

Grounded Theory Research: Procedures, Canons and Evaluative Criteria

Juliet Corbin, Anselm Strauss

Department of Social and Behavioral Sciences. University of California. N-631-Y San Francisco, CA 94143, U.S.A.

Abstract: Using grounded theory as an example, this paper examines three methodological questions that are generally applicable to all qualitative methods. How should the usual scientific canons be reinterpreted for qualitative research? How should researchers report the procedures and canons used in their research? What evaluative criteria should be used in judging the research products? The basic argument we propose is that the criteria should be adapted to fit the procedures of the method. We demonstrate how we have done this with grounded theory and suggest criteria for evaluating studies done in this mode. We suggest that other qualitative researchers might be similarly specific about their procedures and evaluative criteria.

In this paper¹ we address three related methodological issues. How should the usual scientific canons be redefined for qualitative research in social science? How should qualitative researchers report the procedures and canons used in their research? What evaluative criteria should be used in judging the products of particular studies? These products are not all identical since researchers may variously aim at producing rich descriptions, ethnographic fact-finding accounts, narratives that yield *Verstehen*, theoretical analyses of particular phenomena, systematic theory, or politically intended consciousness-raising documents. Presumably, researchers who aim at such different goals will use at least somewhat different sets of procedures. If so, we should not judge these research results by exactly the same criteria.

We will attempt to illuminate these methodological issues by demonstrating how we have redefined the criteria in light of the procedures of grounded theory methodology. To do this we have had to explicate some of its procedural steps. We conclude the paper by offering a specific set of criteria for evaluating studies done in this mode. Our intent is to show how this can be done and to challenge other qualitative researchers to take up the task of spelling out their own procedures (Cf. Miles/Huberman 1984; Manning 1987) and evaluative criteria.

¹ We wish to thank several colleagues (Kathy Charmaz, Adele Clarke, Uta Gerhardt, Barney Glaser, David Maines, Virginia Olesen, Leonard Schatzman, Joseph Schneider, Hans-Georg Soeffner and Leigh Star) whose often detailed comments on earlier drafts appreciably improved this paper by aiding us to clear up ambiguities and even inconsistencies, and prevent possible misunderstandings.

1. Grounded theory: Overview and Brief Description of its Canons and Procedures

Qualitative methods, like their quantitative cousins, can be evaluated in terms of their canons and procedures only if these are made explicit. In this section, we describe those of grounded theory. (For a more detailed explanation of the method see: Glaser/Strauss 1967; Glaser 1978; Strauss 1987; Strauss/Corbin 1990). First, however, we shall briefly note an issue well recognized by qualitative researchers. Qualitative studies (and research proposals) are often judged by quantitatively-oriented readers; by many, though not all, this is done in terms of quantitative canons. Some qualitative researchers have, of course, maintained that those canons are inappropriate to their work (Cf. Agar 1986; Guba 1981; Kirk/Miller 1986), and probably most believe these must at least be modified to fit qualitative research. Grounded theorists share a conviction with many other qualitative researchers that the usual canons of "good science" should be retained; but they require *redefinition* in order to fit the realities of qualitative research and the complexities of social phenomena that they seek to understand. These scientific canons include significance, theory-observation compatibility, generalizability, consistency, reproducibility, precision, and verification (Cf. the succinct discussion in Gortner/Schultz 1988: 204).²

² These canons are so much taken for granted by physical and biological scientists, that even philosophers of science do not explicitly discuss most of them except for verification, though other canons like precision, consistency, and relevance are certainly implicit; see Popper 1959.

The dangers that must be guarded against when using such terms lie in their positivistic connotations. There is no reason to define or use those terms in accordance with the standards of quantitative social researchers, any more than one would strictly follow those of physical scientists. Every mode of discovery develops its own standards – and canons and procedures for achieving them. What is important is that all of these are made explicit. Below we shall explicate how this has been done for grounded theory research.

