The Power and Potential of Grounded Theory

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This conference is the second time I have given an address at the University of Leicester. When I arrived the first time, I trudged up the street from the train station pulling a suitcase behind me. A misstep on the uneven pavement caused a fall that smashed my glasses into my eyebrow. Such wounds often bleed profusely but may not be serious. Despite my protests, two young women called an ambulance, which arrived forthwith. The two emergency technicians examined, cleaned, and bandaged the cut with strips. They said that they thought it would heal without stitches but would be glad to take me to the hospital, should I wish to go. I agreed that a hospital visit was not necessary and promised to follow their advice to apply ice packs to the wound. At this point, the technicians looked at each other, nodded, and without saying a word between them, took their seats and drove me to my hotel. They left me at the hotel door with a swollen, red eye but feeling very well cared for. I began my opening address the next morning by telling the audience that I was giving whole new meaning to arriving in the UK with the Red Eye.

In the town where I live in the US, an emergency ambulance call enlisting the care of two emergency medical technicians followed by non-emergency transportation of less than a mile would be approximately $1300 US. The costs would rise if the treatment involved any of the following: more serious procedures such as defibrillation, paramedics, who are more skilled, further distance and emergency transport after initial treatment. Would your insurance pay for this medical misadventure? Maybe. It depends on definitions of ‘emergency,’ as well as diagnoses and deductibles and whose definition prevails. Claims that do not fit the standard parameters of an insurance policy may be routinely denied. The moral of this story? Preserve your national health service.

Now I turn from medical misadventures to grounded theory adventures. Why use grounded theory? In which ways does this method have power and potential? To enable us to consider these questions, we need to start with a definition of grounded theory. What is it? Grounded theory is a systematic method of analysing and collecting data to develop middle-range theories. This method begins but does not end with inductive inquiry. It is a comparative, iterative, and interactive method. The emphasis in grounded theory is on analysis of data; however, early data analysis informs data collection. Most grounded theorists follow an iterative approach, many make comparisons, few construct theory. But the potential is there.

I aim to offer a short introduction to grounded theory to clarify questions about the method that you may have. Much more detailed presentation of flexible grounded theory strategies can be found in my 2006 book, Constructing Grounded Theory, its forthcoming revision, and Juliet Corbin’s 2008 revision of Basics of Qualitative Research. Rather than only talking about the power and potential of grounded theory, I also want to show you a bit of grounded theory guidelines and suggest where they can lead you. Along the way, I will point out similarities and differences between major proponents of grounded theory.

Grounded theory is a method for studying processes; it is also a method in process (Charmaz, 2009). This method can be adopted by researchers who hold different theoretical perspectives, focus on various levels of analysis, pursue varied objectives, and address
diverse areas—including social justice research, policy analyses, organisational studies, societal issues—and social psychology. Critics of the method sometimes conflate how leading proponents have used the method with the method itself. Major grounded theory strategies that I will discuss here include coding, memo-writing, and theoretical sampling, the most misunderstood strategy. Theoretical sampling means sampling for development of a theoretical category, not sampling for population representation.

In my view, scrutiny of grounded theory and qualitative inquiry reveals reciprocal influences over the past 45 years. Grounded theory has had profound influence on the development of qualitative methods. Qualitative researchers who subscribe to other forms of analysis often use coding and memo-writing strategies. Qualitative inquiry has had profound influence on several contemporary renderings of grounded theory (see for example, Birks and Mills, 2010; Bryant & Charmaz 2007; Charmaz, 2000, 2006, 2011; Corbin and Strauss, 2008; Clarke 2005; 2007; 2012). Reflexivity and representation of research participants, for example, have influenced most second generation grounded theorists. Barney Glaser (1998, 2005, 2009), in contrast, differentiates his version of grounded theory from qualitative inquiry and rejects common practices within it, such as beginning research with a literature review, making accuracy a central concern, transcribing interviews, and sample size. Glaser and his followers do not explicitly attend to epistemological questions about data collection and quality, research relationships, and researchers’ roles and standpoints, as Corbin and Strauss (2008) and my constructivist version do.

