In Chapter 1, we argued that any researcher’s choice of a particular research design is necessarily framed by the researcher’s own assumptions about both the nature of reality and how one can come to apprehend it. We have used the term system of inquiry to describe these sets of assumptions; another term that is frequently used to describe such assumptions is paradigm. Both terms convey the notion of a worldview, the ultimate truthfulness of which cannot be established.

For example, in a study by Stazi et al., the authors present an analysis of solar walls for residential buildings in a Mediterranean climate. The authors’ purpose is to investigate how energy savings might be achieved for both winter heating and summer cooling, given that undesired heat gains are especially problematic in climates characterized by hot summers. More specifically, they aim to evaluate the performance of specific solar wall designs through a combination of experimental testing, and subsequent simulation modeling to extend the results by changing the building envelope insulation level (see Figure 3.1). They introduce the details of their research study this way:

Solar wall is a passive solar system . . . generally made up of south-facing concrete wall painted black on the external surface, an air layer and glazing on the exterior side. Shading devices such as overhangs or movable shutters provide solar radiation control. . . . Trombe wall is a solar wall equipped with vents at the top and the bottom for air-thermo circulation; external dampers provide
In this short excerpt, it is clear that the authors have conducted their research within a system of inquiry that assumes the physical reality of objects, whose properties can be accurately specified, their performance measured by calibrated instruments, and the outcomes compared in quantifiable terms. In other words, there is a reality “out there” that we can know and define systematically.

Next is the example of Benyamin Schwarz’s study of the design process in the development of nursing homes, examined through three case study projects (see Figure 3.2). The ontological assumptions that frame his research are stated this way:

[T]his inquiry . . . [allowed] access to inherent complexity of social reality. . . . A design process cannot be regarded as a world made up of totally objectified elements and observable, measurable facts. Therefore, an effort was made to avoid simplification of the social phenomena of the design process.6

Schwarz’s commentary reflects his assumption that reality is nuanced by the complexity of social relations, this in contrast to the objectively measured reality as posited by Stazi et al.

Third, and last, is the example of an essay by Jennifer Bloomer titled, “The Matter of Matter: A Longing for Gravity.” Bloomer’s aim is to “reconsider the notion of longing and more particularly, the place of nostalgia, homesickness, the longing
for home, in contemporary Western architecture.” She does so by exposing contrasting impulses implicit in our experience of architecture’s matter and form. For instance, she argues that on the one hand, nostalgia in contemporary architectural discourse is “a universal genius of new town planning and architectural style.” Yet, “on the other hand, nostalgia is covered in refusal. . . . [T]he repression of nostalgia is at the core of the project of modernity.” She then goes on to employ a series of poetic evocations of domestic space that reflect these contradictory impulses.

In contrast to the objective assessment of physical components represented by Stazi et al.’s study of solar walls and Schwarz’s emphasis on the social dynamics of design process, Bloomer’s exploration of nostalgia is based largely on the author’s poetic evocation of her own experiences of longing and domestic space.

These three examples clearly demonstrate the great variety of paradigms—or systems of inquiry—within which architectural research is typically conducted. Although Schwarz chose to be quite explicit about the systems of inquiry underlying his particular study, it is far more often the case that researchers are relatively less explicit about their study’s ontological assumptions (e.g., Stazi et al. and Bloomer, at least within the works cited). While the experienced researcher is likely to be able to infer the paradigmatic frame of a given study, less experienced readers may be left wondering or confused about why the study was conceived and conducted in a particular way.

Thus, the goals of this chapter are twofold: (1) to provide a conceptual framework for understanding the range of paradigms commonly employed in architectural
research; and (2) to clarify the way in which standards for evaluating research quality are substantially dependent on the system of inquiry employed by the researcher.

Why is this important? There are multiple and complementary reasons, dependent to a large extent on the context in which the researcher is situated. For instance, although students in research-focused programs (whether doctoral or MSc) and faculty scholars are likely to be working within a disciplinary subgroup in which broad conceptual frameworks common to that subgroup are well recognized, the researcher may also be tackling a research question of interest to a broader audience. So, clarifying underlying assumptions and quality standards that apply to their work may be essential for the work to reach its broadest audience. Second, whether the researcher is following existing practices of inquiry in his/her subfield or challenging those very practices through the use of atypical research designs and practices, the overall quality of the research is likely to be improved if the researcher is clear-headed about the choices taken.

However, students in professional programs in architecture and design disciplines, or professionals in practice, are likely to engage in research of a more exploratory or episodic quality. In this case, maintaining an overarching conceptual framework across the entire project may be less applicable. Nevertheless, for students, there is an essential opportunity to become familiar with how the underlying premises of the research traditions they may be encouraged to employ are situated within the overall context of research practices. Meanwhile, for practitioners, it is likely that their need to engage in research will vary considerably by project, with the depth and effort involved varying across different phases of a given project. For relatively routine projects, there may be little or no research; for complex and unique projects, there may be a number of research episodes throughout the project. Because the nature of the research may be so varied, it is all the more important for practitioners to have a sense of the many ways given strategies and tactics—perhaps interviews, or the simulation of environments—can be conceptualized and rendered suitable for different purposes.

3.2 FRAMEWORKS FOR UNDERSTANDING MULTIPLE SYSTEMS OF INQUIRY

Because the practice of architecture requires knowledge of a vast array of phenomena—from the physical properties of materials to principles of visual perception—it is hardly surprising that the research subdisciplines within architecture bring with them a full range of paradigms. Indeed, this is also the case within entire disciplinary families—for example, within the sciences, the social sciences, or the humanities. From the perspective of someone in the humanities, “science”
may seem to represent a rather monolithic system of inquiry within which a highly standardized set of procedures is adopted; from a scientist’s point of view, though, there are vast differences between scientific disciplines with respect to the typical methods employed and their standards for the credibility of evidence. As a consequence, many scholars of research methodology from a variety of disciplines have developed models or frameworks for clarifying the similarities and differences among systems of inquiry.

In the following subsections, we will briefly review several of these frameworks, and then introduce a framework for distinguishing among systems of inquiry that we will utilize throughout the remainder of this book.

In the second portion of this chapter, we will then review standards of research quality articulated through the complementary relationship between systems of inquiry and schools of thought.

### 3.2.1 Early Frameworks in Architectural Research

In 1984, during the early years of the emergent development of architectural research in the academy, Joroff and Morse sought to review the range and scope of architectural research and provide an integrative framework for clarifying the types or forms of that research. This framework identifies what the authors deem to represent the full range of architectural research areas at the time, organized in a scalar order based on the degree of “systematization” that characterizes the different types of research. This effort is diagrammed as a 9-point continuum, from informal observation on the one hand to laboratory research on the other (see Figure 3.3). In clarifying this concept, the authors suggest that systematization entails two basic ideas: (1) the idea that there is a reality “out there”; and (2) the assumption that to know this reality requires “objective” methods.

Within this conceptual framework, the left side of the model represents a more “subjective” system of inquiry, and the right side the more “objective” system of

![Figure 3.3](image-url)  
*Figure 3.3* Michael Joroff and Stanley Morse’s conceptual framework for architectural research. By permission of Michael L. Joroff.
inquiry. Although they introduce the framework as “an overall integrating context for divergent research efforts,” they also propose that such a framework is needed “to distinguish research from other activities in which architects may engage.” Indeed, in discussing the examples from the left side of the scale, Joroff and Morse invoke a variety of qualifiers and cautions, none of which are applied to the more objective and systematic examples on the right. For example, they write that when architects review precedents during the design process, “it is an assessment of knowledge gained by others rather than research in the strict definition of the term.” Moreover, by equating research with the term systematic, and systematic with the belief that there is a reality “out there,” they are essentially arguing that “real” research exists only at the objective end of the scale.

