

Theory Construction in Qualitative Research: From Grounded Theory to Abductive Analysis

Sociological Theory
30(3) 167–186
© American Sociological Association 2012
DOI: 10.1177/0735275112457914
<http://stx.sagepub.com>


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Abstract

A critical pathway for conceptual innovation in the social is the construction of theoretical ideas based on empirical data. Grounded theory has become a leading approach promising the construction of novel theories. Yet grounded theory-based theoretical innovation has been scarce in part because of its commitment to let theories emerge inductively rather than imposing analytic frameworks a priori. We note, along with a long philosophical tradition, that induction does not logically lead to novel theoretical insights. Drawing from the theory of inference, meaning, and action of pragmatist philosopher Charles S. Peirce, we argue that abduction, rather than induction, should be the guiding principle of empirically based theory construction. Abduction refers to a creative inferential process aimed at producing new hypotheses and theories based on surprising research evidence. We propose that abductive analysis arises from actors' social and intellectual positions but can be further aided by careful methodological data analysis. We outline how formal methodological steps enrich abductive analysis through the processes of revisiting, defamiliarization, and alternative casing.

Keywords

theorization, abduction, community of inquiry

A crucial pathway for conceptual innovation in the social sciences is the construction of theoretical ideas on the basis of empirical data. Trying to make sense of empirical phenomena, sociologists often find themselves “constructing theory”—engaging in creative attempts to generalize mechanisms, particular cases, or links between causal statements (Abend 2008:177–79; Gross 2009a) in ways that provide better traction for understanding observations they work with and possibly anticipate observations in other cases. Theory construction is thus an ongoing pragmatic process of “puzzling out” and problem solving that draws on existing ways of understanding what the phenomenon “is a case of” (Ragin 1992; Tavory and Timmermans 2009; Winship 2006). The common ground in such generalizations is the dialectic between data and generalization as a way to account for empirical findings.¹

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Asserting that unexpected theoretical formulations and categories emerge in relation to data locates a social practitioner within a meta-theoretical debate about the relation between data and theory. Grounded theory has popularized the emergence of theory from data since the late 1960s.² Indeed, owing to its promise to provide heuristic guidelines for data-driven theory construction, grounded theory has become a dominant data-analytical approach. Barney Glaser and Anselm Strauss's (1967) *The Discovery of Grounded Theory* has spread across sociology, anthropology, social work, education, law, management, nursing and medical research, and computer and information sciences. Its coding schemes and heuristic principles have been incorporated into the most widely used qualitative data analysis software programs (MacMilan and Koenig 2004). Consequently, critics have used grounded theory as the main foil from which to advance alternative approaches. Burawoy initially developed his version of the extended case method in contrast to grounded theory's inductive focus (Burawoy 1991:8–28, 272–79; 1998). DeVault adapted Dorothy Smith's institutional ethnography in reaction to grounded theory's principle to let traditional sociological variables, such as race and gender, emerge from the data (Devault 1995; but see Clarke 2008).

In spite of grounded theory's popularity and wide circulation, even devoted practitioners have questioned whether grounded theory has fulfilled its promise to create new empirically based theories (Bryant 2002; Charmaz 2006; Clarke 2005). Although grounded theory precepts seem to guide many researchers in a solid "normal science" (Kuhn 1962) sense, scant theoretical innovation seems to have emerged from these studies. Some researchers explain the lack of theoretical breakthroughs with the lackadaisical, incomplete, or inaccurate application of grounded theory principles. Grounded theory, they argue, has been used to label any research endeavor that involves coding, any form of qualitative data analysis, and any kind of theory construction. Research that claims to be grounded often has very little to do with the original methodological precepts, using the label "grounded theory" as a shorthand for qualitative research and the lack of a well-articulated analytical strategy (Hood 2007; Titscher et al. 2000). Many others see grounded theory's focus on induction as a critical weakness stymieing theory development. In the original book and especially the continued work of Glaser, the hallmark of grounded theory has been letting new theory emerge from data without theoretical preconceptions. Thus, Wacquant dismissed grounded theory as "an epistemological fairytale" (2002:1481), and more charitable critics simply point out that due to its inductive focus, grounded theory has not delivered on its promise to develop theories (Emerson 1987; Snow, Morrill, and Anderson 2003).

Recently, some researchers have argued that because of the purported emphasis on generating new theory, grounded theory is epistemologically much closer to what pragmatist scientist-philosopher Charles S. Peirce called abduction: a central concept in his theory of logic and inference that denotes the creative production of hypotheses based on surprising evidence (Coffey and Atkinson 1996; Haig 1995; Kelle 2007; Locke 2007; Reichertz 2007; Strubing 2007). These authors, however, are mostly concerned with elaborating the place that abduction plays within the grounded theory project (see especially Locke 2007; Reichertz 2007; Strubing 2007). Indeed, some of the leading figures in the grounded theory movement have also moved in this direction. Thus, Charmaz (2000, 2006, 2009) has advocated for a "constructivist" grounded theory and has called attention to the reflexive character of data analysis as an interactive and iterative process.³ In her most recent writings, Charmaz has also mentioned abduction in the framework of such a constructivist grounded theory (2009). Similar to other grounded theorists, however, Charmaz positioned abduction as secondary to induction: "Grounded theory begins with inductive analyses of data but moves beyond induction to create an imaginative interpretation of studied life. We adopt abductive logic when we engage in imaginative thinking about intriguing findings and then return to the field to check our conjectures" (Charmaz 2009:137–38). According to this perspective, abduction reflects the process of creatively inferencing and double-checking these inferences with more data. As such, abduction fits in with the traditional grounded theory recommendation to move back and forth between data and theory iteratively.

While we share much with Charmaz's goal of infusing grounded theory with a pragmatist theory on inference, we argue for a much more radical rethinking of the relation between data and theory construction. As we develop below, rather than thinking about abduction as a point of conjecture within a broader

inductive framework, we propose an analytical approach that privileges abduction. We argue that in the process of theory construction, abduction comes first—temporally and analytically. While grounded theory still offers useful tools for the organization of qualitative research, it is only in relation to abduction that theory construction becomes meaningful.

Instead of using Peirce's theory of inference as a way to legitimize grounded theory, we thus construct *abductive analysis* from a grounded theory foundation to foster theoretical innovation. Abductive analysis constitutes a qualitative data analysis approach aimed at theory construction. This approach rests on the cultivation of anomalous and surprising empirical findings against a background of multiple existing sociological theories and through systematic methodological analysis. As such, it requires a fundamental rethinking of core ideas associated with grounded theory, specifically the role of existing theories in qualitative data analysis and the relationship between methodology and theory generation.