How has grounded theory influenced qualitative inquiry? It served to legitimize inductive qualitative inquiry at a time that it was losing ground in the United States. Quantitative researchers saw qualitative research as idiosyncratic, impressionistic, unsystematic, biased, and impossible to replicate. Over the decades, some cynics claimed conducting grounded theory to legitimate their studies while many researchers believed that they used grounded theory but did not. Rosaline Barbour (2003), Antony Bryant (2003), Ian Dey (1998), Derek Layder (1998) and numerous others, including myself, have taken issue with Glaser’s (1978, 1998, 2001; Glaser and Strauss, 1967) insistence on delaying the literature review to avoid preconceiving data analysis.

Many, if not most, qualitative researchers have adopted some grounded theory strategies. These qualitative researchers engage in simultaneous data collection and analysis, coding, and memo-writing but use the strategies in a more general way than grounded theorists do. As a result, their work does not realize the power of grounded theory. Must a researcher use all the strategies of grounded theory? Jane Hood (2007) contends that researchers must engage in theoretical sampling to claim using grounded theory. Do most researchers engage in theoretical sampling? No. Grounded theorists’ claims to constructing theory might be a little over-stated. Nonetheless, using grounded theory strategies fosters giving your work an analytic edge. What constitutes theory has neither been agreed upon nor codified. I say use the strategies that work for you and your study but be aware of what you do and what you claim.

I view grounded theory as a general method but one that has been generalised—and diluted (Charmaz 2009). Many qualitative researchers have adopted coding and memo-writing strategies as an integral part of analysing their data but how they code data and write memos differs from grounded theorists.

Grounded theory has certain distinctive features that distinguish it from other forms of qualitative analysis (see Wertz et al. 2011). What are the distinctive features of grounded theory? This method:

- Provides explicit tools for studying processes
• Promotes an openness to all possible theoretical understandings
• Fosters developing tentative interpretations about the data through coding and categorising
• Builds systematic checks and refinements of the researcher’s major theoretical categories.

Grounded theory is primarily a method of analysis. Grounded theory guidelines call for using each phase of inquiry to raise the analytic level of the work. Developing theoretical categories is a central part of the analytic process. We grounded theorists fill out, check, and presumably saturate the properties (i.e. characteristics) of our theoretical categories with data. In addition, we look for variation in these categories and relationships between them.

Most qualitative studies address “what” and “how” questions. Researchers identify their topic or theme and then show how participants view, act, and feel about it. Jaber Gubrium and James Holstein (1997, 2002) describe how we address what and how questions. They, like Jack Katz (2002) and Snow, Morrill, and Anderson (2002) express concern about the descriptive nature of much qualitative research. Gubrium and Holstein (1997) propose that naturalistic qualitative researchers could address “why” questions “by considering the contingent relations between the whats and hows of social life” (p. 200). I propose that grounded theory gives you tools to answer “why” questions from an interpretive stance. By interrogating our data - and emerging ideas - with analytic questions throughout the research, we can raise the level of conceptualisation of these data and increase the theoretical reach of our analyses.

Getting to Why Questions with Grounded Theory

What are the main analytic strategies of grounded theory? These consist of coding data from the start of data collection, using comparative methods, writing memos, and conducting theoretical sampling to fill out your emergent theoretical categories and make them robust. Grounded theory involves using comparative methods at all levels of analysis. Thus, grounded theorists compare data with data, data with codes, codes with codes, codes with categories, and their finished analyses with relevant theoretical and research literatures. The last form of comparison has been scant among grounded theorists, as Rosaline Barbour (2003) has noted.

By analysing both your data and your emerging ideas about them throughout inquiry, you integrate and streamline data collection and analysis. Through studying your emerging analysis, you focus data collection on analytic questions. Gathering focused data helps you to test and sharpen your ideas. Grounded theory strategies enable researchers to control and to expedite the research process.

So how do grounded theory strategies work in practice? As I answer this question, I aim to show not only how you can control and expedite your research but moreover, the power and potential of the method.

