do fourth-graders in a technology-rich classroom make meaning of and with digital texts from a social learning theory perspective using case study methods?*

The topic shifts from the *nature of literacy* to *how meaning is made*. In other words, the postpositivist's study identifies *characteristics of literacy* while the constructivist's study examines the *process of making meaning*. Both may conduct their studies in a technology-rich fourth-grade classroom. Sociocultural theory may help the constructivist understand the findings but in this case I chose to leverage social learning theory.

A critical researcher views reality in terms of power, life as inherently political, and that the purpose of research is emancipatory. The sample research question may become,

> *Given a critical paradigm, who is dis/empowered to communicate in a technology-rich fourth-grade classroom from a feminist perspective using case study methods?*

The focus shifts from the *nature of literacy* to *dis/empowerment*. The setting may remain the same but the perspective will likely shift to theories that help the researcher examine dis/empowerment. In this case, I specified feminist theory. The findings will be used to exact change to current cultural practices. The research tradition, ethnography, might remain the same but case study may allow increased flexibility to focus on dis/empowerment.

A poststructuralist believes that reality is plural and fluid, it may be chaotic and illogical and concepts of reality must be interrogated for reification and binaries. The sample research question might become,

> *Given a poststructuralist paradigm, what binaries constitute the nature of literacy in a technology-rich fourth-grade classroom from a deconstructive perspective using metatheory?*

It is a reach to rephrase the sample question as a poststructuralist because a poststructuralist may reject the notion of a research question and the structure

of a research tradition. The notion of paradigms may be deemed as an example of paradigmatic fallacy. Rephrasing the sample question in post-structural terms may be questionable because doing so maintains previously held structural views of reality. Nonetheless, for the sake of juxtaposition, I pose that the focus of a poststructural study might interrogate binaries leveraged in literacy studies (e.g., read and write, decode and encode, printed text and digital text). The setting might remain the same but the focus might question previously held concepts of literacy. Sociocultural theory would provide few insights while deconstructive theories might be useful. Systematic data collection and analysis may reify illusions of reality. Using metatheory, the goal would be to examine previously held conceptions of the nature of literacy.

Proposals and Reports: Placement of Paradigm

When you write a proposal or research report, you will likely discuss your paradigm in the opening paragraph/section of your methodology—not to be confused with your related literature (see Table 5.2 and Table 5.3). Use your paradigmatic assumptions as the framework for your methodological ratio-nale. When reviewers (e.g., doctoral committee members, journal articles, funding agencies) determine the quality of a study, they commonly examine whether the paradigmatic assumptions are a good fit with the research methods. If you are a positivist but fail to isolate variables, your research design may be questionable. If you are a constructivist but collect pre and post data without accounting for how *being* and *knowledge* were ascribed by the participants, your research design may be questionable. If you are a critical theorist but describe phenomena as if they are void of power and lack requisite emancipatory actions, your research design may be questionable. Take the time to examine your paradigmatic assumptions. Such efforts allow you to pursue your understanding of ontology and epistemology in meth-odologically viable ways.

UNVEIL YOUR PARADIGMATIC ASSUMPTIONS: ASK RESEARCH QUESTIONS

Novice and experienced researchers wrestle with understanding their para-digmatic views of reality. I want to point out the reflexive relationship between paradigmatic worldviews and research questions. I find that asking questions can help you examine your paradigmatic assumptions. In other words, I do not want to imply that you must grasp your paradigm before you

start asking questions. In fact, asking questions may help to unveil your paradigm. I encourage you to purposely frame your question from different paradigms. How would you ask your question if you were a positivist? postpositivist? constructivist? criticalist? poststructuralist? other? A challenge you may encounter is that when you read research reports, the paradigm is often implied and not explicitly stated. It can be difficult, therefore, to gather sample research questions according to paradigm so you can make comparisons. Whether stated or not, all questions are rooted in paradigmatic assumptions. Select some of the seminal studies in your field and see if you can determine the paradigmatic assumptions that are inherent to the questions they pose. Do you esteem some research over other research? Maybe you share paradigmatic assumptions with the researchers who conducted the study.

CHAPTER SUMMARY

When using the Anatomy to formulate a research question, begin with an explicit statement of your paradigm (worldview). Research questions are inherently derived from paradigmatic assumptions. You can waste time, energy, and resources if you ignore your own paradigmatic worldview. Take the time to begin or refine your foray into paradigms. Identify and discuss the paradigmatic assumptions embedded in 3–5 seminal studies in your field. Reformulate your own research question based on varied paradigmatic assumptions. Understanding your paradigm will empower you to articulate and refine your research question. Recapitulating your question situated within different paradigms may help you realize your beliefs about reality. We conduct research to make sense of reality. To avoid vapid research, formulate research questions and conduct studies that help you make sense of reality.

SUGGESTED ACTIVITIES AND DISCUSSIONS

1. Formulate a simple question (e.g., what do I want for dinner?) and attempt to reformulate the question according to paradigm. How would a positivist ask about dinner? postpositivist? constructivist? criticalist? poststructuralist?
2. Select seminal research reports in your field. Can you ascertain the paradigmatic assumptions inherent to the overarching research question? Discuss why you assign varied paradigms to a range of studies.
3. Given the propensity of our culture to ask cause/effect/impact questions, which assumes a positivist paradigm, can you translate some cause/effect/impact questions into nonpositivistic language? For example, how would you translate

this question across paradigms: What is the impact of social media on parental interactions with their children?

4. I find that Social Science doctoral students commonly appreciate the opportunity to examine pragmatism as a paradigm. The essence of pragmatism is to consider "what works." If this consideration resonates with you, one way to begin this exploration is to read and discuss Morgan (2014).

SUGGESTED READINGS

Hatch, J. A. (2002). Deciding to do a qualitative study. In *Doing qualitative research in education settings* (pp. 1–35). Albany, NY: State University of New York Press.

Kivunja, C., & Kuyini, A. B. (2017). Understanding and applying research paradigms in educational contexts. *International Journal of Higher Education*, 6(5), 26–41.

Lincoln, Y. S., Lynham, S. A., & Guba, E. G. (2018). Paradigmatic controversies, contradictions, and emerging confluences, revisited. In N. K. Denzin, & Y. S. Lincoln (Eds.), *The Sage handbook of qualitative research* (5th ed., pp. 108–150). Thousand Oaks, CA: SAGE.

Morgan, D. L. (2014). Pragmatism as a paradigm for social research. *Qualitative Inquiry*, 20(8), 1045–1053. doi: 10.1177/1077800413513733

Williams, J. (2014). *Understanding poststructuralism*. New York, NY: Routledge.