Our argument proceeds in three stages. First, we develop a Peircian-pragmatist approach to theory construction. After critically evaluating the role induction played in grounded theory, we outline the logic of abduction and examine how potentiality, in the form of data items, can be turned into theoretical generalizations. Second, as we show, a contemporary reworking of Peirce's notion of abduction rests on the ability to recognize a finding as surprising in light of existing theories and presumes in-depth familiarity with a broad range of theories. As opposed to both grounded theory and approaches that assume that we address data "with our favorite theory" (Burawoy 1998:16), we show that if we wish to foster theory construction we must be neither theoretical atheists nor avowed monotheists, but informed theoretical agnostics. Third, we theorize why the methodological heuristics of grounded theory, what we see as grounded theory's lasting contribution to qualitative sociology, provide researchers with opportunities to develop novel theoretical insights. We argue that grounded theory's meticulous methodological guidelines of iterative rounds of coding and memo writing facilitate theory construction through processes of revisiting, defamiliarizing, and alternative casing. Throughout the article we make the point that allowing for observational surprises or puzzles should be a central object for qualitative research design, and although there can be no set formula for theory construction, specific forms of research organization can maximize the potential for original theoretical contributions to emerge.

THE INDUCTIVE DILEMMA OF GROUNDED THEORY

In the 1960s, Glaser and Strauss perceived a growing division of labor between theoreticians and empirical researchers: Theorists such as Parsons and Blau created broad "logico-deductive" theories that would then orient the work of empirical researchers in a feedback cycle of refutation. Surveying the theoretical landscape, Glaser and Strauss argued that this approach generated theories with little connection to substantive social life because researchers would force data into the straightjacket of preexisting concepts. Instead, they favored generating theories based on the "emergence" of theoretical categories through a process of constant comparisons between groups sampled on theoretical grounds. In *The Discovery of Grounded Theory*, they repeatedly admonished researchers not to be led astray by an early commitment to existing theory: "An effective strategy is, at first, literally to ignore the literature of theory and fact of the area under study, in order to assure that the emergence of categories will not be contaminated by concepts more suited to different areas" (Glaser and Strauss 1967:37).

Glaser and Strauss posited an "inductive method of theory development" that led to either a substantive or a formal theory through a heuristic process of abstraction:

To make theoretical sense of so much diversity in his data, the analyst is forced to develop ideas on a level of generality higher in conceptual abstraction than the qualitative material being analyzed. . . . If the analyst starts with raw data, he will end up initially with a substantive theory. . . . If he starts with the findings drawn from many studies pertaining to an abstract sociological category, he will end up with a formal theory pertaining to a conceptual area. (Glaser and Strauss 1967:115)

Glaser and Strauss proposed a “constant comparative method” that should be evaluated based on the transparency of the methodological process and the resulting conceptual framework: “Do the categories fit and work? Are they clearly indicated by data, and do they explain, predict, and interpret anything of significance?” (Glaser and Strauss 1967:91). Theoretical sampling suggests sampling comparison groups based on “the *theoretical relevance* for furthering the development of emerging categories” (Glaser and Strauss 1967:49). In this way, they aspired for grounded theory methodology to produce what Merton called middle-range theories “between highly abstract theory and the multitude of miniscule substantive studies” (Glaser and Strauss 1967:97).

At the same time, Glaser and Strauss noted that theoretical insights require the cultivation of a personal quality they called “theoretical sensitivity,” consisting of the “ability to have theoretical insight into an area of research, combined with an ability to make something of insights.” Theoretical sensitivity consisted of an “armamentarium of categories and hypotheses on substantive and formal levels.” Yet once again, they qualified their call for such theoretical sensitivity with the strong admonition that creativity is lost when sociologists commit themselves to “preconceived,” “doctrinaire,” or “pet” theories (Glaser and Strauss 1967:46). From the beginning, then, their commitment to an inductive approach created an epistemological and practical dilemma: Researchers were admonished to generate new theory without being beholden to preexisting theories, but they still required theoretical sensitivity based on a broad familiarity with existing theories to generate new theories.

This contradictory advice sidestepped a logical problem: Induction does not generate theory. Glaser and Strauss’s approach to induction resembles the approaches of early empiricist philosophers who argued that the only reliable theories are those generalized from observable data. Francis Bacon had indeed argued in his 1620 *Novum Organum* for freeing one’s mind from theoretical biases before conducting research, letting go of the “idols” of preconceived notions (Bacon [1620] 1994). However, even contemporary philosophical rationalists attacked Bacon’s “naïve empiricism” (Chalmers 1999), and his philosophy was dealt a devastating blow by Hume’s “problem of induction” and Kant’s critique of any claim to naturally perceive causal relations. Most philosophers of science, at least since the waning of the 1930s’ “Vienna circle” of logical positivism, take as a starting point that observation is necessarily theoretically informed (e.g., Galison 1987; Kuhn 1962; Lakatos 1978). Induction may have an important place in research, but its strength does not lie in generating new theories.

THE LOGIC OF ABDUCTION

A number of authors have recently argued that the ultimate goal of grounded theory—the construction of new theories—calls for what pragmatist Charles S. Peirce labeled using the “peculiar” term (Peirce 1935:525) *abduction* (Coffey and Atkinson 1996; Haig 1995; Kelle 2007; Locke 2007; Reichertz 2007; Strubing 2007). The Latin etymology of *abduction* suggests a leading away. In the context of research, *abduction* refers to an inferential creative process of producing new hypotheses and theories based on surprising research evidence. A researcher is led away from old to new theoretical insights.

Whereas logical empiricist philosophers of science such as Popper, Reichenbach, and Braithwaite assume a sharp division of labor between discovery and justification (see Siegel 1980), Peirce treated scientific work as an ongoing act wherein “discovery” and “justification” are inseparable moments. Although Peirce took the natural sciences as his model, the basic logical model of abduction has a wider application. Peirce positioned inference within the act of meaning making; logic was inseparable from semiotics. His approach rested on abduction as the “process of forming an explanatory hypothesis” (Peirce 1934:171) and the only logical mechanism that introduces new ideas into a scientific body of knowledge. Although Peirce’s understanding of abduction evolved throughout his career, there is a core set of ideas that present abduction as a synthetic inferential process involved in the production of hypotheses (Fann 1970).

Abduction has a logical form distinct from induction and deduction. Deductive reasoning begins with a rule and proceeds through a case to arrive at an observed result, which either demonstrates the rule or falsifies it. Thus, the general form of deduction is as follows:

All A are B.

C is A.

Thus, C is B.

Induction, in contrast, starts with a collection of given cases and proceeds by examining their implied results to develop an inference that some universal rule is operative:

All observed A are C.

Thus, all A are C.

The inductive rule gains certainty with the multiplication of cases, although, as we noted above, the very definitions of A and C and the connection between them cannot themselves be explained by induction.

Last, abduction starts with consequences and then constructs reasons:

The surprising fact C is observed.

But if A were true, C would be a matter of course.