Starting with Coding

Like the overall method, grounded theory coding is inductive, comparative, interactive, and iterative - and later - deductive. Do we begin coding as a tabula rasa, encased in theoretical innocence and substantive ignorance? Not a chance. Karen Henwood and Nick Pidgeon’s (2003) stance of theoretical agnosticism makes more sense. They argue that grounded theorists should subject prior theories to rigorous critical analysis rather than ignoring or denying them. I have long advocated acknowledging and grappling with our starting points and standpoints and the shifting positions we make and take as our studies proceed (see, for example, Charmaz 2000, 2006, 2009). I also advocate beginning coding with general
sensitizing concepts (Blumer 1969; van den Hoonard 1997). As a social psychologist, I think about self, identity, and interaction. As a methodologist who takes grounded theory into social justice research (Charmaz, 2005, 2011), I am attuned to concepts such as power, privilege, equity, and oppression. In any case, if the sensitising concepts don’t fit, don’t use them.

Two aspects of grounded theory coding distinguish it from other forms of qualitative research: First, grounded theory coding involves a close coding of statements, actions, events, and documents. This coding does more than sift, sort, and summarise data. It breaks the data up into their components or properties and defines the actions that shape or support these data. We code for processes, actions, and meanings. Most qualitative researchers, and some grounded theorists, code for topics and themes. Coding for actions and processes helps researchers to define connections between data.

Second, grounded theory coding invokes analytic questions from the start. These questions include:

- “What is this data a study of?” (Glaser, 1978, p. 57; Glaser and Strauss, 1967)
- What do the data suggest? Pronounce? Assume? (Charmaz, 2006, p. 47)
- From whose point of view? (Charmaz, 2006, p. 47)
- What theoretical category does this datum indicate? (Glaser, 1978)
- “When, how, and with what consequences” are participants acting? (Corbin & Strauss, 2008)

Such questions foster analysing the data rather than describing them. I advocate looking for research participants (and our own) tacit assumptions and explicating their implicit actions and meanings. This type of coding can help us crystallise significant points early in the research.

The unit of coding needs to fit the purpose of the study. Grounded theorists may code line-by-line, paragraph-by-paragraph, incident-by-incident, or story-by-story. I advocate line-by-line coding in the early stages of research as a heuristic device, particularly for interview data. Line-by-line coding means labelling each line of data. This type of coding helps us to see our data anew. Line-by-line coding means that researchers actively engage with data and begin to conceptualise them.

Codes rely on interaction between researchers and their data. Codes are not something to be discovered on your way to theory construction. Neither are they prescriptive formulae to be applied to your data as Corbin and Strauss (1990, 1998) imply and have spawned much criticism and debate (Atkinson, Coffey and Delamont, 2003; Glaser, 1992, Kelle, 2005; Melia 1996). Rather, codes consist of short labels that we construct as we interact with the data. Something kinesthetic occurs when we are coding; we are mentally and physically active in the process. I also advise researchers to code in gerunds, the noun forms of verbs, to the extent possible. Gerunds build action right into the codes. Hence, coding in gerunds allows us to see processes that otherwise might remain invisible.

Most qualitative researchers code for topics and themes. Grounded theorists code for actions and meanings and do so in gerunds, as much as possible. Of course you may have different actors portrayed in your codes even if you use interview data. Line by line coding probably works best with interview and narrative data. Using gerunds is difficult at first but you rapidly gain speed and confidence. And the process sparks your ideas. When you grapple with line by line coding, you may be amazed at how much more you see in your data than when you code for topics and themes. Observe the differences between coding the same data for topics and themes and coding with gerunds.
**Example - Coding for Topics and Themes**

<table>
<thead>
<tr>
<th>Examples of Codes</th>
<th>Narrative Data to be Coded</th>
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<tbody>
<tr>
<td>Friends’ support</td>
<td>P: They called the clinic to see if they could see me, if they would re-evaluate some of my meds and stuff, and they said, “Oh yeah.” When I got there they decided that they were going to put me in, put me away or whatever. And I ended up with a really bad doctor. Really bad. I even brought charges against him, but I lost.</td>
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<tr>
<td>Hospitalization</td>
<td></td>
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<tr>
<td>Conflict with doctor</td>
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<tr>
<td>Hospital transfer</td>
<td>P: They put me in this one place, then the next day they sent me over to West Valley [hospital 60 miles away], and they didn't have any female doctors there, they only had male, so you didn't have a choice, and you get one and that's who you get the whole time you're there. For some reason he just took a disliking, I guess, and I tried to tell him about some of the problems I had with my Lupus and stuff, and angered him. [He had ordered her to take off her dark glasses.] And I wore [dark] glasses all the time and I tried to tell him, you know, that if he would turn off the fluorescent lights, I would take off the glasses. And he felt I was just being stubborn. I gave him the name and number of my doctor that makes the glasses and he just ripped it up in front of me and threw it away.</td>
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<tr>
<td>Loss of choice of doctor</td>
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<tr>
<td>Conflict with doctor</td>
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<td>Physician control</td>
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**Example: Initial Grounded Theory Coding**

