

---

## *Naturalistic inquiry and the saturation concept: a research note*

*Qualitative Research*  
Copyright © 2008  
SAGE Publications  
(Los Angeles,  
London, New Delhi  
and Singapore)  
vol. 8(1) 137–152

GLENN A. BOWEN  
Western Carolina University, USA

**ABSTRACT** *Saturation* is mentioned in many qualitative research reports without any explanation of what it means and how it occurred. Recognizing the saturation point presents a challenge to qualitative researchers, especially in the absence of explicit guidelines for determining data or theoretical saturation. This research note examines the saturation concept in naturalistic inquiry and the challenges it presents. In particular, it summarizes the saturation process in a grounded theory study of community-based antipoverty projects. The main argument advanced in this research note is that claims of saturation should be supported by an explanation of how saturation was achieved and substantiated by clear evidence of its occurrence.

**KEYWORDS:** *coding, constant comparative method, grounded theory, naturalistic inquiry, saturation, trustworthiness*

### *Introduction*

The concept of *saturation* is often mentioned in qualitative research reports and journal articles. It is mentioned and left at that. In many cases, researchers who claim that saturation occurred do not explain what it means in the context of their studies. Sometimes the concept is described vaguely or the explanation is relegated to the footnotes of reports or articles.

Noting that saturation is rarely evident in research reports, Caelli et al. (2003: 13) argue that 'evidence of saturation must be given in the presentation of the data and discussed via the forms in which it was recognized during the analysis'. Indeed, researchers should make explicit the steps they take to ensure data or theoretical saturation. They should provide clear descriptions of the saturation process in their research reports.

Therein lies a challenge for researchers, especially novices, who are faced with a paucity of methodological prescriptions and few, if any, definitive rules

for determining saturation. To be sure, explicit guidelines for determining saturation are almost nonexistent in the literature on qualitative methodologies. Whether such guidelines are really necessary remains open to debate.

The purpose of this article is to help qualitative researchers – novices and experienced researchers alike – both understand the saturation concept and manage the saturation process. First, I discuss naturalistic inquiry and particularly the grounded theory methodology in which the saturation concept is rooted. Next, I define *saturation* and explain its relevance to theory generation. Then I demonstrate how saturation is 'operationalized' through the process of constant comparison. Finally, I comment on the challenges inherent in achieving saturation and recommend ways to make the process rigorous and transparent.

### *Naturalistic inquiry*

Lincoln and Guba (1985) proposed naturalistic inquiry as an alternative to traditional positivistic inquiry. Naturalistic inquiry is characterized by research in natural settings (rather than in laboratories), qualitative methods, purposive sampling, inductive analysis,<sup>1</sup> a grounded theory approach, a case study reporting mode, the tentative application of findings, and special criteria of trustworthiness (Lincoln and Guba, 1985). In line with this research ontology, the investigator studies real-world situations as they unfold naturally instead of manipulating research outcomes a priori. Further, the researcher recognizes the existence of multiple constructed realities.

Naturalistic inquiry requires robust data collection techniques and the documentation of research procedures. Details of the methodology, and particularly the data analysis procedures, should be included in the research report.

#### GROUNDING THEORY

Since the 'discovery' or the first systematic formulation of grounded theory by sociologists Barney Glaser and Anselm Strauss in the 1960s (see Glaser and Strauss, 1965, 1967), this methodology has been discussed extensively in the literature (see, for example, Chenitz, 1986; Corbin and Strauss, 1990; Glaser, 1978; Strauss and Corbin, 1994, 1998). A special approach to naturalistic inquiry, grounded theory is 'a general methodology for developing theory that is grounded in data systematically gathered and analyzed. Theory evolves during actual research, and it does this through continuous interplay between analysis and data collection' (Strauss and Corbin, 1994: 273). The objective of the methodology is to construct a theory that reflects an understanding of phenomena. Strauss and Corbin (1990) claim that grounded theory research can provide a better understanding of a phenomenon about which little is known, and, similarly, Stern (1995) asserts that the methodology is appropriate for investigations of an uncharted area or to gain a fresh perspective on a familiar situation.

For the purposes of my research, I blended what appeared to be conflicting guidelines and procedures delineated by Glaser (1978, 2002) and Strauss (see Strauss and Corbin, 1994, 1998). I accepted that a grounded theory connects various perspectives with patterns and processes of action and interaction that, in turn, are linked to specific conditions and consequences (Strauss and Corbin, 1994). At the same time, I saw no need to take issue with Glaser's (1978) assertion that the theory occurs around a basic social process that has durability, stability over time, workability, and the property of stages. The authors seem to agree that the grounded theory approach should include the constant comparative method, linked with theoretical sampling and special coding procedures (see Glaser and Strauss, 1967). As discussed below, the constant comparative method and related procedures are bound up with the process of saturation.