A second problematic feature of Joroff and Morse’s proposed continuum is that the research types identified on the continuum are hardly comparable, and are in effect a mix of “apples and oranges.” For instance, the term laboratory-type research invokes an experimental model and shares a place on the continuum with a kind of theory (normative, but what of other theory types?), and observations (a possible data collection tactic). Nevertheless, Joroff and Morse’s continuum represents a historically significant effort to identify and validate the potential value and contributions of a multifaceted body of architectural research.

Several years later, in a 1990 Journal of Architectural Education article, Julia Robinson characterized the then current state of architecture research as one in which a dichotomous set of paradigms predominated. (Even now, the circumstances she describes are not so very different.) While the stated goal of her article was to offer a means of resolving this dichotomy into a more integrated framework for architectural research, she nevertheless characterized the then current state of architectural research as represented by two rather distinct communities of architectural researchers whose ideas “of acceptable explanation do not necessarily coincide.”

The terms by which she chooses to describe these two systems of inquiry are science and myth. Although both science and myth “are used to explain,” the way they do so is quite different. A scientific explanation is typically portrayed as a mathematical description made up of linked fragments; it is thereby atomistic, reductionist, and convergent. Architectural research on topics of technology, engineering, or behavioral issues are seen as representing the scientific paradigm. However, mythic or poetic description is seen as continuous, holistic, divergent, and generative; this paradigm is usually associated with architectural research drawn from an arts and humanities base. This would include much of the scholarly work in the architectural history and design theory areas.

Robinson’s intent is to articulate a way forward in architectural research such that the two distinct traditions can be effectively integrated. To this end, she presents
the example of a studio project that explores how sensitive design might imbue the qualities of home in institutional settings. This project draws insights from both empirically based survey research and sketch exercises that draw on more intuitive insights about the essential qualities of home (see Figure 3.4 and 3.5).

Although Robinson’s use of the *science* versus *myth* terminology is relatively idiosyncratic, the notion of a dichotomous set of research paradigms is commonplace in both architecture and other research disciplines. This dichotomous framework entails implicit associations with ontological and epistemological assumptions, as well as implications for methodological choices, that mirror those described by Robinson.

One of the most common devices for framing such a dichotomous model employs the terms *quantitative* versus *qualitative*. At its most basic level, this terminology assumes that quantitative research depends on the manipulation of phenomena that can be measured by numbers; whereas qualitative research depends on non-numerical evidence, whether verbal (oral or written), experiential (film or notes about people in action) or artifactual (objects, buildings, or urban

![Figure 3.4](image_url) In her studio teaching, Julia Robinson had her students evaluate institutional living environments, the results of which were subjected to statistical, “scientific” analysis. © ACSA Press, Washington, D.C., 1993.
Figure 3.5 Robinson also had her students sketch a sociable home environment based on the “mythic” qualities that were evoked. Drawing by Michela Mahady. © ACSA Press, Washington, D.C., 1993.
Figure 3.6 represents an abbreviated version of John Creswell’s matrix for differentiating quantitative and qualitative research paradigms in the social sciences.\(^\text{16}\) Thus, within this model, quantitative research assumes an *objective* reality and a view of the researcher as *independent of the subject* of inquiry. Qualitative research, however, assumes a *subjective* reality and a view of the researcher as *interactive with the subject* of inquiry. On a methodological level, the quantitative paradigm is seen as involving a *deductive* process of inquiry that seeks *cause-and-effect explanations*, whereas the qualitative paradigm necessitates an *inductive* process of inquiry that seeks clarification of *multiple critical factors* affecting the phenomenon.

This dichotomization implicitly persists in more recent characterizations of architectural research. For example, in a 2007 issue of *Journal of Architectural Education*, the journal editors proposed the term *scholarship of design* to serve as more inclusive definition of scholarship and inquiry that was contrasted with “the long-standing rigors of the scientific method”\(^\text{17}\) promoted in earlier years of the journal. Similarly, in an article on research studios for a 2011 issue of *JAE*, author David Salomon observed that while research is often equated with “controlled and objective experiments,” his aim is to propose a more inclusive definition of research that would entail “multiple modes of inquiry—both quantitative and qualitative.”\(^\text{18}\)

Unfortunately—though beguilingly simple—the quantitative/qualitative terminology places the emphasis on distinctions at the level of tactics, that is, the techniques for gathering or interpreting evidence or data. And at this level, distinctions between examples of research are often not nearly so clear-cut. Many research

<table>
<thead>
<tr>
<th>Question</th>
<th>Quantitative</th>
<th>Qualitative</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Ontology:</strong></td>
<td>Reality is objective and singular, apart from the researcher.</td>
<td>Reality is subjective and multiple as seen by participants in a study.</td>
</tr>
<tr>
<td>What is the nature of reality?</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Epistemology:</strong></td>
<td>Researcher is independent from that being researched.</td>
<td>Researcher interacts with that being researched.</td>
</tr>
<tr>
<td>What is the relationship of the</td>
<td></td>
<td></td>
</tr>
<tr>
<td>researcher to that being</td>
<td></td>
<td></td>
</tr>
<tr>
<td>researched?</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Methodology:</strong></td>
<td>Deductive process: cause and effect.</td>
<td>Inductive process: Mutual simultaneous shaping of factors.</td>
</tr>
<tr>
<td>What is the process of research?</td>
<td></td>
<td></td>
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</tbody>
</table>

studies employ a combination of quantitative and qualitative tactics. Even research areas normally associated with a qualitative paradigm, such as architectural history, may necessarily require significant quantitative techniques.\(^{19}\) For example, in Fernando Lara’s study of the acceptance of modern architecture by the Brazilian middle class, a quantitative analysis was conducted based on documentation of the facade elements of 460 houses in Belo Horizonte.\(^{20}\) In this case, the quantitative analysis complemented interviews and archival material that focused on how and why the houses were built as they were. (For more details on this study, see Chapter 12.)

Even within the family of physical sciences, this dichotomous framework for differentiating systems of inquiry is frequently employed. When the terms quantitative and qualitative are employed in the sciences, they are often associated with the corresponding terms: hard versus soft sciences.\(^{21}\) The implication is that the sciences that depend on numerical measurement (e.g., physics) are hard, while those that rely on description and classification (e.g., biology or geology) are soft.

In our view, however, this dichotomous framework is often misleading. First, as indicated earlier, the reliance on the quantitative/qualitative terminology places undue emphasis on the level of tactics, instead of the characterization of ontological and epistemological assumptions. As numerous examples of architectural research throughout this book will demonstrate, both numerical and non-numerical evidence can be deployed in the service of more than one system of inquiry.

Second, at least as characterized by frameworks similar to that of Creswell’s, there is an assumption that each of the two paradigms necessitates a particular research methodology. For example, the quantitative system of inquiry is assumed to be manifested in deductive methodology that seeks to discover cause-and-effect explanations. While not denying that there may frequently be such an association of quantitative data and deductive methods, this is not an invariant and necessary relationship. A system of inquiry will indeed frame the articulation of a research question, but there is not a one-to-one relationship between that system of inquiry and a particular research design. Indeed, in the chapters that follow, we will intentionally include examples of architectural research that employ research designs atypical of that particular topic area and system of inquiry.