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<tr>
<th>Examples of Codes</th>
<th>Initial Narrative Data to be Coded</th>
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<tr>
<td>Receiving friends' help in seeking care</td>
<td>P: They [her friends] called the clinic to see if they could see me, if they would reevaluate some of my meds and stuff, and they said, &quot;Oh yeah.&quot; When I got there they decided that they were going to put me in, put me away or whatever. And I ended up with a really bad doctor. Really bad. I even brought charges against him, but I lost.</td>
</tr>
<tr>
<td>Requesting regimen re-evaluation</td>
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<tr>
<td>Gaining medical access</td>
<td>I: What did he do?</td>
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<tr>
<td>Being admitted to hospital</td>
<td></td>
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<tr>
<td>Getting a &quot;bad&quot; doctor</td>
<td>P: They put me in this one place, then the next day they sent me over to West Valley [hospital 60 miles away], and they didn't have any female doctors there, they only had male, so you didn't have a choice, and you get one and that's who you get the whole time you're there. For some reason he just took a disliking, I guess, and I tried to tell him about some of the problems I had with my Lupus and stuff, and angered him. [He had ordered her to take off her dark glasses.] And I wore [dark] glasses all the time [because of her photosensitivity] and I tried to tell him, you know, that if he would turn off the fluorescent lights, I would take off the glasses. And he felt I was just being stubborn. I gave him the name and number of my doctor that makes the glasses and he just ripped it up in front of me and threw it away.</td>
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<td>Taking action against MD</td>
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<td>Preferring a female MD</td>
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<td>Losing choice; dwindling control</td>
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<tr>
<td>Getting stuck with MD</td>
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<td>Accounting for MD's behaviour</td>
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<td>Trying to gain a voice - explaining symptoms</td>
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<td>Remaining unheard</td>
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<td>Asserting self</td>
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<td>Attempting to bargain</td>
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<tr>
<td>Being misjudged</td>
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<tr>
<td>Countering the judgment</td>
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<td>Offering evidence, being discounted</td>
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Ethnographic observations may be more amenable to coding larger units such as descriptions of incidents and routine actions. The close coding that grounded theorists conduct keep them interacting with their data. These interactions become comparative because you compare data with data, data with codes, and then later, data and codes with your tentative categories.

The next coding example illustrates how the narrator quotes the other person, her surgeon, and recalls her experience of their interaction. I took both into account. To make multiple voices more visible and separate for analytic purposes, it might help to use separate colored fonts or colored highlighting to distinguish these codes and, perhaps also, each individual’s respective statements.
Example of Initial Grounded Theory Coding

<table>
<thead>
<tr>
<th>Examples of Codes</th>
<th>Excerpt from Initial Narrative Data from a Personal Account</th>
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<tbody>
<tr>
<td>Imparting bad news</td>
<td>Teresa quoting her surgeon: “Because of where this thing</td>
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<tr>
<td>Being forewarned</td>
<td>is and what we’re going to have to do, there’s a chance</td>
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<tr>
<td>Receiving the worst news;</td>
<td>you won’t be able to even speak the same way again. You</td>
</tr>
<tr>
<td>Receiving warning</td>
<td>may not be singing anymore after this.”</td>
</tr>
<tr>
<td>Being paralyzed, caught by unimaginable loss</td>
<td>Teresa: I froze. I couldn’t breathe, couldn’t move, couldn’t</td>
</tr>
<tr>
<td>Feeling wounded</td>
<td>even blink. I felt like I had just been shot. My gut had</td>
</tr>
<tr>
<td>Reeling in shock and sorrow</td>
<td>locked up like I’d been punched in it. My mouth went dry</td>
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<tr>
<td>Responding to shock</td>
<td>and my fingers, which had been fumbling with a pen, were</td>
</tr>
<tr>
<td>Offering reassurance</td>
<td>suddenly cold and numb. Apparently picking up on my</td>
</tr>
<tr>
<td>Establishing the priority</td>
<td>shock, the surgeon smiled a little. “We’re going to save</td>
</tr>
<tr>
<td>Giving and receiving promises</td>
<td>your life, though. That’s what counts. And you know what?</td>
</tr>
<tr>
<td>Attempting to add reassurance</td>
<td>The other surgeon working with me is a voice guy. We’re</td>
</tr>
<tr>
<td></td>
<td>going to do everything we can not to be too intrusive.”</td>
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</table>