#### CONSTANT COMPARATIVE METHOD

Constant comparison is a central feature of grounded theory procedures (Glaser and Strauss, 1967; Strauss and Corbin, 1994); and theoretical saturation, which is a defining characteristic of grounded theory, relies on the process of constant comparison. The constant comparative method consists of four stages: (1) comparing incidents applicable to each theme that emerges from the data; (2) integrating themes and their properties; (3) delimiting the theory; and (4) writing the theory (Glaser and Strauss, 1967). Sampling, data collection, and analysis proceed concurrently.

Data analysis involves systematic coding procedures; newly gathered data are continually compared with previously collected data and their coding. According to one authority on the subject (Charmaz, 2003), it is coding that starts the chain of theory development. Previously coded text is checked to see whether newly created codes are relevant for developing and refining theoretical categories or central concepts. Such concepts, as Glaser (2002: para. 12) explains, 'come from the tedium of the constant comparative method linked with sensitive theoretical sampling and are constantly fitted to the data'. The emergent categories form patterns and interrelations, which ultimately form the core category of the emerging theory (Glaser and Strauss, 1967).

The process also includes a constant search for negative cases or falsifying evidence that would refute the emerging theory (Glaser and Strauss, 1967). In this regard, the constant comparative method serves to test concepts and themes with a view to producing a theory grounded in the data.

#### *Saturation*

*Data saturation* or *theoretical saturation* is integral to naturalistic inquiry (Glaser and Strauss, 1967; Strauss and Corbin, 1998). However, the saturation concept remains nebulous and the process lacks systematization.

Data saturation entails bringing new participants continually into the study until the data set is complete, as indicated by data replication or redundancy. In other words, saturation is reached when the researcher gathers data to the point of diminishing returns, when nothing new is being added. Charmaz (2003) explains that saturation calls for fitting new data into categories already devised. For their part, Morse et al. (2002: 12) point to the purpose of data saturation: 'Saturating data ensures replication in categories; replication verifies, and ensures comprehension and completeness.'

Theoretical saturation, in effect, is the point at which no new insights are obtained, no new themes are identified, and no issues arise regarding a category of data (Strauss and Corbin, 1990). At this milestone, the data categories are well established and validated. Glaser and Strauss (1967: 65) explain in their seminal work, *The Discovery of Grounded Theory*, that 'when one category is saturated, nothing remains but to go on to new groups for data on other categories, and attempt to saturate these categories also'. It stands to reason that, as Morse (1995) points out, saturation of all categories signifies the point at which to end the research. While noting that there are no definitive rules for determining saturation, Hyde (2003: 48) emphasizes, however, that 'it needs to be derived from a coherent and rigorous process of data condensation and interpretation that accounts for all possible explanations [of the phenomenon]'

There is, of course, nothing sacrosanct about the principles and criteria for saturation advanced by authors such as Glaser and Strauss, Strauss and Corbin, and Morse et al. Nevertheless, the perspectives on saturation presented by these authors converge to provide some direction for 'operationalizing' the concept, especially for inexperienced qualitative researchers.

#### THEORETICAL SAMPLING

Theoretical saturation is a consequence of theoretical sampling – that is, 'sampling on the basis of concepts that have proven theoretical relevance to the evolving theory' (Strauss and Corbin, 1990: 176). This also means sampling to the point of redundancy (Lincoln and Guba, 1985; Strauss and Corbin, 1994). In this sampling strategy, the researcher does not seek 'generalizability' or 'representativeness' and therefore focuses less on sample *size* and more on sampling *adequacy*. Sample size is important only as it relates to judging the extent to which issues of saturation have been carefully considered. During the coding process, the size of the sample may be increased in order to collect additional data until there is redundancy of information. However, increasing the sample size is not always necessary.

An 'appropriate' sample is composed of participants who best represent or have knowledge of the research topic. Scenes, events, and documents may also be sampled with a view to refining ideas, identifying conceptual boundaries, and pinpointing the fit and relevance of categories (Charmaz, 2003). The objective is to ensure 'efficient and effective saturation of categories, with optimal quality data and minimum dross' (Morse et al., 2002: 12).

The data or data categories should be saturated; the researcher should not 'saturate' the study participants. As Morse and colleagues (2002: 16) point out:

Returning to interview key participants for a second or third time is oriented toward eliciting data to expand the depth or address gaps in the emerging analysis while interviewing additional participants is for the purpose of increasing the scope, adequacy and appropriateness of the data.