Hence, there is a reason to suspect that A is true. (Peirce 1934:117)

In other words, abduction is the form of reasoning through which we perceive the phenomenon as related to other observations either in the sense that there is a cause and effect hidden from view, in the sense that the phenomenon is seen as similar to other phenomena already experienced and explained in other situations, or in the sense of creating new general descriptions. Abduction is the most conjectural of the three logics because it seeks a situational fit between observed facts and rules.

In his later writings, Peirce considered abduction to be the first step in a methodological process of scientific inquiry that also required induction and deduction (Fann 1970). “Abduction is the process of forming an explanatory hypothesis. It is the only logical operation which introduces any new ideas; for induction does nothing but determine a value, and deduction merely involves the necessary consequences of a pure hypothesis” (Peirce 1934:171). In Peirce’s view, then, abduction is an integral process of the scientific method. Once a hypothesis has been formed, deduction helps work out the hypothesis by providing a plausible generalization or causal chain. Induction constitutes the evaluation of the hypothesis because it provides the data that should conform to the deductively delineated premises. Abduction, Peirce noted, provides less certainty than induction, and both of those processes were less secure than deduction, but abduction had innovative potential. Induction was able to classify only by grouping particulars in a preformed general category, while abduction formulated the explanation, the category into which observations would fall. Abduction suggested explanations, which were then formalized into deductions, while induction confirmed them through empirical testing: “Abduction seeks a theory. Induction seeks for facts” (Peirce 1958:217–18).

Within Peirce’s broader theory of inference, meaning, and action, people constantly perform abduction in their everyday life, continuously recalibrating their expectations of the future when they face surprising phenomena.⁴ Peirce distinguished two kinds of surprise: novelty—or a new experience—and anomaly—or an unexpected experience. In science, surprising findings call for an explanation. Peirce conceptualized the process of abduction as both a logical inference and a flash of insight occurring when one’s mind wanders (see Reichertz 2007). As Peirce put it:

It is an act of *insight*, although of extremely fallible insight. It is true that the different elements of the hypothesis were in our minds before; but it is the idea of putting together what we had never

before dreamed of putting together which flashes the new suggestion before our contemplation.
(Peirce 1934:181)

The problem was not so much to come up with a good hypothesis but to decide which hypothesis was worth pursuing: How would we choose one particular direction within an endless universe of possibilities?

Even Peirce's most avid supporters considered his solution for discriminating between competing hypotheses a problematic part of his philosophical writings on abduction (e.g., Anderson 2005; Fann 1970; Paavola 2005; Rescher 1978). As Paavola (2005) argued, Peirce approached this question using three kinds of argumentation. He sometimes reverted to metaphysical and theistic arguments, but most prominently, Peirce posited a naturalistic basis for abduction—as we are already within nature, we have acquired through the process of evolution an “affinity” to the way things actually work around us. Like William James, he argued that the complexity of the human mind implies a complexity of instincts (rather than a paucity of instincts). Peirce saw an “innate tendency toward a positive truth” (Peirce 1934:591) as such an instinct. After all, if chickens know the “correct” grains to peck at since birth, “why should you think that to man alone this gift is denied” (Peirce 1934:591)?

This highly problematic form of reasoning, however, was not the sole one Peirce used. In other places, Peirce stated that instincts should not be considered only tendencies people are born with but should also include the tendencies that people develop throughout their lives. According to this formulation, the “tendency toward a positive truth” is complemented by a cultivated perceptual insight—what Husserl (1960) would call “apperceptions” and “appresentations,” socialized ways of perceiving. Indeed, as Peirce (1934:181) wrote, “abductive inference shades into perceptual judgments.”

ABDUCTIVE ANALYSIS: THE ROLE OF THEORIES

Peirce's writings on abduction provide a refreshing direction for thinking about theoretical innovation, but the ambiguities of abductive reasoning result in awkward and impractical advice (Levin-Rozalis 2000). To make abduction pragmatically generative, the source of the abductive process should be elucidated, bracketing any natural affinity between person and world (Locke, Golden-Biddle, and Feldman 2008).

Abduction should be understood as a continuous process of conjecturing about the world that is shaped by the solutions a researcher has “ready-to-hand” (Heidegger [1927] 1996). Instead of “natural instinct,” we argue that socially cultivated and cultivatable ways of seeing become the preconditions for abductive reasoning. The substitution of a “truth instinct” for cultured knowledge provides a way to conceive of abduction as socially located, positional knowledge that can be deepened and marshaled for theory construction. It also allows us to gain insights from the literature on positionality, wherein much is made of the fact that the researcher is part of the world of the people studied. This being-in-the-world, however, is far from being a guarantor for truth but is a core issue to be grappled with, inevitably leading to partial, historically situated insights, and provoking questions of scientific authority and representation (Atkinson 1990; Marcus and Fischer 1986). The rich sociological and anthropological literature on positionality has called for diverse forms of epistemological accountability, where critically interrogating a researcher's biography, intentions, and procedural principles offers a clarification of the position from which knowledge had been culled (Macbeth 2001).

The examination of the qualitative researcher's role in the world resembles earlier methodological approaches exhorting researchers to be cognizant of reactivity and research roles (Adler and Adler 1987; Becker 1967; Hammersley and Atkinson 1983). Qualitative research as diverse as autoethnography (Ellis 1995), standpoint feminism (Smith 2005), interpretive interactionism (Denzin 2001), reflexive ethnography (Burawoy 2003), and critical race ethnography (Collins 1992) put positionality at the heart of methodology. At its core, the arguments of the literature on positionality are quite simple. We always occupy a certain position (as parents, as academics, as middle-class Latinas, etc.), and this position colors our vision, by (1) allowing us only a partial access to the field and shaping the way in which our interlocutors interact

with us and (2) arming us with prototheories of the world, ways to “case” the phenomena in front of us that are already deeply ingrained in the ways we perceive the world.

This does not mean, however, that we should assign primacy to fixed, generic identity categories, a form of “academic paint-by-number landscape” (Robertson 2002:790). The danger here is to use these ready-made categorizations to obliterate the complexity of personal and professional lives, to self-stereotype, and to essentialize the researcher in ways that complacently exude authority (Brewer 2000; Murphy and Dingwall 2003). Positions are complex and situated—including the obvious race-class-gender trifecta and also specific life histories and intellectual biographies (Gross 2009b). We may see through gendered and racialized eyes, but we also see through the theoretical lenses of the training we went through, the theories we read, the political allegiances we may have fostered (see, e.g., Brubaker 1993).

Abduction thus depends on the researcher’s cultivated position. The disposition to perceive the world and its surprises—including the very reflection on one’s positions in this world⁵—is predicated on the researcher’s biography as well as on an affinity and familiarity with broader theoretical fields. Abductive analysis, consequently, rests for a large part on the scope and sophistication of the theoretical background a researcher brings to research. Unanticipated and surprising observations are strategic in the sense that they depend on a theoretically sensitized observer who recognizes their potential relevance.