Data for these codes comes from an autobiographical account by a young voice student, “Teresa”, who retells learning that she might lose her voice during throat surgery for life-threatening cancer. Note that the codes stick pretty closely to the data although I move between Teresa and her recounting of what the surgeon said. The actions I recorded as codes reflect my interpretations. Ultimately, what you code reflects your interpretation and derives from the interaction that you have with the data. The codes result from what strikes you as happening in the data. In this case, I looked at what had happened from the research participant’s perspective. I could have given more emphasis to her embodied response. Does this make my coding wrong? No, coding is partial and you can always go back and re-code the same material. Similarly, grounded theory guidelines lead you to check to see if your codes hold up empirically. A code that you treat as a tentative category must account for other data as well. You test the robustness of this category with other data. Such checks are an integral part of grounded theory, logic and practice. Barney Glaser advises whenever you have an idea to write it down. I advise the same logic with coding because you may tap something fundamental, but implicit.

How long do you conduct line-by-line coding? The short answer is that you only conduct line by line coding until you have codes that you want to explore. Then you take these codes and see how they account for further data. You also shape the questions you ask in interviews, of documents, or through observations to focus on learning more about these codes. In this way, grounded theory, expedites your work. Rubin and Rubin (2011) give researchers poor advice when they claim that grounded theory is too much work. Rather, doing the close work early makes further research move quickly.

The power of grounded theory begins with coding. The combination of asking analytic questions, coding in gerunds to the extent that you can, and comparing data and codes lifts the analytic level of your emerging interpretations of the data. What do you do if your codes
are mundane? Study the codes and ask: What analytic story do these codes tell? To which theoretical issues and debates do these codes speak? Some grounded theorists categorise their initial codes into a theme at this point; others categorise their initial codes as a larger process. I recommend first seeing where your initial codes take you because they may spark new ideas and you may make connections that had been implicit or invisible.

*In short, grounded theory strategies foster analytic momentum.*

**Moving to memo-writing**

Memo-writing is the intermediate step between coding and writing the first draft of your manuscript. When using grounded theory, we begin memo writing from the very start of our research. Memo-writing speeds analytic momentum. It gives you a handle on your material and a place to consider, question, and clarify what you see as happening in your data. Memo-writing is a form of interacting with your data and nascent analysis.

Memo-writing prompts you to study your data and codes in new ways. The code itself gives you a specific title for the memo. Grounded theorists define a code according to its empirical properties. Hence, you not only move into analysis but also may be taking the first step toward an original contribution. Your specification of properties may challenge taken for granted ideas in your field. Checking these properties through further data collection strengthens your emerging analysis.

Action codes provide the grist to write memos in which you identify and analyse processes. Then comparing data with codes and codes with codes in your memos you begin to specify the conditions under which the process arises, persists, or changes. All kinds of questions can occur to you while memo-writing. Who’s involved? How? When? What do they do? What are consequences of their actions?

Asking analytic questions in memos enables us to move swiftly from description to conceptualizing data. Memos also expedite your work because you can sort them into sections of articles and chapters. By bringing data into your narrative from the start, you provide ready evidence without having to search for it. Memos are places to evaluate which codes to raise to tentative categories. I often raise initial codes to categories although occasionally I need to do a more intensive comparative analysis to arrive at a telling code.
Example of an Excerpt from an Early Memo: Loss of Voice as Defining Loss of Self