Both purposes need to be served. Depth as well as breadth of information will indicate sampling adequacy and make each theoretical category complete. However, it is not necessary to interview the same participants repeatedly if there are other sources of data. Sampling adequacy, then, is evidenced by saturation and replication, meaning that 'sufficient data to account for all aspects of the phenomenon have been obtained' (Morse et al., 2002: 12). For example, in her study of multicultural organization development in nonprofit human service agencies, researcher Cheryl Hyde (2003: 48) used a 'theme saturation' approach and clarifies: 'Theme saturation means that no new data are added because that category has been adequately explained.' Hyde reports that coding and analysis ended when theme saturation occurred.

#### FORMAL THEORY

A thorough review of the literature has shed no light on the role of formal theory in the saturation process. Formal theory is developed for a formal, or conceptual, area of inquiry (Glaser and Strauss, 1967). Given the objective of generating a theory based on the thematic analysis of data, it seems that the use of formal theory to achieve saturation is forbidden.<sup>2</sup> What is apparently preferred is the use of 'sensitizing concepts' (Blaikie, 2000: 26; Charmaz, 2003: 259). As Blaikie (2000) argues, research that is concerned with theory generation may require sensitizing concepts, which serve as a point of reference and a guide for theory development.

#### *Stakeholder collaboration theory*

A substantive theory of stakeholder collaboration emerged from my exploratory study of antipoverty projects in Jamaica (Bowen, 2003, 2005). The antipoverty projects were supported by social funds – special grants provided by the national government<sup>3</sup> to nongovernmental and community-based organizations, which served as local project sponsors. Projects under Jamaica's social fund program, sponsored by the World Bank, were designed to improve social and economic infrastructure, social services, and the organizational capacity of community-based groups. Predetermined criteria for approving the allocation of funds included community participation in all phases of the project, from conceptualization and evaluation, and a 5 percent (minimum) contribution from the local sponsor.

Before I embarked on the field work, I drew upon sensitizing concepts to create a conceptual framework. An extensive review of the literature on my research topic yielded three sensitizing concepts – *citizen participation*, *social capital*, and *empowerment*. The conceptual framework interlinked the three concepts and served as an impetus for theory formulation. However, once data collection and analysis (simultaneous processes) began, I took particular care to let new concepts surface from the data and to avoid imposing extant concepts that reflected my own epistemological predilections. The result was a new theory grounded firmly in the data.

I used in-depth interviews, non-participant observation, and document reviews to collect data. Qualitative research such as this, which stressed in-depth investigation in a small number of communities, typically uses purposive sampling, as opposed to random sampling. Because the emphasis was on quality rather than quantity, the objective was not to maximize numbers but rather to become ‘saturated’ with information on the topic (Padgett, 1998: 52). By means of purposive sampling, then, I selected ‘*information-rich cases for study in depth*’, as recommended by Patton (1990: 169, emphasis in original). Thus, eight funded projects were included in the study. Each project had a different focus: dispute resolution, family life training, parenting support, road repair, food processing, school expansion, nongovernmental organization support, and building construction.<sup>4</sup>

The initial sample of 26 respondents (interviewees) eventually grew to 34 as a result of the constant comparative method. In addition, 10 key informants (knowledgeable insiders from the community and from relevant external organizations) provided supplementary data. I used an interview guide (protocol) for semi-structured interviews, conducted individually and privately with project organizers and community organization leaders at project sites. Non-participant observation of community conditions and products, as well as reviews of project documents, also produced data for analysis. Approximately 40 documents, including 26 newspaper articles and several government publications, were reviewed, placed in context, and coded for analysis.

The research revealed that the approach to poverty reduction<sup>5</sup> in social fund-supported communities is a process of development-focused collaboration among various stakeholders (Bowen, 2003, 2005). The process encompasses four stages: (1) Identifying problems and priorities; (2) Motivating and mobilizing; (3) Working together; and (4) Creating an enabling environment. Each of these stages was a thematic category derived from specific codes, as listed in Figure 1.

The first stage reflects community conditions, prompting strategies at the second stage of the collaboration process. The third stage consists of forms of interactions, and the fourth comprises elements that mirror consequences of social fund projects in beneficiary communities. The conditions, strategies, interactions, and consequences were contextualized within the respondents’ world and offered answers to socially purposeful questions of what was happening in local communities and why.