Like Robinson, a number of authors in other disciplines seek to resolve the apparent dichotomy of quantitative science and qualitative humanities by incorporating the two epistemologies (and associated data types) into a single research study. For instance, two recent methods books (Creswell and Plano Clark, 2011; Teddlie and Tashakkori, 2009) are entirely dedicated to an examination of how quantitative and qualitative perspectives can be mixed for optimal effectiveness.\(^{22}\)
3.2.2 Some Alternative Frameworks

In contrast, a number of scholars in a variety of disciplines have sought to provide a more fine-grained conceptual framework than the dichotomous model framed by the quantitative versus qualitative dichotomy. One particularly instructive framework is presented in a classic article by Morgan and Smircich writing for a diverse audience of social scientists who, like architectural researchers, are likely to represent the full range of ontological stances.\textsuperscript{23} Morgan and Smircich explicitly argue that “the dichotomization between quantitative and qualitative methods is a rough and oversimplified one.”\textsuperscript{24} They also raise a concern that particular “quantitative” or “qualitative” tactics for gathering or interpreting evidence might be employed for their own sake, without reference to the paradigmatic frame of reference within which they are used. They go on to emphasize the “need to approach discussions of methodology in a way that highlights the vital link between theory and method.”\textsuperscript{25}

The framework, which Morgan and Smircich propose, is a continuum framed by subjective and objective end points. In contrast to the Joroff and Morse continuum, which simply identifies categories of research, Morgan and Smircich aim to represent the range of paradigmatic assumptions underlying research enterprises (see Figure 3.7). Within this framework, they identify and label six paradigmatic positions, indicating for each their core ontological perspectives (concerning the nature of reality), and corresponding assumptions about human nature. Most notably,

<table>
<thead>
<tr>
<th>Core Ontological Assumptions</th>
<th>Reality as a projection of human imagination</th>
<th>Reality as a social construction</th>
<th>Reality as a symbolic discourse</th>
<th>Reality as a contextual field of information</th>
<th>Reality as a concrete process</th>
<th>Reality as a concrete structure</th>
</tr>
</thead>
<tbody>
<tr>
<td>Assumptions About Human Nature</td>
<td>Humans as transcendental beings</td>
<td>Humans create their realities</td>
<td>Humans as social actors</td>
<td>Humans as information processors</td>
<td>Humans as adaptive agents</td>
<td>Humans as responding mechanisms</td>
</tr>
</tbody>
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\textbf{Figure 3.7} Gareth Morgan and Linda Smirich's continuum of research paradigms, 1980. Reproduced by permission of Copyrights Clearance Center.
however, they refrain from specifying particular research designs or tactics that might be associated with these positions. Indeed, they argue that such a one-to-one correspondence between a given system of inquiry and a particular strategy or tactic would be counterproductive.

Any given technique [or tactic] often lends itself to a variety of uses according to the orientation of the researcher. For example, participant observation in the hands of a positivist may be used to document the number and length of interactions within a setting, but in the hands of an action theorist the technique may be used to explore the realms of subjective meaning of those interactions.26

Our own position regarding the relation of systems of inquiry to strategies and tactics is consistent with that articulated by Morgan and Smircich. On the one hand, there should be a coherence and consistency among these characteristics within any given research study. But on the other hand, when a researcher adopts a particular system of inquiry, that decision does not automatically determine either strategy or the tactics for the study. Rather, a variety of both strategies and tactics can be orchestrated in ways consistent with the chosen paradigm.

To illustrate this point, we invoke a rather humorous analogy to a child’s toy where a variety of heads, torsos, and legs can be interchanged to create a host of assembled characters (see Figure 3.8). To be sure, some result in improbable combinations of mixed genders and incongruous body forms, just as not all combinations of strategies and tactics make sense within a particular system of inquiry. However, given the selection of a particular “head” (system of inquiry), many options of body parts (schools of thought, strategies, and tactics) can be linked to form a credible and coherent character (research study).

Over recent years, scholars in a variety of other disciplines have similarly sought to identify a more nuanced framework than the quantitative-qualitative dichotomy of epistemological assumptions. For example, social historian John R. Hall, in his book *Cultures of Inquiry* seeks to lay out a “Third Path” beyond the “modern and postmodern methodological debates in the social sciences, history, and the humanities.” In doing so, he identifies “a surprising web of affinities and shared problematics” that are “deeply connected, and sometimes dependent upon one another. These connections are often denied by practitioners . . . maintaining the boundaries that mark off some epistemological Other.”27

Similarly, in his book *The Pursuit of History*, John Tosh tackles the epistemological and methodological traditions of history as a discipline. He describes how through the 19th and well into the 20th century, most historical work was framed by the contrasting traditions of the scientific stance of positivism and the more
subjective perspective of Idealism. In more recent decades, history like many other disciplines experienced the "linguistic" or "Postmodern" turn, whereby the potential of achieving any intersubjective agreement in interpreting a given text or source is called into question. While acknowledging the multiple insights and contributions of the radically subjective perspective of the literary turn, Tosh emphasizes two influential trends in recent historical research—social theory and
cultural history—both of which represent significant and complementary alternatives to the extremes of Idealism/the literary turn and the scientific tradition.\textsuperscript{28}

3.2.3 A Proposed Framework: A Three-Part Continuum

As an alternative to the previously discussed dichotomous epistemological models, we propose a modified continuum that takes into account the perspective of many of the other authors we have already cited. While our proposed continuum (see Figure 3.9) acknowledges the possibility of multiple epistemological and ontological positions along the continuum (e.g., the Morgan and Smircich continuum in Figure 3.7), we identify, for the sake of clarity and ease, three primary epistemological positions. This continuum is bounded by the positivist/postpositivist tradition at one end, and constructivism at the opposite end. The middle ground of the continuum is not so easily labeled because there are multiple labels and schools of thoughts attributed to it by a various academic disciplines. Due to the lack of a widely accepted label, we are using the term \textit{intersubjective} to reflect its interstitial position between the positivist/postpositivist tradition and constructivism. This tradition recognizes both the multiplicity of distinct perspectives and the importance of socially shared action and knowledge.

There are several significant challenges in proposing any conceptual framework for the full scope of architectural and design research. First among them is that architecture, as both a discipline and a profession, encompasses an exceedingly multidisciplinary scope that ranges from highly technical research, to analyses of

<table>
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<th>Objective</th>
<th>Subjective</th>
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<tr>
<td>Positivism/Postpositivism</td>
<td>Intersubjective</td>
</tr>
<tr>
<td><strong>Epistemology</strong></td>
<td><strong>Knowing through distance from object</strong></td>
</tr>
<tr>
<td>Knower distinct from object of inquiry</td>
<td>epistemology reality</td>
</tr>
<tr>
<td><strong>Ontology</strong></td>
<td><strong>External reality revealed probabilistically</strong></td>
</tr>
<tr>
<td>Assumes objective reality</td>
<td><strong>Diverse realities situated in sociocultural context</strong></td>
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</tbody>
</table>

Figure 3.9 Continuum of research paradigms. Adapted from Mugerauer, 1995; Guba and Lincoln, 1998; Teddlie and Tashakorri, 2009; and Mertens, 2010. Full citations listed in endnotes.
design processes in many cultural contexts, to studies of the history of particular stylistic forms or building types, and a vast array of many other foci of inquiry. Second, over recent years, and certainly since the earlier edition of this book was published, there has been enormous fluidity in the way that different epistemological traditions have been characterized and labeled. Some of this fluidity arises from the differences among the many different academic disciplines that have explicitly addressed these issues. But, in addition, even within particular disciplines or disciplinary groups, there are often great variations in terminology. And finally, even though the range of epistemological traditions is arranged along a continuum, it is nevertheless highly reductive, in effect compressing multiple points of similarities and differences into one primary dimension of difference.