This view of abduction necessitates a radical shift from the traditionally reluctant engagement of theoretical literature in grounded theory. Discovering new theories depends on the inability to frame findings in existing theoretical frameworks as well as on the ability to modify and extend existing theories in novel ways (James [1907] 1981). In-depth knowledge of multiple theorizations is thus necessary both to find out what is missing or anomalous in an area of study and to stimulate insights about innovative or original theoretical contributions. Rather than engaging with the scholarly literature at the end of the research project, as inductivist approaches have often advised, abduction assumes extensive familiarity with existing theories at the outset and throughout every research step.

We are not, however, advocating a return to deduction based on existing theories. Knowing the literature and being professionally positioned is far from coming to the field to verify, falsify, or modify a unified, firmed-up theory, still less finding only what we expect to find. This is because sociology is not—and never was—a paradigmatic science, in the sense Kuhn (1962) gave the word. There has never been only one disciplinary matrix into which all knowledge fits, not even in the heyday of structural functionalism. “Knowing the theory” means, in essence, knowing the theories. They are sensitizing notions that inform research but do not determine the scope of perceivable findings (Blumer 1954). If our aim is to enrich the abductive possibilities of research, theoretical breadth is encouraged (Henwood and Pidgeon 2003). In much the same way that Abbott (2004) explores theoretical debates for their heuristic potential, existing theories read either as an argument or as a way of argumentation, a way of seeing that may foster further theoretical innovation.

As this discussion clarifies, abduction is far from being the privilege of grounded theory methodology. Other qualitative approaches have recommended that researchers enter the field prepared and well read. To take a prominent example, the Manchester school’s extended-case method, as reinterpreted by Michael Burawoy (2009), is often mistaken for a deductive qualitative research approach. A closer look at its epistemological grounds in the work of Lakatos (1970, 1978) shows that it too aims at reworking theory by seeking out unexpected findings, focusing on the double fitting of theory and anomalous observations to create theoretical protection. Burawoy is partial to a Marxist-Gramscian approach that locates ethnographic observations in a field of globalizing social forces. Yet his general thrust supports abduction, albeit in an overly narrow way. As several observers have pointed out (Eliasoph and Lichterman 1999; Tavory and Timmermans 2009), the extended case method begins from a world already theorized; the general contours of the narrative are provided by one well-defined theory. We argue, however, that the world is always conceived (both prototheoretically and theoretically) in multiple ways. Indeed, abduction and theory construction would become quite predetermined if it were not (Stark 2009; Vedres and Stark 2010). In addition, as we show below, extended case method lacks the methodological heuristics to draw surprises out of empirical material.

To understand this difference, however, we need to do more than note that such informed theoretical agnosticism changes our relationship to the field and the kind of hypotheses and data-gathering tactics we can use. We need to clarify what we mean by “theory”—both in terms of our goal and in terms of the theoretical inspirations in the field. In terms of inspiration, we argue that whatever provides researchers with a way to ask new questions or see the world differently is potentially useful—from erudite abstractions to local explanatory frameworks and personal experiences (Strauss 1987). In that sense, the only criterion for useful inspiration is the general pragmatist guideline that theories are ways either to ask new questions or to make new observations possible (Dewey 1925; James [1907] 1981).

In terms of the theories that abductive analysis helps generate, however, our criteria need to be narrower. The theories developed in abductive analysis denote an attempt to generalize causal links and descriptions of the world out of particular empirical instances (see also Abend 2008:177–79; Gross 2009a). Such theories depend on the fit with observations and their plausibility in light of alternative theoretical accounts. Pragmatically speaking, better theories allow for understanding of more and a broader variety of phenomena. As a form of generalization, theory allows us to move between instances within the same study and between studies as well as to expect certain things to happen and explain how and why certain events have happened. Abductive analysis specifically aims at generating novel theoretical insights that reframe empirical findings in contrast to existing theories.

There are other forms of “sociological theory,” such as an involvement with classical theory or a production of an epochal worldview. While those may be useful in terms of inspiration, and while they also may call for abductive reasoning, this reasoning is not necessarily related to the empirical research act in the same way. At the other end of the spectrum, although even a list of variables or a simple description includes prototheoretical assumptions regarding relevance (Weick 1995), the theories we are after are more explicit about their pretenses if only because otherwise any form of writing can be read as theory.

An example of the added analytical value of a broad theoretical base, and its use in developing theory, can be found in Diane Vaughan’s historical ethnography of the space shuttle *Challenger* launch decision and accident. Vaughan was attracted to grounded theory’s emphasis on making constant comparisons across various cases but qualified her use of grounded theory with the proviso that “we always have some theories, models, or concepts in mind” (Vaughan 2004:319). Having already conducted three earlier case studies, Vaughan approached the *Challenger* case with a Mertonian-inspired organizational theory of misconduct that suggested an interplay between three sets of factors: forces of competition and scarcity as pressures to violate laws, rules and organizational structure and processes as opportunities to violate, and a regulatory structure that systematically fails to deter violations (Vaughan 1983). Vaughan intended to further strengthen her theory by selecting a new case that allowed her to elaborate her theory across various organizational forms. The report from the presidential commission on the *Challenger* accident seemed to confirm the initial impression of misconduct: Its authors pointed to flawed decision making in which NASA managers knowingly took risks based on economic pressures.

Important for our discussion of abduction, Vaughan thus approached the case with a layering of preexisting theoretical tools (such as interactionism, Bourdieusian field theory, and neoinstitutionalism) and her original syntheses and innovations culled in previous studies. These tools, however, did not fit the *Challenger* case. Vaughan kept finding disagreements in testimonies by engineers and managers that contradicted the conclusion of misconduct. Vaughan described the critical breakthrough:

To determine whether this case was an example of misconduct or not, I had decided on the following strategy: Rule violations were essential to misconduct, as I was defining it. . . . I chose the three most controversial [rule violations] for in-depth analysis. I discovered that what I thought were rule violations were actions completely in accordance with NASA rules!” (Vaughan 2004:320)

Eventually she abducted her data as an organizationally produced mistake instead of misconduct.

When Vaughan realized that a mistake lay at the origin of the space shuttle disaster, she began reconstructing a chronology of all decisions about the solid rocket boosters between 1977 and 1985. Thus, theoretical

preparation resulted not only in a larger armamentarium for analysis but also in a different methodological strategy for returning into the field in the ongoing back-and-forth between analysis and data gathering. The importance of the structural position and specialization as suggested by new institutionalism and Bourdieu's notion of habitus also prompted Vaughan to cross-check each individual's testimony, interview data, and actions as reflected in historical documents. This, in turn, led her to the literature on professionalization of engineering and managerial cultures. At the end of her research, Vaughan theorized the NASA decision-making process as one of organizational conformity, in which gradually shifting local beliefs of risk acceptability embedded in professional engineering and managerial cultures valuing compromises in an environment of structural secrecy, created an organizational process that normalized deviance (Vaughan 1996).