<b>Conditions</b>	<p>Theme: Identifying problems and priorities</p> <ul style="list-style-type: none"> <li>• Code 1: Voicing common concerns</li> <li>• Code 2: Understanding the system</li> <li>• Code 3: Settling on a project</li> </ul>
<b>Strategies</b>	<p>Theme: Motivating and mobilizing</p> <ul style="list-style-type: none"> <li>• Code 1: Focusing on the common good</li> <li>• Code 2: Emphasizing collective responsibility</li> <li>• Code 3: Seeking stakeholder support</li> </ul>
<b>Interactions</b>	<p>Theme: Working together</p> <ul style="list-style-type: none"> <li>• Code 1: Matching resources to requirements</li> <li>• Code 2: Getting the job done</li> <li>• Code 3: Showing tangible results</li> </ul>
<b>Consequences</b>	<p>Theme: Creating an enabling environment</p> <ul style="list-style-type: none"> <li>• Code 1: Looking beyond the present</li> <li>• Code 2: Sustaining interest and support</li> <li>• Code 3: Maintaining pride and satisfaction</li> </ul>

FIGURE 1. *Themes and codes for stakeholder collaboration theory*

The underlying stakeholder involvement theory posits that collaboration increases the productivity of resources and creates the conditions for community-driven development. 'Community-driven development represents a people-centered approach to social change, whereby local actors take the lead in conceptualizing projects and programs that address social and economic needs' (Bowen, 2003: 76).

A detailed discussion of the theory itself is beyond the scope of this research note. The focus here is on the coding process and my attempts, as part of that process, to achieve theoretical saturation.

## *Coding*

In my grounded theory study, I used the constant comparative method for reviewing line, sentence, and paragraph segments of the transcribed interviews and field notes to decide which codes fit the concepts suggested by the data. I performed coding at three levels – open, axial, and selective (Strauss and Corbin, 1990). Open codes served to reduce the mass of largely textual data into manageable groupings. To open code the data, I initially used the six categories of items in the interview guide<sup>6</sup> as 'labels' for the interview transcripts and field observation notes. Key phrases that I had underlined in my field notes and later in the interview transcripts were included as open codes in the analysis.

Further open coding involved assigning more specific substantive labels, or preliminary concepts, as well as 'in vivo' codes (respondents' exact words,

TABLE 1. *Line-by-line coding of interview statement**Interview statement*

We the executive can do so much and no more. We always try to keep all the members actively involved in everything we do in the community. After all, this community belongs to all of us; and we cannot depend on the Government to do everything for us. We have to take some responsibility too.

*Line-by-line coding*

We the executive can do so much and no more.	Recognizing limitations
We always try to keep all the members actively involved in everything we do in the community.	Importance of community involvement
After all, this community belongs to all of us; and we cannot depend on the Government to do everything for us.	Accepting 'ownership' of community
We have to take some responsibility too.	Emphasizing people's responsibility

especially indigenous terms), to larger chunks of data. I used the ATLAS.ti qualitative data analysis software<sup>7</sup> to organize and manage the data. The process of assigning and revising codes generated 56 different codes, most of which were related to the funded projects and the local sponsors.

Line-by-line coding of data is illustrated in Table 1. The respondent whose statement is analyzed was a member of the executive committee of a community-based organization that sponsored one of the antipoverty projects. By coding her statement line by line, it became clear that the respondent was stressing that, besides the Government, the people needed to play a role in improving their community.

In a back-and-forth interplay with the data, I constantly checked and rechecked the elemental codes and concepts. The analysis was based on an inductive approach geared to identifying patterns and discovering theoretical properties in the data. I scrutinized and compared data with data and with codes in order to organize ideas and pinpoint concepts that seemed to cluster together. Codes were clustered into substantive categories, and these category codes were compared across interview transcripts, observational data, respondent feedback, and data from documents. I compared coded segments by asking, 'How is this text similar to, or different from, the preceding text?' and 'What kinds of ideas are mentioned in both interview statements and documents?' Hence, I identified similarities, differences, and general patterns. If new categories were suggested by the new data, then the previous transcripts of interviews, together with data from observations and documents, were reanalyzed to determine the presence of those categories. By doing so, I filled in underdeveloped categories and narrowed excess ones.

Axial codes captured the essence of the data in terms that are more abstract than open codes. Frequent and widespread use of key terms suggested their relevance as conceptual categories. As the analysis progressed, I moved



beyond the words in interview transcripts, key informant comments, and various documents – from a descriptive to an interpretive and explanatory mode.

The final level of coding was selective coding – ‘the process of selecting the central or core category, systematically relating it to other categories, validating those relationships, and filling in categories that need further refinement and development’ (Strauss and Corbin, 1990: 116). I created selective codes by connecting and consolidating axial codes and at the same time, abstracting from the evidence contained in the data. Then I analyzed the selective codes to identify themes that cut across the data and further distilled them to create a core category of emerging themes. It is important to note here that whereas codes are *applied* to the data, themes *emerge* from the data.

Taken together, the coded statement shown in Table 1 and similar statements from other respondents generated the ‘Emphasizing collective responsibility’ sub-theme. The ‘Motivating and mobilizing’ theme (see Figure 1) eventually emerged.