Despite these challenges and disclaimers, it is nevertheless possible to discern some consistent differences among the three primary epistemological traditions, however fluid the labels and underlying premises may be. We would argue that in order to advance the potential contributions of architectural research over the long term, it is both practical and essential to illuminate the paradigmatic perspectives that inform our field.

**Positivism/Postpositivism** At the objective end of the continuum lie ontological positions that assume the existence of a reality that can be objectively described or measured. Historically, positivism was characterized by what many would describe as a “naive” belief in a reality “out there” that can be fully known, while the currently more prevalent stance of postpositivism is characterized by a more nuanced belief in an “out there” reality that can only be known within some level of “probability.” And whereas positivism has assumed that objectivity can be achieved in the research process; postpositivism presumes that objectivity is a legitimate goal that may be imperfectly realized. Postpositivists also acknowledge that the experimental model typically used in the natural sciences is often inappropriate for research involving people. As a result, modifications and accommodations may have to be made in research practices, particularly the use of quasi-experimental and correlational strategies. (See Chapters 8 and 9 for details.) In addition to these basic positivist notions are the complementary assumptions that values should remain outside the conduct of inquiry (or at least can be controlled), and that it is possible to identify causal factors for observed phenomena.

In the context of architectural research, the positivist tradition is the most influential mode of research in the technical domains of the field, such as energy conservation practices or structures. These are topics of research in which there is an assumed consensus that the physical properties of materials or the processes of mechanical systems can be objectively measured or, at the very least, that such
measurements can *practically* be assumed to reflect reality. Nevertheless, though relatively rare, there are examples of research on technical topics that draw from nonpositivist epistemological traditions; some of these examples will be discussed in later chapters of this book.

In other areas of design research, such as those involving people’s responses to particular settings, the influence of the positivist tradition is more contested. Even so, research that measures the extent to which multiple, measured variables account for particular actions or social outcomes is likely to assume a probabilistic understanding of reality.

**Intersubjective** At the middle segment of our continuum, the essence of this paradigmatic orientation is that the world is known, intersubjectively, through sociocultural engagement. Ontologically, it assumes that although there are multiple diverse viewpoints regarding sociocultural realities, it is nevertheless possible to achieve shared understandings of those realities.

In contrast to the objective segment of the continuum, the intersubjective perspective assumes that it is neither possible nor necessarily desirable for research to establish objectivity within a value-free stance. Rather, researchers recognize the significance of values and meaning in framing the goals of the research and/or interpreting the results. And in contrast to the positivist paradigm, causality is assumed to be just one of many possible relations or interactions within the phenomena under study. More important, any causal relationship should be socially and historically situated.

For architectural and design research, this perspective would foreground the values and intentionality of people’s actions and interpretations of meaning at all scales of environments, including how these transactional relations are situated in the larger social or historical context. For instance, this perspective might be employed to elucidate a community’s interpretation of civic meaning in a new library or city hall. Another study might explore the contested dynamics among members of a design team for a major architectural project.

**Constructivism** At the right, or subjective end, of the continuum lies the set of ontological and epistemological assumptions described as constructivism. Within the past decade, many authors have come to employ the term *constructivism* in preference to several other labels—naturalistic, qualitative, or interpretive—that had been previously used interchangeably to describe this approach to research.

As advocates of constructivism, Denzin and Lincoln summarize this paradigm as entailing a “relativist” ontology, whereby multiple realities are understood as being socially constructed. Whereas the positivist tradition assumes the potential
of an objective reality, and the intersubjective paradigm foregrounds the transactional nature of meaning and action in a socially situated context, constructivism adopts a subjectivist epistemology whereby knowledge emerges as the researcher(s) and respondents co-create understandings of the situation or context being studied. In environmental and design research, the constructivist approach would seek to elucidate in-depth insights and interpretations of a given setting from the perspectives of the individuals who experience that environment.

A more radical version of the constructivist paradigm holds that a virtually infinite number of realities can be presumed. Knowledge can be only temporarily or provisionally established, and is soon to be reinterpreted. In the social sciences or the humanities, this version of constructivism often takes the form of in-depth textual analyses of either documents or interview materials; “hegemonic” interpretations are reconsidered in the light of what is or is not stated in a text. In architectural or environmental design research, artifacts, buildings, and settings are often the “texts” that are the subject of interpretation and reinterpretation. In its most radical form, interpretations are always provisional and fluid; no shared or common understanding can be established. As theorist Robert Mugerauer concludes, “[S]ince there is always the delay and deferral of meaning, while signs (inescapably) indefinitely refer to one another,” “no meaning”—as opposed to multiple meanings—is revealed.

3.2.4 The Complementary Nature of Research Framed by Diverse Systems of Inquiry

Finally, and most importantly, the larger intent of Figure 3.9 is to convey the stance to which we are committed in writing this book, specifically that each system of inquiry can provide an appropriate and useful frame of reference for architectural research. Good research that yields important theory or significant practical applications can be achieved within any one of these paradigmatic clusters. Likewise, adherence to a particular system of inquiry—however esteemed within a particular subdiscipline of architectural research—is no guarantee for achieving high-quality research. In that, the analogy to architectural style is directly pertinent; though we may individually prefer to design in a particular style, we have to acknowledge that there are both good and bad exemplars of that style. Adherence to Classicism or Art Deco, Postmodernism or Neo-Modernism, does not in and of itself assure quality.

3.3 MEASURES OF RESEARCH QUALITY

In an inherently interdisciplinary field, such as architecture, a common tendency is for researchers, who might work primarily or only within one system of inquiry, to evaluate research from a different system of inquiry according to the standards of
quality they know best. For example, researchers whose work falls clearly within the positivist paradigm may nevertheless tend to judge research done in either a constructivist or intersubjective paradigm by the standards they themselves employ. Not surprisingly, this can lead to a lot of heated arguments about whose work is really “research” and whose is not. In such instances, the potential benefits of tackling research topics in architecture from a variety of perspectives are virtually negated.

Instead, we believe it is far more productive to evaluate quality in architectural research according to the standards that have been developed by methodologists working within the various paradigmatic traditions. Although the quality standards for the positivist/postpositivist paradigm have been codified for many years, the effort to articulate standards of quality appropriate for alternative paradigms remains a continuing project; in recent decades, it has yielded numerous articles and chapters across many disciplines. Perhaps the most influential early exemplar of this effort is embodied in a 1981 journal article by social scientist Egon Guba. Figure 3.10 presents the typically recognized quality standards of the positivist/postpositivism paradigm alongside Guba’s proposed standards for what he termed at the time a naturalistic paradigm.

A second important feature of the matrix in Figure 3.10 is that the relevant quality criteria (in the left column of the matrix) are “generic” terms that are not associated with any particular system of inquiry. The obvious purpose in doing so is to avoid privileging the terms and concepts associated with any one paradigm. Nevertheless, there is legitimate criticism that this matrix still privileges the postpositivist paradigm standards by forcing the identification within the naturalistic paradigm of terminology essentially comparable to those postpositivist standards.

Indeed, from a historical perspective, Guba’s proposed quality standards represent an explicitly binary alternative to the then dominant positivist/postpositivist system of inquiry. Since the publication of Guba’s article, many researchers and scholars have acknowledged the significance of Guba’s contribution in the articulation of quality standards outside the postpositivist tradition. However, a number of scholars (including Guba himself) have over recent years have offered either refinements or alternatives to the “naturalistic” standards for particular domains of research; these will be discussed later in this chapter. Nevertheless, we believe that Guba’s proposal remains a useful introduction to the principles of quality standards in research.