Vaughan's project also demonstrates the importance of deductively checking novel explanations with new data to test theoretical robustness. After she delineated an organizational process that explained the normalization of previously deviant O-rings, Vaughan analyzed the teleconference call in which the decision to launch *Challenger* was made in detail. During the call, the participants discussed whether the launch should be postponed due to the cold temperature. Vaughan observed that

the same factors that explained the normalization of deviance in the history of decision making explained the decision making on the eve of the launch! The production of culture, the culture of production, and structural secrecy worked together, as before, normalizing yet another anomaly—unprecedented cold temperature—and systematically producing a decision to proceed with the launch. ... All participants conformed to the dictates of the culture of production, thus expanding the bounds of acceptable risk one final time. (Vaughan 2004:337)

The theoretical analysis Vaughan constructed thus emerged out of empirical contradictions generated by her in-depth familiarity with existing theories. Within this theoretical context, "another technical mistake, a misunderstood procedure, an unforeseen contingency, action or actor" (Vaughan 1996:335) abductively pushed the analysis along.

ABDUCTIVE ANALYSIS: THE ROLE OF METHOD

If the contexts of discovery and justification are seen as a seamless whole, the acts of gathering data and primary analysis become sites for fostering abductive reasoning. Even with a firm theoretical backing, theoretical misfits do not automatically develop when immersing oneself in a research site. While such anomalies are opportunities to develop new theoretical insights and modify existing theories, researchers need to foster an environment that allows doubt to develop (Locke et al. 2008). This conducive environment is predicated on a series of preestablished steps through which the researcher revisits the phenomenon—in other words, on method.

Here, we theorize grounded theory's methodological steps of data analysis. Through the grounded theory heuristics of field note taking, theoretical sampling, coding along various dimensions, memo writing, constant comparing, and sorting and diagramming memos (Charmaz 2006; Strauss 1987), qualitative researchers are urged to subject their work to a series of tedious and time-consuming methodological sequences. Generally, taking detailed field notes and precise transcriptions is understood as a way to check against faulty memory and against the tendency—well established in the study of memory and of rumor—to modify our field experience retroactively so that it fits better with our theoretical proclivities or with the kind of narrative we want to tell (Allport and Postman 1947; Schechter 1997). In this sense, these steps do what many methodological guidelines do: They increase the resistance of the phenomenon to our interpretations. Similarly, coding and memo writing are designed to ensure that we thoroughly familiarize ourselves with our data, that we do not forget the interactions we have been privy to once we put them down on the page.

Such methodological steps, when performed against a theoretical background, can also serve as heuristics for the construction of original theoretical insights and are thus a crucial part of abductive analysis. To

develop how grounded theory methods help in abductive analysis, we deepen the question of perception in the research process. Remaining with what we see as the most generative of Peirce's ways of explicating abduction, we focus on the relationship between theoretically cultivated ways of seeing the world and abductive reasoning. Where theories allow us initially to see the phenomenon in sociologically interesting ways, methods are designed to compel us to revisit the same observation again and again, defamiliarize the known world, and apply alternative casings to our observations.

Revisiting the Phenomenon

Although perception is usually treated as a one-time experience, the importance of qualitative methods in the context of theory construction stems first from researchers' ability to revisit the phenomenon they study in light of existing theoretical accounts.⁶ The inscription of observation (whether through field notes or through interview transcripts) is not solely performed as a way to check for faulty memory and cognitive biases but to sensitize different theoretical approaches. Drawing on the work of phenomenological philosopher Jean-Luc Marion (2002), we argue that even without methods, experiencing the phenomenon should not be conceived of as a singular occurrence, sealed and done with after the first encounter. Rather, in the language of Marion, perception is always "saturated." That is, the phenomenon always overflows our initial perception of it. As we attend to the phenomenon over time, we revisit our experience, and as we revisit it, we reexperience it in different ways.

One of the examples given by Marion (2002) for such "overflowing of the phenomenon" is that of a man looking at a picture in a museum, and halfway into this visit, finding that he thinks about it again, understanding it differently and seeing things he missed when he was physically in front of it. As he walks around different exhibits, the temporal shift is followed by situational changes, and with them, the proclivity to see things in new ways. Thus, for example, he reexperiences the painting differently when he suddenly realizes that some aspects look a lot like those of other drawings made at the same period—something he might realize only after walking through the exhibition for a while.

In theoretical terms, the situational specificity of the reliving of experience allows us to position our perception in new relations to other phenomena. This revisiting, forcing the researcher to reevaluate and rethink mundane experience to break the habituation of perception (Kilpinen 2009), is heightened through detailed field notes, transcriptions, coding, and memo writing. Data that have not been very "luminous" (Katz 2001b) in the field often yield insights through repetitive methodological processes. To return to the concept of "saturation" offered by Marion (2002), the methodological process can be seen as a contrivance for reexperiencing when taking advantage of the ways the same observation changes as it is perceived in different points of time, from different theoretical vantage points.

In terms of furthering abductive analysis, revisiting the phenomena is a way to harness temporality in the service of theory construction. The key insight we use in Marion's (2002) depiction of "saturation" is that with time elapsed, a phenomenon's relevance changes. Thus, recurrent revisits, when done carefully, almost necessarily provide what Walter Benjamin, writing about history, called an "image that flashes up at the moment of its recognizability" (Benjamin [1940] 2003:301), a theoretically salient image that illuminates different aspects of the data and foregrounds previously undistinguishable facets.

Defamiliarization

Marion's (2002) notion of saturation is complemented by another effect of grounded theory methodology: defamiliarization. Although the question of defamiliarization was dealt with in the pragmatist writings on habit, its effect was best captured in the literary criticism movement of the early twentieth century known as Russian formalism. In a classic essay, the founder of the movement, Victor Shklovsky ([1917] 1965), argued that poetic language gains its potency from the defamiliarization of the language and experience of everyday life. Either through minute description, the use of metaphor, or simply unnatural line breaks in

poetry, we find ourselves confronting our everyday experience as unfamiliar, gaining a deeper appreciation for it or thinking it anew. Objects that were relegated to the background of our experience, as they were too taken for granted to be given a second thought, suddenly become possible focal points. This line of reasoning was later taken on by others, becoming the technique of “alienation” employed by Brecht (1974) and finding its way as the object of sociology in the work of Peter Berger (1963), who argued that one of the ways in which sociology enriches our understanding of social life is by estranging the familiar.

The act of inscription throughout the methodological sequence functions as such a technique of defamiliarization. As anthropologist Jack Goody (1977) noted more broadly, we actually think differently in textual than in atextual modes of engagement. The inscribed text both problematizes and crystallizes things that we would gloss over in atextual accounts. Certain similarities, logical fallacies, lists, and detailed comparisons become possible as technologies of the intellect. Rather than lamenting the inscription of experience as a loss of immediacy, abductive analysis creates a different—defamiliarized—object that provides us with opportunities and modes of thought that we gloss over in our immediate experience. Defamiliarization thus augments the researcher’s ability to revisit the data in ways that increase the fecundity of abductive reasoning. Whereas revisits are analytically dependent on shifting relevancies over time, the artificiality of inscription allows the researcher to create semantic distance from the taken for granted.