In this memo, I examined the effects of Teresa’s loss of voice and began to tie it to suffering and loss of self. I note her shock and sorrow and view the moment as defining. The analysis of time lurks in the background. I catch the immediacy of receiving unexpected bad news and the intensity of the moment. Her instantaneous awareness of the surgeon’s ominous pronouncement struck me. I compared Teresa’s immediate awareness of potential loss with other people who had had actual loss but learned long afterwards of its life-threatening nature. For example, one middle-aged woman was the youngest patient in her cardiac rehabilitation programme. She described herself as “bopping along” in the programme without taking either exercise or other programme goals seriously. She saw everyone else as old and sick and therefore different from herself. The other patients had had one or more heart attacks but she only had angina. This woman’s view that her condition was minor lasted until a nurse told her that staff counted angina as a heart attack. Here the moment of realisation of the gravity of one’s diagnosis comes after receiving it. Such comparisons elicited some intriguing ideas about time and agency. How does being unaware of the meaning of a diagnosis affect what people do and when they do it? What actions do they take and do not take? How does the amount and quality of experienced time affect choices, shape relationships, and influence possibilities, including prognoses? In the case of this woman, her medical practitioners viewed her as resisting medical guidelines. The comparisons we make and the questions we ask of them take us from how and what questions to why questions.

Using Theoretical Sampling to Ask and Answer Why Questions

Theoretical sampling is one of the most advantageous and least used grounded theory strategies. When you conduct theoretical sampling, you gather data to develop and refine your tentative theoretical categories. That means you need to have at least one category. Part of the confusion about theoretical sampling concerns the term, “sampling”. Many researchers view this term from the perspective of traditional research design of identifying
populations to sample. In contrast, theoretical sampling is predicated on your fresh analytic categories and thus occurs later. Identifying initial research participants, documents, or field sites to study is not theoretical sampling. Gathering data to fill out the properties of a tentative category is theoretical sampling. You keep gathering data until no new properties of your categories emerge (Thornberg & Charmaz, 2011). This strategy means that you saturate the properties of your category, not the data. Qualitative researchers often report that they stop data collection when the stories in the data became repetitive. If they were not working on developing categories as they proceeded with data collection, it's likely that they ask the same kinds of data collection questions. Subsequently, the data does indeed become repetitive.

Theoretical sampling encourages you to ask increasingly focused questions and seek answers as you progress through inquiry. It builds systematic checks into your analysis. You put your ideas to empirical test. In grounded theory, saturation means theoretical saturation, despite suspect claims to achieving saturation. No new properties of your theoretical categories have emerged. You have gathered compelling and robust data to support your theoretical categories. Therefore, your work gains substance and moves beyond interesting conjectures.

These dimensions of theoretical sampling distinguish grounded theory from other types of qualitative inquiry. Theoretical sampling involves both inductive and deductive reasoning, and some grounded theorists develop specific hypotheses to test. In a word, theoretical sampling is abductive. C. S. Peirce’s (1935-1958) original conception of abductive inference rested on considering all plausible theoretical explanations for a scientist’s surprising finding while conducting inductive research (see also, Rosenthal, 1994; Strübing, 2007). Hence researchers form hypotheses for each possible explanation, and test these hypotheses empirically by examining data to arrive at the most plausible explanation. The abductive logic of theoretical sampling not only strengthens your categories but affords them more theoretical reach.

Grounded theorists’ categories and concepts can travel. I developed a category, “Situating the self in time” in my earlier study of chronic illness (Charmaz, 1991). It rested on the notion of people seeing themselves in different time frames of the past, present, and future. Jennifer Lois (2010) was puzzled by the degree of time sacrifice that some home schooling mothers made for their children. Why did these mothers give all of their time to their children? She decided to pursue their time sacrifice. But how could she account for it? Lois considered various explanations and then turned to Michael Flaherty's (2000) work on the subjective experience of time and my work on time frames and self. She went back to the data with new, focused questions that explored her code, “time sacrifice”. Subsequently, she created new codes and continued to interview. Next she developed and checked new categories. Lois's efforts resulted in an innovative theoretical analysis and an award-winning article. She argues that home schooling mothers engage in temporal emotion-work based on savouring the present, and sequencing their lives. Yet she takes the theoretical significance of her analysis further. Lois proposes:

That there may be a subclass of emotions, which I call temporal emotions that can only be felt by crossing timeframes... Nostalgia, regret, disillusionment, ambition, hope, optimism, and dread... cannot be felt without bridging the present to either the past or the future... As such, it is possible that the ways we use temporal emotions have a particularly important effect on constructing a continuous self over time. (2010, p. 441)
Lois’s argument meets Rosaline Barbour’s (2008) criticism that grounded theorists often fail to show the larger import of their work. Nonetheless, Barbour might see Lois’s analysis as containing the echoes of disciplinary concepts.