The iterative process of collecting, coding, and analyzing the triangulated data resulted in the four central themes and the substantive theory. An analytic (coding) diagram served as a loom for weaving a story line of the many patterns discovered in my analysis of interview transcripts, field notes, and documents. The diagram provided a visual representation of relationships among concepts and eventually became part of an audit trail – the procedures and the path followed as the research proceeded (Lincoln and Guba, 1985).

### *Evidence of saturation*

Through the coding process and constant comparison, I sought to identify categories within a set of data, find relationships within these categories, and identify core concepts that describe these relationships. As I constantly compared categories during the coding process, I recorded hunches, ideas, and related questions in memos. Memos helped me refine and keep track of ideas that developed when I compared incident to incident and concept to concept in the evolving theory. I sorted these memos at the second level of coding – axial coding – so that their theoretical relationships would be identified and core categories would begin to take shape. I then rewrote the memos in an expanded, more analytical form. In the process of expanding and refining the memos, I discovered gaps and new relationships. I filled the gaps by either going back to the first-level coded data or to the communities to gather additional data from interview respondents and key informants.

The categories were refined as areas of commonality and divergence were identified. I looked for true patterns in the data and understood that single, isolated incidents would not be relevant to the theory construction. As each theme emerged, it was clear that theoretical saturation was being achieved. When additional data and further analysis failed to uncover any new thematic idea in relation to the emerging theory, I stopped sampling and ended the

TABLE 2. *Saturating data for the 'Working together' theme (excerpts)*

---

*Working together (thematic category)*

---

*Matching resources to requirements (sub-theme)*

- Preliminary/open codes: money, materials, supplies, provisions, 'sweat equity', donations/contributions, resources
- Respondent comment: 'Our association tried to pool whatever resources we had available to us. ... we asked the business people to support us and we decided to put in as much work as necessary so we could have the project'

---

*Getting the job done (sub-theme)*

- Preliminary/open codes: tasks, labor/manpower, social fund guidelines, business support, project implementation
- Respondent comments: 'Different people had different jobs to do, whether paid or voluntary. The women would cook and fix the lunch while the men, mostly the men, would work on the road. Even some of the children got involved when they were not in school'/'We cooperated with one another'
- Data from newspaper: Local sponsor contributed J\$650,000 (US\$13,000) to the Windsor Girls Home project (*Source: The Gleaner*, 16 December 2000)

---

*Showing tangible results (sub-theme)*

- Preliminary/open codes: varied roles, outcomes, events/programs, physical evidence/products, real results
  - Key informant comments: It was important to the project organizers that the results of the expenditures be 'seen and appreciated by the public' and that the efforts of community participants 'be recognized and valued'/'The project has had a tremendous impact on the community. ... The infrastructure and surroundings were significantly improved – made more comfortable for living and conducive to learning'
  - Evidence of tangible results: three-mile resurfaced road, complete with drainage structures; new equipment at a food processing plant; modern sanitary conveniences at a school; new building to house young female wards of the state
  - Data from documents: Resolution of 70% of 88 cases taken to mediation in 2000–2 (*Sources: Disputes Resolution Foundation: Annual Report; Hanover Mediation Center records*)/'Using anecdotal evidence, we have seen where some students are seeking out the mediators and guidance counselors to help them solve conflicts rather than resorting to physical conflicts as the immediate answer' (*Source: Hanover Mediation Center files – excerpted from a high school guidance counselor's letter*)
-

coding process. Ultimately, the four themes (specified above and in Figure 1) encompassed all of the theory-laden data from the research.

An outline of the emergence of one of the twelve thematic categories is presented in Table 2. Because of space limitations, only a short outline is given here. The preliminary codes gave way to final codes and concepts, which produced themes and generated the theory. A sampling of respondent statements, document excerpts, and observational comments is included in the table.

'Working together' encompasses three forms of interactions: Matching resources to requirements, Getting the job done, and Showing tangible results. In addition to the evidence presented in the table, respondents commented specifically about 'working together':

Working together with people from different sectors of the society builds community relationship, cooperation, and unity.

People need to work together to make the community a better place. Working together, we can achieve our goals for the community in terms of the economic conditions and the social problems we face.

What is our main strength? We work together as one.