3.3.1 Quality Standards within a Postpositivist System of Inquiry

For better or worse, many readers are likely to be at least somewhat familiar with the standards of quality identified with the objective paradigm. This is because they
have been codified, discussed, and presented in methodology texts for many years. And as alluded to earlier, because the standards that apply to other systems of inquiry have been less explicitly codified, or codified more recently, there is often the tendency among researchers to apply the “objective” standards to research executed within the other systems of inquiry. Although we believe this tendency is a mistake, we have nevertheless chosen to begin with the objective paradigm, simply because it already is a starting point for many researchers.

**Internal Validity** Although there are many subcategories of internal validity, the fundamental issue is whether the key concepts and operations of the study are truthful representations of the object of study. For example, we might ask whether a housing satisfaction questionnaire really measures residents’ satisfaction with

<table>
<thead>
<tr>
<th>Standard</th>
<th>Positivism / Postpositivism</th>
<th>Naturalistic</th>
</tr>
</thead>
<tbody>
<tr>
<td>Truth value</td>
<td>Internal validity</td>
<td>Credibility</td>
</tr>
<tr>
<td></td>
<td>Equivalence of data of inquiry and phenomena they represent</td>
<td>Check data with interviewees; triangulation—multiple data sources of data collection</td>
</tr>
<tr>
<td>Applicability</td>
<td>External validity</td>
<td>Transferability</td>
</tr>
<tr>
<td></td>
<td>Generalizability</td>
<td></td>
</tr>
<tr>
<td>Consistency</td>
<td>Reliability</td>
<td>Dependability</td>
</tr>
<tr>
<td></td>
<td>Instruments must produce stable results</td>
<td>Trackability of expected instability of data</td>
</tr>
<tr>
<td>Neutrality</td>
<td>Objectivity</td>
<td>Confirmability</td>
</tr>
<tr>
<td></td>
<td>Methods explicated; replicable; investigator one-step removed from object of study</td>
<td>Triangulation of data; practice of reflexivity by investigator</td>
</tr>
</tbody>
</table>

Figure 3.10 Comparative analysis of quality standards, 1981. By permission of Egon Guba.
their housing. This requires a clearly stated definition of what would constitute housing satisfaction and a rationale for the correspondence between the question items and that definition. Or, perhaps, we have reason to develop a new housing questionnaire. We might want to make sure that the results using that questionnaire correspond to a previously developed questionnaire on housing.

In the case of Stazi et al.’s study of solar walls referred to at the beginning of this chapter, the authors carry out their testing of a Trombe wall system used as a nonventilated solar wall in winter, and a Trombe wall with cross-ventilation and shaded by roller shutters and overhangs in summer. This experimentation was conducted over several years at a case study residential site in Italy. Data from the experimental model was then used as a basis for the development of a simulation model; such that “the first simulation was run to reproduce the ‘as built’ condition. . . . Once the model had been validated, it was then possible to calculate results for the whole year, including measurements of indoor air temperatures, solar walls surface temperatures, and heating energy consumption.” In other words, the authors employed both experimental data and numerical simulations in concert to assess the validity of the Trombe solar wall measurements.

**External Validity**

The question behind this criterion is whether the results of the study are applicable to the larger world. Or, at least, what are the defining contextual constraints within which the results are valid? In the case of the solar wall study, the authors are quite specific and clear in stating that the window designs were tested at a case study residential site in Italy. Based on these climatic conditions and the subsequently calculated simulation model, the authors conclude that solar walls are shown to (1) be superior compared to conventional walls in both energy savings and comfort in winter; and (2) achieve adequate performance, with cross-ventilation adaptations, in summer.

What if we want to use this experimental Trombe wall design in New York or California? We have two choices. At a more informal level, we might compare the climate data for New York or California with that of Mediterranean Italy; we would then make a calculated judgment about the degrees of similarity in climate. We might well conclude that the climates of California and Italy are similar enough to expect the same results; similarly, we might conclude that the New York climate is too dissimilar to assume comparable results. In that case, we might seek to expand the original study and employ additional experiments to run the numerical simulation using the New York climate data.

**Reliability**

The concept of reliability is concerned with the consistency of the measurements or findings. Within the objective paradigm, the assumption is that
the research methods would yield the same results, if the study were conducted under the same conditions. What might we say, then, about the reliability of the solar wall study? In this case, since the research concerns relatively stable physical objects and properties, the window performance data would be expected to be quite reliable, so long as the physical conditions of the experiments and simulation remain the same. Nevertheless, the authors conclude their article by acknowledging that additional experiments are being carried out so as to provide more complete data on how the performance and management of ventilated Trombe walls can be improved during the summer months.

However, other architectural studies using an “objective” system of inquiry frequently have, as the focus of study, conditions or social phenomena that will necessarily require a greater examination of reliability. If, for instance, we consider again the example of housing satisfaction research, we might expect similar results in a study in which a sample of residents are surveyed initially, and then again a week or two later. In this instance, the similar results would suggest reliability; inconsistent results would suggest unreliability of the questionnaire. However, if the survey were administered to the same group a year or two later, after major changes in the housing management occurred, then we would expect that changes in the survey results might well occur. We would then attribute the lack of consistent or stable results to a fundamental change in the conditions of the study rather than to a lack of reliability of the survey instrument.

Objectivity Consistent with the “objective” system of inquiry, the goal for the research procedures is to keep the potential bias or interference of the researcher out of the process. This is achieved by strict specification and administration of the relevant procedures. Typically, the researcher utilizes standardized measurement instruments—whether questionnaires or calibrated equipment; the sequence and process of experimental manipulation are highly regulated. In the case of the Stazi et al. study, the researchers carefully specify the experimental and simulation procedures, provide detailed diagrams and photographs of the Trombe solar wall configuration, and extensive charts reflecting the results of the Trombe wall performance assessment. Within the text, other information is provided, such as the dimensions, materials, the devices for regulating air temperature, and so on. Armed with these specifications, another researcher could choose to replicate the study, thus providing yet another test of these results.

3.3.2. Quality Standards within a Naturalistic System of Inquiry

The second column in Figure 3.10 reflects Egon Guba’s proposed set of quality standards for what he termed naturalistic inquiry. In introducing what he calls
“criteria for assessing trustworthiness,” Guba has identified a number of key characteristics of naturalistic inquiry, among them the recognition of multiple realities, as opposed to a single reality; the assumption that generalizations are not necessarily possible in all instances; the understanding that a research design may emerge as the research proceeds; and the belief that the researcher and the respondent influence and are influenced by each other.

Guba subsequently proposed yet another alternative set of quality standards for naturalistic research. However, because of the heuristic value of the originally developed criteria and their influence on the literature on research methodology, we will present them here for discussion and comparison to the postpositivist standards.

The standards of quality that Guba has proposed represent substantially different criteria—though presented in parallel structure—from those associated with the postpositivist system of inquiry. Moreover, Guba provides examples of several concepts or procedures for meeting each of these criteria, but given the summary nature of this discussion, we will simply highlight the most essential points.

**Credibility** The idea behind credibility is to establish truth value by taking into account the natural complexities inherent in the situation or circumstance being studied. In other words, credibility entails a more holistic approach to the research problem. Two particularly important ways of demonstrating truth value are triangulation and member checks. The former involves the utilization of a variety of data sources, multiple investigators, and/or a combination of data collection techniques in order to cross-check data and interpretations. The latter involves checking the data and interpretations with the respondents and groups from whom the data were solicited, a process that Guba claims “goes to the heart of the credibility criterion.”