Alternative Casing

Although there can be no standardized protocol for theory construction, the complementary processes of revisiting and defamiliarizing maximize the possibilities of abduction. Defamiliarization ensures that we mull over aspects we took for granted, and revisiting allows us to return to the same observation transsituationally. When these processes take place in a context of existing theories, we can “case” our data in different theoretical ways as we go along (Ragin and Becker 1992; Tavory and Timmermans 2009). Practically, researchers should think through different conceptual and theoretical frameworks in both coding and memo writing. They should force themselves to take a relatively small data excerpt and work through it in detail in light of their theoretical expertise, trying to find as many possible ways to understand the data as can be found. How do the data look from Abbott’s (1988) system theory of professions, Heimer’s (Heimer and Staffen 1998) organizational theory of responsibility, or Suchman’s (2007) theory of situated action? Each casing abstracts and highlights different aspects of the phenomenon, rendering it comparable to different phenomena and turning it into a generalization that then can be linked to other fields and theories.

As our perception of the phenomenon is colored by theoretical formulations, some of those casings will easily fall within the realm of existing theories. Others, however, may be more difficult to fit in. Although the literatures in which we are steeped guide the analytical process, and make revisiting and defamiliarization worthwhile, the reality is that careful coding usually means it is not that obvious to impose theory on data. As Winship (2006) noted in the context of public policy decisions, decisions often emerge in the process of fiddling with, and puzzling out, aspects of the situation. Careful coding almost inevitably requires further definition and operationalization of concepts, processes, and theoretical links, adding surprising pieces to the puzzle at hand.⁷ Field notes and coding are thus processes designed to maximize abductive analysis, where we force ourselves to remain with the phenomenon and try to form as many links and hypotheses as possible in light of our theoretically positioned knowledge, even after we feel we have no other possible casings to provide. The trick is to continue analyzing the data word by word, line by line, paragraph by paragraph, to “turn over our recollection of observed facts” (Peirce 1934:183, 1958:36). Often, the process of puzzling through the data not only will create a new puzzle but may actually construct a new game with new rules for thinking about the relationship between different pieces.

The switch from induction to abduction thus requires a gestalt switch in which the theoretical background is foregrounded as a way to set up empirical puzzles (Adler and Adler 2009). Heuristics for such alternative casing that stimulate abductive reasoning are central to grounded theory methodology and to

other sociologists interested in theory construction (Abbott 2004; Becker 1998; Corbin and Strauss 2008; Strauss 1987; Vaughan 1992). Expanding the scope of the theory through “constant comparisons,” for example, is a critical strategy in grounded theory, as it is in the work of Everett Hughes ([1945] 1971). The purpose of this heuristic is to compare new data excerpts with concepts under development to examine cases that could be expected to conform to the emergent theory and determine whether the theory explains their variation. Are problems with awareness relevant only for dying patients in hospitals, or do similar interactional problems about one’s status emerge in other institutional locations such as schools or prisons (Glaser and Strauss 1965)? Snow et al. (2003), similar to Vaughan (2004; analogical theorizing), locate this kind of heuristic for theory extension through comparison in a Simmelian project focusing on recurring theoretical “forms” across diverse contexts (see also Zerubavel 1980). The goal of this heuristic precisely is to force researchers to rethink their data, to try and see it in light of different cases, to case it in as many ways as possible. The choice for comparison groups, of course, depends on the researcher’s familiarity with research and theory. However, such a heuristic forces the researcher consciously to case the observations in light of other instances taken from the literature; the defamiliarization of observations is coupled with a sustained attempt to reexperience them as part of different cases.

Stefan Timmermans’s (1999a, 1999b) study of resuscitative efforts in two emergency departments offers an example of the way that grounded theory–inspired methods allow for the abductive construction of theory.⁸ One empirical puzzle in Timmermans’s study was the tremendous variation in the extent to which the emergency staff were committed to saving a life during resuscitative efforts. As in Vaughan’s case, there was an official explanation for such variation: Emergency medicine proposed that life-saving efforts depended on the presence of vital signs. This official explanation belied the reality of observed resuscitative efforts, however. In some situations, the staff did not seem to want to regain a patient’s pulse, while for other patients they would continue resuscitating even when signs of death had obviously set in. Coding of the empirical data in the “grounded theory tradition” (Timmermans 1999b:211) revealed differences in intent to bring the patient back to life along a variety of patient, staff, and organizational characteristics, but no clear organizing principle stood out.

It was only when revisiting the data while reading Sudnow’s (1967) study of dying in hospitals, *Passing On*, that the variation in the emergency department gained theoretical traction. Sudnow argued that dying in hospitals rests on a patient’s position in an institution-specific moral evaluation. Certain salient patient characteristics added up to a presumed “social worth,” and the staff interacted differently based on their assessment of the patient’s position in this moral hierarchy. While reading Sudnow, Timmermans was transcribing interviews with emergency department staff and was struck by a casual statement made by a nurse who commented that she would always resuscitate a young person, even a person who had a living will, “because to me that is the same as stating suicide in a passive aggressive kind of way.” Taken aback by the equation of a living will with suicidal ideation for a young person, Timmermans suddenly realized that there was an organizational principle in the variation: A young patient, a patient known to the staff, or a patient with whom the staff identified was more likely to generate an aggressive resuscitative effort, while a patient with a history of substance abuse or an old patient had the opposite effect. Revisiting field notes with renewed rounds of careful coding in light of these emerging theoretical insights revealed that a key element in resuscitative fervor was the patient’s ability to transcend anonymity.

Yet simply extrapolating Sudnow’s insights to the current situation was dissatisfactory because every aspect of U.S. health care had changed drastically during the past 30 years. Sudnow’s theory needed further theoretical development to make the specificity of Timmermans’s findings stand out, to avoid glossing over the historically situated nature of the observations. To capture how forms of personhood mattered in this new historical juncture, Timmermans replaced Sudnow’s core concept of “social worth” with “social viability” to highlight that in the current configuration there was not only a systematic constitution of moral worth but a moral calculus attached to it, so that actions in the emergency department reflected a form of “rationing” centered on a collective assessment of a life worth saving (Timmermans 1999a). These insights in the persistence of social viability as a predictor of staff effort in resuscitation shifted Sudnow’s emphasis

on institutional factors to an analysis centered on professional power and informed a broader theory of the social rationing in medical care (Timmermans 1999a).