The saturation of this and other thematic categories required the addition of data to the categories to maximize the variety of data supportive of the category. Accordingly, I collected additional data as a means of dealing with coding conflicts and 'fleshing out' emerging themes. Let us look, for example, at the final theme, Creating an enabling environment. I identified the sensitizing concept of *empowerment* in the literature on development projects and social funds. The literature had made it clear that a common objective of poverty-focused development projects was to 'empower poor people so that they could better stand up for themselves in their relationships with the more powerful people in the community' (Bowen, 2003: 35). Further, a principal objective of Jamaica's Social Investment Fund was to 'assist in empowering communities by seeking to ensure greater levels of community involvement in development programs and community participation in decision making' (Bowen, 2003: 35). Two respondents did use the term *empowerment*, and so did a key informant. However, during the constant comparative process, I discovered that they were referring to what they had read in social fund documents rather than to reality as they had experienced it. In reality, the arrangements and processes in social fund-supported communities only vaguely resembled the picture of empowerment painted by the literature. Generally, the projects have been 'enabling' and not empowering (Bowen, 2003).

As I gathered more data and continued coding, I noted that, while respondents of those communities continued to highlight problems and challenges, their focus had shifted to what their community could be like if they had additional resources and if they were able to sustain the interest and support of community members and other stakeholders. They would continue to feel the pride and satisfaction that had resulted from their initial work.

Eventually, three codes – Looking beyond the present, Sustaining interest and support, and Maintaining pride and satisfaction – combined to produce the theme, Creating an enabling environment. As the diverse properties of the category became more integrated, the theme was delimited. I defined an enabling environment as ‘the aggregate of social circumstances or conditions in which local actors have the means, capacity, and opportunity to be agents of their community’s endogenous development’ (Bowen, 2003: 94). An enabling environment was a major consequence of the first three stages – that is, Identifying problems and priorities, Motivating and mobilizing, and Working together.

In my study, a data category was considered saturated if it was reflected in more than 70 percent of the interviews, confirmed by member checks (interviewee feedback on the analyzed data), resonated with key informants, and made sense given prior research. (I must caution against assuming that quantitative data, such as a percentage of interviews, are necessary for determining saturation. If quantitative data are considered, they should not be used in isolation of other indicators of saturation.) Supporting data from document reviews and observations were taken into account as well. When I started hearing the same comments from different participants in different places, exposing me to the same data repeatedly, I concentrated on refining thematic patterns in the data categories. Both the number of respondents and the number of times a thematic category was indicated were also considered in the analysis.

### *Trustworthiness*

While seeking data saturation and thematic exhaustion, I also paid attention to the trustworthiness requirement of qualitative research. Evidence of trustworthiness combined with evidence of saturation would signal to readers and evaluators of the research report that they could have confidence in the findings, and that the findings could be applied to new situations or experiences. Qualitative researchers who frame their studies in an interpretive paradigm focus on trustworthiness as opposed to the conventional, positivistic criteria of internal and external validity, reliability, and objectivity (Denzin and Lincoln, 1994; Lincoln and Guba, 1985).

I used both constructive (during the process) and evaluative (post hoc) procedures to ensure the trustworthiness of the research and provide quality assurance. Triangulation (using multiple methods and multiple sources of data), member checks, and negative case analysis established the credibility of the findings. Negative case analysis involved a reexamination of the analyzed data to determine whether any cases (i.e. themes) were contradicted by the evidence, or whether the characteristics or properties of the emergent themes were applicable to all social fund project cases in the study. When a research ‘auditor’ and I both determined that there was no negative case or disconfirming evidence, the analysis was considered complete and the boundaries of the phenomenon were set.

In addition, in my research report (Bowen, 2003), I have offered a 'thick description' (Geertz, 1973) of the phenomena investigated, indicating how and why events occurred in a particular context. Participants' attitudes and experiences are at the heart of thick descriptions. My objective was to present, with clarity and consistency, a rich portrait of people and their actions in the context of social fund projects in local communities of Jamaica. Furthermore, I have provided an audit trail (Lincoln and Guba, 1985; Padgett, 1998) from the data transcriptions to the emergent theory so that the findings would be seen as dependable and confirmable.

All phases of the study were subject to scrutiny and review by a four-member team of research advisors, who looked for omissions and inconsistencies and offered recommendations that have made the research robust. In the end, it was clear that if others were to inspect the evidence (field notes, interview transcripts, recordings, document reviews, etc.) independently, they would draw the same or similar conclusions that I did. Attention to both trustworthiness and saturation served to make the evidence clear and cogent.

## *Challenges*

There are inherent challenges in managing the saturation process in naturalistic inquiry, such as grounded theory research. Purposive samples need to be selected carefully, and multiple data-gathering methods should be employed. Naturalistic inquiry requires robust data collection and analytical techniques. In particular, grounded theory methodology calls for meeting the demands of constant comparison, so that the theory is truly emergent and not forced. Theories should not be forced or presented prematurely.

The grounded theory methodology is based on the notion that the researcher is well informed and ready to make decisions about individual pieces of data. In this regard, the researcher is expected to recognize the 'plausible relationships proposed among concepts and sets of concepts' (Strauss and Corbin, 1994: 278).