One grounded theory study demonstrates precisely the kind of theoretical reach and challenges to current theoretical ideas that Barbour advocates. Susan Leigh Star (1989) book, *Regions of the Mind: Brain Research and the Quest for Scientific Certainty*, depicts how late nineteenth and early twentieth century neurologists called localisationists institutionalised their contested theory that brain functions depended on specific regions of the brain. She writes, “when I was feeling overwhelmed with the complexity and interdependence of all the issues, Strauss asked me: what would it have taken to overthrow the theory?” (p. 196).

By addressing what and how questions Star subsequently could move to why questions. She delineated what overtaking the localisationist’s theory would have demanded and discovered why it did not occur. Her categories depicted localisationists’ actions. Their actions included: borrowing evidence from other fields, evaluating operational procedures rather than actual technical failures, substituting ideal clinical pictures for anomalous findings, generalizing from case results, and reducing epistemological questions to debates about technique (Star, pp. 87-93). In short, localisationists swayed interpretation of data, ignored anomalies, controlled the debate, invoked deceptive organisational tactics, and manipulated what stood as credibility (pp. 134-152). Star’s analysis brought her to forming a new explanation for change and stability in scientific theorizing. In this sense, Star’s analysis presages Gubrium and Holstein (1997)’s advice to look for the contingent relationships between the what’s and how’s of social life.

Star does not end with her telling analysis of the take-over by localisation theory. Instead she invoked the particular case of localisation theory to account for why scientific theories do or do not change. She opposes Thomas S. Kuhn’s (1970) explanation of scientific theoretical revolutions. He argues that at certain critical points, scientists have amassed numerous anomalous findings that they cannot ignore and their current theory cannot explain. Thus, these anomalous findings force a paradigm change that overthrow the reigning scientific theory. In contrast, Star shows that routine actions in the everyday work of scientists lead to which theories gain currency. She writes: “practical negotiations with and about anomalous events are constitutive of science at every level of organisation” (p. 64). For Star, the complex multiple dimensions of doing scientific work are “interactive and developmental” (p. 196) and thus result in the construction of scientific theorising.

**CONCLUSION**

Before ending, I want to mention three directions grounded theory is taking. First, grounded theory is becoming much more international and multi-disciplinary in all of its variants. Second, the grounded theory turn toward social justice research brings the method into social policy areas. Third, mixed methods researchers often look to grounded theory as a useful qualitative method for their studies. In the past, social justice research in the US largely relied on quantitative research. Now, more studies in both critical and conventional inquiry use combinations of qualitative and quantitative approaches. But in any case mixed methods studies are fraught with knotty problems (Barbour, 1998). Thomas Christ (2009) points out that transformative research to reduce oppression does not readily fit traditional quantitative research designs. Jennie Popay et al. (2003) observe that mixed methods can generate different and conflicting data. And I have argued that “Mixed methods may divide, collide, or cohere” (Charmaz, 2012, p. 127).
Last, the benefits grounded theory offers qualitative researchers in medical sociology derive from its strategies. Grounded theory offers explicit analytic guidelines, ways of seeing data, control over the research process, and the promise of completed projects. This method can help you develop your power and potential as medical sociologists. And finally, my answer to why use grounded theory? It’s exciting!

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The potential theory comes from mathematical physics, in particular, from electro-static and gravitational problems and nds their applications in the probability theory, scattering theory, biological systems and many other branches of science. During the last century the classical potential theory and the non-linear potential theory has occupied an important place in mathematics. We present the original gravitational and electrostatic problems that lead to the notion of capacity and harmonic functions. We give the short survey of potential theory and present some modern elds of its application The potential for both theory and action to result from this critical grounded theory methodology, which promotes greater participation and equity of power for positive change, is the transformational in transformational grounded theory. Keywords: transformational grounded theory; participatory action research; decolonizing methodologies; cross-cultural; critical methods; theory development.