Timmermans's study also provides insight into the process of methodological defamiliarization by contrasting observations of resuscitative efforts with official accounts of resuscitating. The rationale behind resuscitation is a last-resort effort to save lives. On a case-by-case basis in the emergency departments, few lives were saved. At best, the staff succeeded in stabilizing some patients and transferring them to the intensive care unit. The staff, however, did not seem bothered by their lack of official success. They congratulated themselves when running a smooth resuscitative effort or when they were attentive to family needs. In field notes, Timmermans observed that in almost every situation in which a patient failed to survive, the staff considered their actions medically and morally sound in spite of a deceased patient. Timmermans then decided to write down the exact conversations during the resuscitative efforts and noted much casual joking, banter about TV shows, discussions of staffing and supplies, weekend planning or catch-up talk, and teasing of staff. The tone shifted dramatically, however, when relatives entered to pay their respects to the deceased. Remaining staff accompanied relatives respectfully, encouraging touch and farewells. These transcribed conversations not only defamiliarized but also ruptured the official purpose of resuscitating. Timmermans proposed a reversal: In practice, resuscitative efforts are not about saving lives but about "saving" sudden death. Resuscitative efforts disrupt the suddenness of an unexpected death and provide families some consolation that everything medically possible had been done to save a relative. Defamiliarization led to a deeper engagement with the death and dying, medical technologies, science studies, and sociology of work literatures (Timmermans 1999b).

THE ABDUCTIVE RESEARCH CYCLE

Abductive analysis involves a recursive process of double-fitting data and theories. An abductive inference involves making a preliminary guess based on the interplay between existing theories and data when anomalies or unexpected findings occur. If the existing theories fully account for the empirical phenomena, the researcher has simply verified an existing theory. As the examples of Vaughan and Timmermans show, however, pushing the data against existing theories will likely identify changed circumstances, additional dimensions, or misguided preconceptions. Anomalies, which are inevitably both empirical and theoretical, then require the development of tentative new theories built on inductive conceptualization of this data through intensive coding and other methodological steps. There is thus a recursive cascading of possible abductions in which one surprise suggests other elements that no longer fit (Agar 2006).

The recursive aspect of abductive analysis should be understood in two complementary ways. First, sharing research among a community of inquiry stimulates the articulation and refinement of theoretical constructs (see also Strauss 1987). With few exceptions, developing collaborative relationships, talking to other scholars, presenting at conferences and colloquia, circulating working papers, and the like are crucial sites for the production of theory. Creative theory development does not occur randomly but often begins with inhabiting a marginal structural position in a broader intellectual milieu that stifles ambition (Becker 1982; Collins 1987; Farrell 2001). Collins observed that "thinking is a conversation with imaginary audiences"; rather than locating creativity with the isolated intellectual, he emphasized that "high degrees of intellectual creativity comes [sic] from realistically imagining existing or prospective *intellectual audiences*" (Collins 1987:67). Intense face-to-face interactions among a small collaborative circle of like-minded scholars exchanging ideas with mixtures of encouragement and criticism enhance the veracity of such imaginary audiences (Farrell 2001). Besides support, such collaborations may help hone a research ethic focused on deliberately seeking and organizing a novel theoretical program aimed at higher levels of coherence and generality (Heilbron 2011).

Consensus is not necessary in research collaboratives. As David Stark (Stark 2009; Vedres and Stark 2010) has argued, innovation tends to occur where more than one standard is at play—more than one order of worth (Boltanski and Thevenot 2006). Indeed, it is often in the tensions between judgments, and in the

overlapping structure of members' professional and intellectual allegiances, that innovations arise. This, as we have shown, could be true on the level of the lone researcher who can case the data in multiple ways. But as Stark rightly points out, innovation more often arises in the arguments and debates between colleagues who are "multiple insiders" with simultaneous allegiances to more than one order of worth.

Second, abductive analysis further jump-starts both inductive and deductive forms of reasoning, which may be repeated as new anomalous findings emerge. Induction looks for the corroboration of generalizations, patterns, outliers, and salient themes in the data, while deduction suggests a reanalysis of existing data or new data-gathering rounds. The corroboration of the theory, as well as a process of "internal falsification" in which new data points refine an emerging argument (Timmermans and Tavory 2007), occurs through narrowing the class of empirical phenomena to which the new theory applies and reshaping the theoretical scope to make it better suited for the cluster of empirical phenomena we theoretically "lump" together (Katz 2001a).⁹ The result will be a new theory, emerging in abductive analysis through the iterative dialogue (both metaphorical and literal) between data and an amalgam of existing and new conceptualizations.

The recursive and iterative nature of abductive analysis not only generates but also culls and narrows possible theoretical leads. Although some abductions are productive, there are still many more dead ends and false starts than good ideas that culminate in theory construction. The weeding out of abductive prototheories is done through the process of "theoretical coding," sharing much with what Znaniecki (1934) and others (Katz 2001a) call "analytical induction." Here, the researcher attempts to test the emergent abductive hypothesis to further shape the "fit" between explanans and explanandum, between the theoretical framework developed and the observations explained by this account. Researchers deliberately aim to gather negative cases with related phenomena to progressively redefine the phenomenon to be explained to make it fit the explanatory theoretical factors. There is little methodological value in gathering confirming cases; the strategy is to look for negative cases or alternative explanations to account for the phenomena. This already complex way of thinking about research (see also Lakatos 1970) is further problematized by the fact that explanans and explanandum are not only honed and refined but sometimes thrown out to give way to a different casing, and often more than one casing is in mind at a given time.

CONCLUSION

Abductive analysis is a qualitative data analysis approach aimed at generating creative and novel theoretical insights through a dialectic of cultivated theoretical sensitivity and methodological heuristics. Abductive analysis emphasizes that rather than setting all preconceived theoretical ideas aside during the research project, researchers should enter the field with the deepest and broadest theoretical base possible and develop their theoretical repertoires throughout the research process. Theoretical relevancy is not limited to analogy but flourishes with theory-close and -far writings that inspire novel insights. Instead of theories emerging from data, new concepts are developed to account for puzzling empirical materials. The methodological precepts of grounded theory can stimulate abductive reasoning through a process of revisiting, defamiliarizing, and alternative casing in light of theoretical knowledge. The surprise, puzzle, or anomaly that may trigger a novel theory then emerges methodologically through careful data analysis against a background of cultivated theoretical expertise.

We anticipate diverging reactions from those within and without the grounded theory research community. From outsiders, we expect the following reaction: "Of course, all qualitative research is theory driven, and theory construction cannot occur without a strong base. That is precisely what 'nongrounded' theorists have been stating all these years." While we indeed argue for a strong theoretical foundation guiding qualitative research, our focus on preexisting theories differs from the way theories are used in alternative forms of qualitative data analysis in two ways. First, such approaches—for example, institutional ethnography or extended case method—purposefully eschew methodological "cookbooks," worried that they would result in a fetishization of methods and crass empiricism. Instead, they direct researchers to privileged theoretical data points or to specific heuristics for specifying and amending theory. The attraction

of abductive analysis is that it elicits theoretical innovations precisely through a double engagement with existing theory and careful methodological steps. While it is undoubtedly true that the myth of nontheoretical work was detrimental to the aims of grounded theory, theory construction without explicit methodology in qualitative analysis risks pursuing only preconceived ideas. Second, these approaches tend to suggest that the sociologist approaches an empirical site with a “favorite theory” (Burawoy 1998:16) in mind. As we have argued extensively in the article, we believe this to be unhelpful. It is through the engagement of data with a multiplicity of theorizations that we can make the most of the possibility of generative abduction.