If we return now to Schwarz’s study of nursing home design, we find that he reports triangulation but not the use of member checks. To be specific, Schwarz achieves triangulation in two distinct ways. First, although he provides details of three separate case studies, he reports that these are three of a total of eight case study facilities. In other words, his conclusion that the architectural model used for nursing homes is misguided and unduly compromised by code regulations and reimbursement systems is strengthened by his being able to demonstrate this dynamic in multiple instances. Second, within each case study, Schwarz indicates that his data derive from:

> [M]ultiple means such as open-ended interviews, document collection, participatory observation, and visits to built facilities. . . . Key informants included care-providers, owners, architects, gerontological consultants, staff members,
committee and board members, state regulators, residents of nursing homes and their families.  

**Transferability**  Like generalizability—its corresponding term in the postpositivist paradigm—transferability has to do with the extent to which the conclusions of one study can be applied to another setting or circumstance. To achieve transferability, Guba argues, one must provide a sufficiently “thick” description such that relative similarity of the two contexts can be adequately assessed. In the nursing home study, Schwarz is careful to emphasize the particularities of the settings he studied, while at the same time he suggests the likelihood that similar themes would likely emerge through research in other nursing home settings:

"In [this] tradition . . . , researchers are cautious not to generalize because of the personal nature of their observations and specificity of the measurements made in the fieldwork. In most cases, fieldwork can produce results that would not necessarily be replicated by other researchers. Because of the nature of in-depth studies, the themes, results, and conclusions are real and accurate, primarily within their original context. Although no comprehensive generalization was intended in this study, it is safe to assume that the themes described in the three cases are not unique in other design processes of nursing homes."

**Dependability**  The notion of dependability suggests that there is a fundamental consistency within the data, but it also takes into account “apparent instabilities arising either because different realities are being tapped or because of instrumental shifts stemming from developing insights on the part of the investigator-as-instrument [of research].” The primary device for ensuring dependability is, according to Guba, the establishment of an “audit trail.” The audit trail documents all the processes by which data were collected, analyzed, and interpreted; this might include interview and observation notes, drawings and diagrams that track people’s activity patterns in a building, the investigator’s daily journal notes, and so on.

"In the publication format of Schwarz’s study, it is not possible to verify the extent to which Schwarz may have established a comprehensive audit trail. However, one can infer from his discussion of the data analysis that a substantially complete audit trail may well have been established:

The analysis process followed the grounded theory approach [see Chapter 7 for details] in the steps described by Chesler. The data were transcribed, coded, and categorized in a search for themes. Due to the limited scope of this article, the themes from the three cases presented here depict only issues related to
regulations and the reimbursement system of long-term care settings. These themes are major anchoring points of the world’s [sic] views of the actors in the design process. Quotes are given in their natural form to capture the character of the fieldwork.55

**Confirmability** Contrary to the notion of ensuring the investigator’s objectivity, Guba argues instead for the confirmability of data and interpretations. This, he maintains, can be achieved through a combination of triangulation and reflexivity on the part of the researcher. We have already discussed the use of multiple methods, sources, and investigators to establish triangulation. Reflexivity requires the investigator to reveal his/her epistemological assumptions, their influence on the framing of the research question, and any changes in perspective that might emerge during the course of the study.

In the example of Schwarz’s study, his efforts to establish triangulation have already been noted. And although he does not provide the full measure of reflexivity suggested by Guba, he nevertheless makes his stance clear by articulating the system of inquiry within which his research is situated.

### 3.3.3 Quality Standards among Selected Schools of Thought and Disciplines

In recent years, a number of authors across a variety of fields have articulated specific quality standards for research that falls within the continuum of intersubjective or constructivist paradigms. Figure 3.11 represents a sampling of the quality standards usually associated with particular disciplines and/or exemplary “schools of thoughts” outside the positivist/postpositivist tradition.


Recall that in Chapter 1, we defined schools of thought as broad theoretical perspectives that have significantly influenced multiple disciplines. In Figure 1.4 we diagrammed a relationship of nested squares whereby systems of inquiry represent the broadest assumptions that frame the research enterprise. Within that broader framework, the adoption of a particular school of thought is likely to influence how research questions are framed. Although it is entirely possible to
<table>
<thead>
<tr>
<th>Perspectives Standards</th>
<th>History</th>
<th>Pragmatism</th>
<th>Transformative</th>
<th>Phenomenology</th>
<th>Constructivist</th>
<th>Radical Constructivist/Poststructuralist</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Truth Value</strong></td>
<td>Sources never complete but use of multiple sources</td>
<td>Tools of inquiry refined in light of communal meaning</td>
<td>Maintain diversity with target groups, check data with interviewees</td>
<td>Precise description of phenomena</td>
<td>Ontological “authenticity” enlarges personal constructions and credibility</td>
<td>Truth is undecidable, remains within play of signification</td>
</tr>
<tr>
<td><strong>Applicability</strong></td>
<td>Tension in history between focus on unique events and generalization</td>
<td>Established through process of validation, truth happens to an idea</td>
<td>Cultural sensitivity can ensure applicability; erode ignorance</td>
<td>Search for essences</td>
<td>Transferability, educative authenticity leads to improved understanding of others</td>
<td>Dissemination is perpetually unfulfilled, meaning and absence of all signified</td>
</tr>
<tr>
<td><strong>Consistency</strong></td>
<td>Insight and interpretation dependent on individual scholar</td>
<td>Seek agreement via action</td>
<td>Data collection designed for identifying potential benefits for excluded group(s)</td>
<td>Researcher’s free imaginative variation</td>
<td>Dependability, tracking expected instability of data</td>
<td>Only instability is possible, each interpretation sows seeds of its undoing</td>
</tr>
<tr>
<td><strong>Neutrality</strong></td>
<td>Scrutinize assumptions (reflexivity)</td>
<td>Investigator interprets meaning framed by larger purposes (reflexivity)</td>
<td>Reflexivity with emphasis on power differentials</td>
<td>Reflexivity and bracketing (reductive focus)</td>
<td>Reflexivity</td>
<td>Author produces fiction, inventing styles and meanings as needed</td>
</tr>
<tr>
<td><strong>Situatedness</strong></td>
<td>Attention to entire historical context</td>
<td>Inquiry situated in transactional engagement and larger purposes</td>
<td>Situating inequalities and issues of social justice in historical context</td>
<td>“Intentionality” as essential character of consciousness</td>
<td>Emphasis on natural settings</td>
<td>Interpreting is entirely situated within “textual” analysis</td>
</tr>
</tbody>
</table>

Figure 3.11 Quality standards among exemplar schools of thought and disciplines. Adapted from sources listed in figure.
design a research study without aligning it with a particular school of thought, virtually every research study is framed by a system of inquiry, whether explicitly stated or not, that implies basic assumptions about the nature of reality and knowledge. Nevertheless, when researchers do identify their work as associated with a school of thought, the associated conceptual framework often influences not only how the research question is framed, but also the use of particular research tactics, including the choice of relevant sources or data, as well as the use of particular analytical tools.

If we very briefly consider each of the terms identifying the disciplinary domains and schools of thought represented in Figure 3.11, we can get some sense of the overall conceptual complexity of the several exemplars. For consistency with the previous matrix of quality standards (Figure 3.10), we are using the same generic terms for aspects of quality coined by Guba. However, few of the authors make any specific references to these particular labels; we have simply categorized the various authors’ comments according to these terms for ease of comparison. Indeed, the standards identified by the individual columns often overlap and/or are virtually identical to some of the standards in other columns. As a consequence, there may be instances where a particular study might be appropriately interpreted as fitting under more than one perspective.