One is aware that, in addition to new researchers' inexperience, there are usually constraints of tight schedules and limited budgets for the research. Prolonged engagement in the field and with the data is not always feasible. Even in the face of such constraints, though, researchers should be prepared to immerse themselves fully in systematic data collection and analysis and to work toward theoretical saturation. Managing the saturation process can be rather tedious, as Glaser (2002) has observed. A large number of data transcripts require a great deal of time for coding and analysis. The analysis of complex transcripts is also time-consuming and demanding.

Yet, the process of achieving saturation and generating a theory should be rigorous, thorough, and transparent. Researchers should not gloss over this concept or ignore the process required. They should specify what they did and how they did it, including how they handled data condensation and interpretation.

It is vital that the theory be grounded systematically in the data. Naturalistic inquirers should aim for best-fit concepts and therefore should not expect a rapid emergence of concepts from the data they have gathered. Premature closure will not produce a durable, stable, or workable theory. The researcher's patience and ability to deal with fatigue can be instrumental in making the analytical process efficient and effective.

## Conclusion

The purpose of naturalistic inquiry is to describe and interpret some human phenomenon. Often this is done by producing a grounded theory. Researchers should be clear about the methods they employ and the interpretations they make so that others will be able to draw their own conclusions about the research process and outcomes.

Data or theoretical saturation is essential to naturalistic inquiry, especially grounded theory studies. Saturation is essential to knowing when enough data have been collected and therefore has far-reaching implications for research designed to produce a theory grounded in the data. It is not enough to state in the research report that 'sampling was concluded once saturation was reached', or words to that effect. Explaining what saturation means within the context of the study is essential.

In this research note, I have examined the saturation concept in naturalistic inquiry and the challenges it presents so that researchers will both understand the concept and manage the process effectively. Moreover, I have explicated the saturation process in a grounded theory study of community-based antipoverty projects as an illustration of how a difficult issue in qualitative research can be addressed. In reality, claims of saturation should always be supported by an explanation of how saturation was achieved and substantiated by clear evidence of its occurrence.

Researchers looking for a formula for achieving saturation will still not find one here. However, I have provided, as an exemplar, the saturation procedures followed in a grounded theory study. Other qualitative researchers should be similarly specific about the procedures and criteria used to achieve data or theoretical saturation in their studies. Explaining what saturation means and how it occurred is an effective way to counter criticisms of qualitative research and to ensure that methodological rigor and adherence to trustworthiness are clearly evident.

## NOTES

1. Rather than *inductive analysis*, Strauss and Corbin (1998) use the term *analytic induction*. The process is this, in essence: take one case and develop a working hypothesis to explain it. Then take another case and examine whether the hypothesis can explain the new case. If it fails, revise the hypothesis to explain both cases. Next, take the third case and repeat the same process of examining and revising the hypothesis. When there is no need to revise the hypothesis further, and the hypothesis is

expected to fit any new case that may be included, the hypothesis would have been refined enough.

2. An anonymous reviewer recommended that I comment on the applicability of formal theory in determining saturation. Expressing the view that theory is essential to determining saturation, the reviewer suggested that 'perhaps the process of achieving saturation is often perceived as difficult because the use of formal theory is often perceived as being forbidden'.
3. The Jamaica Social Investment Fund, an autonomous agency of the national government, was directly responsible for the social fund program. The agency's purpose was to finance small, community-managed projects designed to improve living standards and help empower people described as 'poor and vulnerable' (Bowen, 2003: 16).
4. The projects were listed in Jamaica Social Investment Fund documents as Hanover Dispute Resolution Community Outreach, Majesty Gardens Health and Family Life Training, Maverley Parenting Project, Miles Town and Content Road Repair, New Building Cassava Processing Plant Equipping, Salt Marsh All-Age School Expansion, St Elizabeth Homecoming Foundation Organizational Strengthening, and the Windsor Girls Home.
5. The projects have not reduced poverty per se; instead, they have been instrumental in improving conditions that were concomitants of poverty.
6. In the interview guide, open-ended questions were categorized under six main areas of inquiry: (1) the community member and his/her role; (2) community association structures, processes, and programs; (3) the social fund project and its 'products'; (4) external relations; (5) problems and challenges; and (6) individual satisfactions.
7. Developed by Thomas Muhr, ATLAS.ti (<http://www.atlasti.com>) offers a variety of tools for accomplishing the tasks associated with any systematic approach to unstructured data.