On the other side of the spectrum, some within the grounded theory community may protest against downplaying what for many has been the most cherished aspect of grounded theory, namely, induction. The reality is, however, that inductive grounded theory as theory-engine is philosophically untenable. After half a century of trying, grounded theory has very little theoretical novelty to showcase. Without exception, the best qualitative research is steeped in various literatures and aims to contribute to these literatures. Also without exception, the most successful qualitative researchers are voracious consumers of substantive sociological theories, who use their reading as a touchstone for research (see also Becker 1998; Wilson and Chadda 2009). Not taking current scholarship into consideration risks not only ignorance but also the rediscovery of a well-developed domain.

Centering abduction and its relationship on both existing literature and methods of analysis suggests that theory construction is a skill developed through repeated exposure and close engagement with both data and related examples of theory construction. Much as Becker's (1982) *Art Worlds*, Merton's patterns of serendipity (Merton and Barber 2006:230–98), and Glaser and Strauss's pedagogical focus of teaching grounded theory to interactive groups (Morse et al. 2009; Star 1997; Strauss 1987), this skill set also contains an irreducible social component of exchanging theoretical ideas in a network of researchers. In this sense, our approach to theory construction resembles Chambliss's (1989, 2009) analysis of competitive swimmers. As Chambliss showed, becoming a competitive athlete depends on mundane routines, far from the image of the athletic *Übermensch*. To become a top swimmer, one needs physical equipment, social support, and much detailed and guided practice. Athletic excellence is, in Chambliss's demystification, not a physical starting point but a hard-honed outcome: partly dependent on careful practice and mundane routines, partly on social networks, on “cultural capital,” and even on seemingly ephemeral qualities such as tenacity. Like any craft, there are favorable conditions of possibility—conditions that can enable or obstruct the production of theory. It is in this socially fostered craftlike sense that abduction is feasible.

While our approach requires extensive theory and methodology training for qualitative researchers, we have been flexible regarding the kinds of theories most likely leading to innovations (Abend 2008), the components of such theories (Vaughan 2009), the scope conditions of theory construction (Walker and Cohen 1985), and the criteria of successful novel theories (Weick 1995). Instead, we have articulated an adaptable logic for theory discovery that will require further specification in research practice. The challenge, from our perspective, does not lie with the kinds of theories we begin with (as long as these are empirically grounded and offer an added inspirational value) but with the work of designing and conducting a research project. The goal of constructing theories via qualitative research requires a sophisticated research design that conceptually links a substantive topic with multiple bodies of theory. The theories we approach the field with will influence the details of such research design. At the same time, the research design requires an opening for the surprises and empirical challenges that stimulate abductive reasoning. The challenge, then, is to create “a state of preparedness for being taken unprepared” (Reichertz 2007:221).

ACKNOWLEDGMENTS

We thank Richard Bernstein, Neil Gross, Rob Jansen, Kay Jenkins, Colin Jerolmack, Nahoko Kameo, Jack Katz, Debi Osnowitz, Sara Shostak, and Diane Vaughan; the ethnography working groups at Northwestern University, the New School, and UCLA; and anonymous reviewers for comments on many, many earlier versions.

NOTES

1. Our approach to the definition of theory is, much like the rest of the article, informed by pragmatism. Our definition posits theory construction as an attempt to make sense of the world through generalizations of empirical phenomena. Theory as a specific kind of generalization allows us to move between data instances as well as to expect certain phenomena to happen and retrodict why certain phenomena have happened (see below).
2. As we make clearer below, other positions stress that theory is elaborated, or tweaked, in relation to novel and anomalous data. There is, however, a difference between tweaking a preconceived theory and constructing new theoretical accounts.
3. In addition, in an influential contemporary reformulation of grounded theory, Adele Clarke has linked Strauss's work on grounded theory with his symbolic interactionist-infused work on social worlds/arenas to create an analytical "theory-methods package" that examines a broad array of micro-macro conditions that make situated actions possible (Clarke 2003, 2005, 2009). Clarke's "situational analysis" offers different kinds of mapping as a heuristic to draw out situations and their conditions. In situational analysis, the traditional grounded theory steps of coding and memo writing take place against contemporary poststructuralist and postmodern theories guiding the researcher to a broad range of relevant themes in the data. While we share Clarke's commitment to broadening the theoretical scope of qualitative researchers, our approach is different. For Clarke, poststructuralist and interactionist theories are only one possible framework with which to approach analysis. However, grounded theory as a "theory-methods package" may be limiting, precisely because (as we show below) such an approach presumes knowing in advance how to organize empirical findings theoretically.
4. It is in this light that Peirce's equation of his pragmatism with the logic of abduction should be understood. As Peirce writes, "If you carefully consider the question of pragmatism you will see it is nothing else than the question of the logic of abduction" (Peirce 1934:195). At the same time, abduction relates to Peirce's habitual conception of action in which mental reflection and more mechanical actions form habits that allow people to coordinate actions and participate in new-to-them traditions (Kilpinen 2009).
5. Not surprisingly, even the notion that positionality matters requires theoretical cultivation. Each of the forms of reflexivity is situated in a specific theoretical literature that sketches out how biography and demography may affect the relationship between observable and observed and whether this relationship can be transcended (see, e.g., Bourdieu 1992). The early ethnographic tricks-of-the-trade advice on reactivity, for example, was situated in an interactionist, phenomenological, and later ethnomethodological literature (Lynch 2000) that conceptualized the observer-research participant relationship as a particular form of interaction (Denzin 1970).
6. These operations, obviously, change the experience (Marcus and Cushman 1982). However, insofar as notes, interview recordings, transcripts, and visual recordings evoke the observation, this still aids us in reconstructing the experience. Note also that our understanding of revisiting captures the phenomenology of seeing new dimensions in data, while Burawoy's notion of "focused revisits" constitutes a strategy to examine difference over time when a researcher revisits a field site of a previous researcher (Burawoy 2003).
7. This is implied in Blumer's distinction between sensitizing concepts that guide research and definitive concepts that offer clear benchmarks and measurements of the social world (Blumer 1954).
8. Due to massive amounts of documentary data, Diane Vaughan did not engage in the detailed coding and memo writing typical of grounded theory (Vaughan 1996).
9. This is, however, without its original purpose of finding universals (Znaniecki 1934).

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