Most important, although this matrix may appear to be organized as a continuum similar to Figure 3.9 (systems of inquiry), this is not the intended reading of the matrix. Rather, we would argue that the arrangement of the several columns within the matrix represents a rather fluid positioning of the quality standards represented. In other words, the relative positioning of, for example, the emancipatory perspective is not meant to imply that all studies identified with that perspective are necessarily less intersubjective or more subjective than research from a pragmatist perspective. Although it may well be possible to define a ‘central’ epistemological tendency for each school of thought along an intersubjective–constructivist continuum, it is also true that any given research study within that school could justifiably be located at the different ends of such a continuum. In other words, while there is often an identifiable paradigmatic tendency within a given school of thought or disciplinary domain, that tendency is not determinative.

To begin, then, the matrix column at the right side of the matrix identifies the quality standards articulated by the historian John Tosh. He is the author of a classic book on the practice of historical inquiry titled *The Pursuit of History*, now in its fifth edition. Because his intention is to identify the more discipline-specific and overarching principles of historical research, his proposed standards are less clearly affiliated with a particular school of thought. Overall, Tosh, like many historians, argues that excellent historical research depends on the insight and interpretive skill
of the historian. Nevertheless, he argues that the overall quality of that research can be reinforced by, among other things: the willingness of the historian to scrutinize his/her assumptions (reflexivity); the use of as many sources as possible in the face of typically limited sources; and the use of a “hypothesis” (in a generic sense of the word) while being open to contrary evidence.46

Moving to the second column, the term pragmatic is used in two complementary senses. In the more generic sense of the term, some researchers argue that this epistemological perspective is primarily a theoretical rationale for the use of a mixed methods (quantitative/qualitative) research strategy. (See Chapter 12 for extended discussion of mixed methods.) Other researchers more explicitly draw on the philosophical roots of Pragmatism, initially articulated in the late 19th and early 20th centuries by such theorists as Charles Sanders Peirce and John Dewey. In general, pragmatism assumes that “humans live in a common world that is nevertheless nonobjective.”47 It is social “transactions” that enable us to understand both “the existence of multiple subjective realities while at the same time seeking agreement via action.” This emphasis on a “transactional” relationship between meanings and actions leads to a “prospective” stance embodied in the question: “What difference would it make to us if the statement were true?” In other words, the pragmatist researcher is concerned with the value and efficacy of the outcomes of the research enterprise for the larger community.48

**BOX 3.1**

**A Pragmatic Analysis of New Urbanism and Suburban Decentralization**

In a 2009 study, Brian Christens explicitly draws on a philosophically pragmatist approach to analyzing the competing models of suburban decentralization and new urbanism (see Figures 3.12 and 3.13). He argues that much of the ongoing discourse on this topic has mistakenly focused on evaluating which side of the argument has marshaled “the more objectively appealing theories and facts.” Rather than employing a research approach based on “theoretical/empirical objectivity” (usually associated with the postpositivist paradigm), Christens argues that it is more...

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appropriate to adopt a research approach that explicitly addresses the underlying values inherent in the two neighborhood models. To this end, Christens argues that research in the tradition of pragmatism leads to conclusions that are situational and tentative—they are “true” only for a particular place and time and in relation to a certain set of goals. . . . [P]ragmatism envisions a philosophy engaged in the task of theorizing attainable values as both means and ends toward which everyday individual and structural efforts might be dedicated.

Thus, Christens’s aim is not to draw conclusions about the extent to which of the two neighborhood models is better or more effective, in general. Rather, he identifies the following research questions to be posed against each of these neighborhood design concepts:

1. What are the beliefs that inform this approach?
2. If we are to adopt these beliefs in specific instances, what are the values for which we are working?
3. And why should we—in this context—believe these values to be worthy of our actions (and beliefs)?
In addressing the first two questions, Christens’s detailed analysis leads him to conclude that the values most commonly associated with suburban decentralization include “the pursuit of paradise, economic liberalism, private property rights/transportation, functional aggregation, and bonding with communities of individuals with perceived similarities.” In comparison, the values most often articulated as a basis for new urbanism include “social equity, the common good, bridging of social groups, sustainability, community, and a vibrant public.” Christens suggests that although these value sets do not always or necessarily represent oppositional poles of values, they nevertheless represent a distinct difference in emphasis.

To address the third research question, Christens first reminds us that the “pragmatist approach to a project is to ask which beliefs work in practice in certain contexts.” For instance, he highlights author David Brain’s suggestion that proponents of new urbanism might better eschew the notion of “community” and aim instead to achieve “civility,” a concept that “involves a level of trust and capacity for social relation that makes collective decision-making possible.” Moreover, new urbanism’s relative emphasis on physical design qualities is not likely to be sufficient to achieve some of the generally desired transformations in economic or social domains. However, the inability of suburban decentralization to serve as a catalyst for the values of bridging relations across social groups,

Figure 3.13 Typical street in Kentlands with a mix of diverse housing types, sidewalk, and no garages facing street. Courtesy of Joongsub Kim.

(Continued)
environmental conservation, and a more vibrant public sphere “necessitates the search for alternatives.”

In conclusion, he argues that in moving forward with specific neighborhood development proposals, all involved would do well to maintain “an experimental habit of mind.” Rather than looking for an ultimate solution, it would be far more effective to seek “modest practical steps” that would assimilate differences between the competing neighborhood models.

In the third column, a common alternative label for transformative is emancipatory. As such, this perspective emerged in recent decades in response to concerns among scholars in a number of disciplines who began to point out the unconscious dominance of racial, ethnic, gender, and Western-focused biases in the vast majority of research. Typically, this approach promotes social justice by focusing on the dynamics of power and marginalization as they affect less dominant groups; as well, it seeks to highlight the historically and socially situated context in which the study respondents find themselves.⁴⁹ In architectural research, this would, for example, include studies that investigate the extent to which individuals and groups experience equitable access to various settings.

Depending on disciplinary traditions, many scholars whose work can be categorized as within the transformative perspective strongly identify their work as “critical theory.” This school of thought is derived from the work of several generations of German philosophers and social scientists associated with the Frankfurt School (including such influential theorists as Jurgen Habermas and Herbert Marcuse) who drew substantially from the Marxist tradition. In a broader context, many scholars who employ feminist, critical race, or postcolonial perspectives frame their work under the umbrella of Critical Theory.⁵⁰

Much influenced by the heritage of German philosophy and the Marxist tradition, the initial aim of the Frankfurt School scholars was to go beyond the established domains of philosophy and social sciences to achieve a more integrative theoretical stance that is simultaneously “explanatory, practical, and normative.”⁵¹ In doing so, they sought to “transform contemporary capitalism into a consensual form of social life.”⁵² In more recent developments, the work of Jurgen Habermas has been particularly influential; many of the major tenets of his work are seen as consistent with the perspectives of American Pragmatists including Dewey and Rorty. For example, embedded in Habermas’s emphasis on the role of “communicative action” is the assumption that “rationality” is not about acquiring knowledge but rather about how practical knowledge enables the cultivation of social relationships, a stance that foregrounds the practical goal of solving problems.⁵³
BOX 3.2
A Transformative Perspective on the Practice of Julia Morgan

Diane Favro’s study of the well-known, early-20th-century California architect Julia Morgan (1872–1957) embodies the premises and standards of the transformative school of thought. By way of introduction to her study, Favro first cites a quotation from a 1931 interview with Julia Morgan in which she is asked about women’s contribution to the field of architecture. Morgan demurs and comments that women professionals had so far contributed little or nothing, though they might in the future. Favro then compares these comments with the response of Linda Nochlin, who in 1972 was asked why there had been no great women artists, to which Nochlin replied that “as a disenfranchised group, women artists had limited opportunities for greatness.” Favro then goes on:

Thus, Nochlin correctly deduced the question itself is inappropriate. Women architects similarly have been evaluated according to masculinist criteria. To be accurate, every evaluation of female practitioners must consider how gender affected their careers, designs, and recognition.