#### REFERENCES

- Blaikie, N.W.H. (2000) *Designing Social Research: The Logic of Anticipation*. Cambridge, UK: Polity Press.
- Bowen, G.A. (2003) 'Social Funds as a Strategy for Poverty Reduction in Jamaica: An Exploratory Study', doctoral dissertation, Florida International University. *Dissertation Abstracts International* 65: 1557.
- Bowen, G.A. (2005) 'Local-Level Stakeholder Collaboration: A Substantive Theory of Community-Driven Development', *COMMUNITY DEVELOPMENT: Journal of the Community Development Society* 36(2): 73–88.
- Caelli, K., Ray, L. and Mill, J. (2003) "'Clear as Mud": Toward Greater Clarity in Generic Qualitative Research', *International Journal of Qualitative Methods* 2(2): Article 1. URL: <http://www.ualberta.ca/~iiqm/backissues/pdf/caellietal.pdf>
- Charmaz, K. (2003) 'Grounded Theory: Objectivist and Constructivist Methods', in N.K. Denzin and Y.S. Lincoln (eds) *Strategies for Qualitative Inquiry* (2nd Edition). Thousand Oaks, CA: Sage Publications.
- Chenitz, W. (1986) 'Qualitative Research Using Grounded Theory', in W. Chenitz and J. Swanson (eds) *From Practice to Grounded Theory*. Menlo Park, CA: Addison-Wesley.
- Corbin, J.M. and Strauss, A. (1990) 'Grounded Theory Method: Procedures, Canons, and Evaluative Criteria', *Qualitative Sociology* 13(1): 3–21.
- Denzin, N.K. and Lincoln, Y.S. (1994) 'Entering the Field of Qualitative Research', in N.K. Denzin and Y.S. Lincoln (eds) *Handbook of Qualitative Research*. Thousand Oaks, CA: Sage Publications.

- Geertz, C. (1973) 'Thick Description: Towards an Interpretive Theory of Culture', in *The Interpretation of Cultures: Selected Essays*. New York: Basic Books.
- Glaser, B.G. (1978) *Theoretical Sensitivity: Advances in the Methodology of Grounded Theory*. Mill Valley, CA: Sociology Press.
- Glaser, B.G. (2002) 'Constructivist Grounded Theory?', *Forum Qualitative Sozialforschung/Forum: Qualitative Social Research* 3(3). URL: <http://www.qualitative-research.net/fqs-texte/3-02/3-02glaser-e.htm>
- Glaser, B.G. and Strauss, A.L. (1965) *Awareness of Dying*. Chicago, IL: Aldine.
- Glaser, B.G. and Strauss, A.L. (1967) *The Discovery of Grounded Theory: Strategies for Qualitative Research*. Chicago, IL: Aldine.
- Hyde, C.A. (2003) 'Multicultural Organization Development in Nonprofit Human Service Agencies: Views from the Field', *Journal of Community Practice* 11(1): 39–59.
- Lincoln, Y.S. and Guba, E.G. (1985) *Naturalistic Inquiry*. Newbury Park, CA: Sage Publications.
- Morse, J.M. (1995) 'The Significance of Saturation', *Qualitative Health Research* 5(2): 147–9.
- Morse, J.M., Barnett, N., Mayan, M., Olson, K. and Spiers, J. (2002) 'Verification Strategies for Establishing Reliability and Validity in Qualitative Research', *International Journal of Qualitative Methods* 1(2): Article 2. URL: <http://www.ualberta.ca/~ijqm/>
- Padgett, D.K. (1998) *Qualitative Methods in Social Work Research: Challenges and Rewards*. Thousand Oaks, CA: Sage Publications.
- Patton, M.Q. (1990) *Qualitative Evaluation and Research Methods* (2nd Edition). Newbury Park, CA: Sage Publications.
- Stern, P.N. (1995) 'Grounded Theory Methodology: Its Uses and Processes', in B.G. Glaser (ed.) *Grounded Theory 1984–1994* (vol. 1). Mill Valley, CA: Sociology Press.
- Strauss, A. and Corbin, J. (1990) *Basics of Qualitative Research: Grounded Theory Procedures and Techniques*. Newbury Park, CA: Sage Publications.
- Strauss, A. and Corbin, J. (1994) 'Grounded Theory Methodology: An Overview', in N.K. Denzin and Y.S. Lincoln (eds) *Handbook of Qualitative Research*. Thousand Oaks, CA: Sage Publications.
- Strauss, A. and Corbin, J. (1998) *Basics of Qualitative Research: Techniques and Procedures for Developing Grounded Theory* (2nd Edition). Thousand Oaks, CA: Sage Publications.

GLENN A. BOWEN is a program director and affiliate faculty member at Western Carolina University, Cullowhee, NC, USA. His research interests include poverty, social policy, community development, and voluntary action in human services. Address: Center for Service Learning, Cullowhee, NC 28723, USA. [email: [gbowen@email.wcu.edu](mailto:gbowen@email.wcu.edu)]