With this introduction, Favro is clearly signaling that her study of Morgan will challenge existing orthodoxies regarding how the careers of architectural practitioners in general, and women in particular, are assessed. (See Figure 3.14, an example of one of Morgan’s significant projects.) Throughout the article, she very explicitly weaves the historical situatedness of gender issues as they were lived by women during Morgan’s lifetime. For example, she describes the anomaly of Morgan’s being one of the few American students among her almost entirely male colleagues to actually receive a diploma from the Beaux Arts. Morgan, Favro argues, was tenacious in doing so “to overcome the disadvantages incumbent with her gender.” Favro then goes on to suggest that other characteristics of her professional life—such as her downplaying of her gender in her professional role, maintaining a low profile, developing a repeat business with influential women clients—were strategies adopted because of the social construction of gender at that time.

Favro makes the point that previous research had often criticized Morgan for many of the attitudes and practices described above, including her lack of “a signature style or theory.” But, Favro argues, “her accommodation was a logical response to the professional situation faced as a

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trailblazer.” In this regard, Favro reframes the conventional interpretation of Morgan’s role and stature in the profession, thereby providing an important educative function.

Consistent with the transformative perspective’s imperative to promote positive change in social and cultural practices, Favro’s analysis makes it clear that she is challenging the historically situated value system evident during Morgan’s lifetime. But, more important, she also argues that the values Morgan embraced and promoted deserve to be at the heart of contemporary architecture. Favro concludes her article this way:

Morgan deserves recognition for all her skill at crafting a profitable, large-scale, and enduring career despite the obstacles presented by her
Next, the phenomenological tradition has long been influential in architectural research; it is, however, a mode of inquiry that is challenging to situate among other schools of thought, due in part to its relatively unique conceptualization of “subjectivity.” Phenomenology is a philosophical tradition that has its roots in the works of German philosophers, particularly Heidegger and Husserl; in architecture, this perspective is most notably represented by the European scholar Christian Norberg-Schulz in his books on topics of dwelling and place, and more informally by many authors and architects who less explicitly adopt its conceptual framework.

A number of scholars, both in architecture and in other disciplines, take the position that phenomenology is fundamentally intersubjective in that it “involves a belief that shared understanding is possible.” At the same time, phenomenology emphasizes the holistic depth of the participant’s or author’s experiences; from them, generalizations are made about the essence of such experiences. In architecture and environmental design research, this of course highlights a person’s experience of built form and place. To the extent that generalizations about an environmental experience are derived from the insights of a single person, this tradition is often open to being labeled as “subjectivist” by some theorists. However, to the extent that personal preconceptions are held in abeyance, the emphasis may be more “intersubjective.”

As described earlier in this chapter, the term constructivist has in recent years been used in preference to other previously used terms such as naturalistic or interpretive. With that heritage in mind, Guba and Lincoln describe the quality standards for constructivism with reference to Guba’s original criteria for trustworthiness, noting as well constructivism’s emphasis on methodological procedures for studying phenomena in their natural settings. In addition, Guba and Lincoln propose additional criteria that intentionally reject any implied comparison with postpositivist standards. The authors propose to emphasize the notion of authenticity,
manifested in several ways: ontological authenticity, which enlarges personal constructions; educative authenticity, which leads to the improved understanding of others; catalytic authenticity, which stimulates action; and tactical authenticity, which empowers action. These criteria for authenticity are incorporated in several cells of the constructivist column of the matrix.

Finally, the quality standards for a more radical version of constructivism are represented in the last column of the matrix. This perspective is often referred to as a poststructuralist or postmodern school of thought (not to be confused with the architectural style). Consistent with the hypo-subjective epistemological and ontological premises of poststructuralism described earlier in the chapter, the quality standards highlight the scholar’s interpretive creativity in illuminating the impossibility of any fixed meaning of the "text" being analyzed, while simultaneously giving license to produce "fiction." In the social sciences or humanities, the text may be an existing document, archival material, interview transcript, or the like. In architectural and environmental research, the "text" is typically a building, designed artifact, or larger setting.

The essay by Jennifer Bloomer described at the beginning of this chapter represents an example of this poststructuralist perspective. For instance, she maintains that the "repression of nostalgia is at the core of the project of modernity." Although this statement is essentially consistent with the standard interpretation of Modernism, she quickly upends that interpretation by arguing that the intensity of Modernism’s repression of nostalgia in effect amounts to "a fetishization of an imagined absence." In other words, underlying Modernism’s insistence on "form" expressed by "glossy smooth skin" only hides a repressed longing for the solidity of "matter."

Bloomer’s essay also employs a repetition of word play, another common device in poststructuralist analysis. Specifically, she weaves together the experience of nostalgia in domestic space with an interplay of the words mater (mother in Latin) and matter expressed in a masonry, climate-sensitive home. Underlying this layering of interpretation is the metaphoric connection of the feminine to the repressed fecundity of architectural matter in general, and in domestic space in particular. In this way, Bloomer proposes an unexpected interpretation of Modernism that depends on her unique exploration into the imagined space between intended and unexpressed or repressed meaning.

In sum, the sampling of quality standards across multiple disciplines and the work of a diverse set of scholars demonstrate that the codification of research standards across the intersubjective/constructivist paradigms continues to be a work in progress. Advocates for these paradigms might well argue that the range and diversity of standards represent not only a robust development of these
research traditions but also an appropriate sensitivity to the contextual differences among disciplines and topics of inquiry. However, researchers working in the postpositivist tradition would likely argue that the continuing influence of that tradition is at least in part due to the relative consensus achieved in the codification of those standards. Each of these positions may well make an accurate point; in the end, architectural and design research is all the richer for the contributions of these multiple research traditions.

3.4 CONCLUSIONS: LOOKING AHEAD

Over the course of this chapter, we have sought to demonstrate how the researcher’s affinity for a particular system of inquiry is likely to frame the choice of a school of thought, the way in which the research question is posed, the selection of a research design, the tactics of information gathering and analysis, and even the practices of the researcher as he or she conducts the inquiry. Although we will not always specify the particular research paradigm framing the various exemplar studies cited in the seven chapters on research strategies that follow (Chapters 6 through 12), we suggest that readers will nevertheless find it useful to keep in mind these paradigmatic perspectives and associated quality standards when considering the underlying assumptions and diverse contributions of the research reviewed.

NOTES

4. Ibid., 217–218.
6. Ibid., 347.
8. Ibid., 162.
9. Ibid.
Part I: The Domain of Architectural Research

12. Ibid., 21.
13. Ibid.
14. Ibid.
24. Ibid., 499.
25. Ibid., 499.
26. Ibid., 498.
30. Teddlie and Tashakkori, 88.
31. Norman Denzin and Yvonna Lincoln, Collecting and Interpreting Qualitative Materials (Los Angeles: Sage, 2008); Teddlie and Tashakkori; Mertens; Creswell and Plano.
32. Denzin and Lincoln, 32.