1.1 Overview

Grounded theory derives its theoretical underpinnings from Pragmatism (Dewey 1925; Mead 1934) and Symbolic Interactionism (Park and Burgess 1921; Hughes 1971; Blumer 1969). Though one need *not* subscribe to these philosophical and sociological orientations to use this method, it is important to realize that two important principles drawn from these traditions are built into it. The first principle pertains to change. Since phenomena are not conceived of as static but as continually changing in response to prevailing conditions, an important component of the method is to build change, through process, into the method. The second and related principle pertains to a clear stand on the issue of “determinism”. Strict determinism is rejected, as is nondeterminism. Rather, actors are seen as having, though not always utilizing, the means of controlling their destinies by their responses to conditions. They are able to make choices according to perceived options. Both Pragmatism and Symbolic Interactionism share this stance. Thus, grounded theory seeks not only to uncover relevant conditions but also to determine how the actors under investigation actively respond to those conditions, and to the consequences of their actions. It is the researcher’s responsibility to catch this interplay. This approach is necessary whether the focus of a study is microscopic in scope, say of workers’ interactions in a laboratory, or as macroscopic as a study of the health industry or of the AIDS policy arena.

As in other qualitative approaches, the data for a grounded theory can come from various sources. The data collection procedures involve interviews and observations, in addition to other usual sources including: government documents, video tapes, newspapers, letters, and books – anything that might shed light on the area of questions under study. Each of these can be coded in the same way as interviews or observations (Cf, Gla-

ser/Strauss 1967: 161–184). Naturally, the investigator will use the usual methods suggested in the interview and field work literature to assure credibility of respondents, and avoid biasing their responses as well as their observations (Guba 1981, Hammersley/Atkinson 1983; Kirk/Miller 1986; Johnson 1975).

1.2 Brief Description of Canons and Procedures

As a preface to this section, we offer a cautionary note. When writing a detailed account about grounded theory procedures and canons, one runs the danger of being read as unduly formalistic, and perhaps somewhat sectarian. Yet these procedures and canons must be taken seriously, otherwise a researcher ends up – as have a number of them – claiming to have used a grounded theory approach, when indeed they have used only some of its procedures or have used them incorrectly. Each researcher must tread a fine line between satisfying the suggested criteria and allowing procedural flexibility in the face of inevitable contingencies encountered during the life of an actual research project. However, to the extent that circumstances permit, it is the following of these procedures that gives a project rigor.

1. Data collection and analysis are interrelated processes. In grounded theory, the analysis begins as soon as the first bit of data is collected. In contrast, it is not uncommon for some qualitative researchers to collect much of their data prior to beginning systematic analysis. While this may work well with other modes of qualitative research, it violates the basic foundations of this method. Here, analysis is necessary at the outset of a study because it directs the next interviews and observations. This is not equivalent to saying that there is no standardization of data collection. Each investigator enters the field with some questions or areas for observation, or will soon generate them, and will collect data on these throughout the research endeavor, unless these questions prove during analysis to be irrelevant. However, in order *not* to miss anything that may be salient to the area under study, the investigator must analyze those first bits of data for cues, and incorporate all seemingly relevant issues into the next set of interviews and observations.

Systemically and sequentially carrying out the procedures of data collection and analysis expands the research process to capture all potentially relevant aspects as soon as they are perceived. This process is a major source of the effectiveness of the

grounded theory approach and that which allows it to ground the theory in reality. The research process itself, therefore, guides the researcher to examine all of the possibly rewarding avenues toward understanding. This is precisely why the research method is one of discovery (Glaser/Strauss 1967).

Every concept brought into the study or discovered in the research process is at first considered provisional. It earns its way into the theory by *repeatedly* being present in each interview, document, observation, in one form or another, or by being significantly absent (it should be there but isn't, thus we ask why). Having a concept demonstrate its relevance to the evolving theory (as a condition, action/interaction, or consequence) is one way that grounded theory helps to guard against researcher bias. No matter how enamored the investigator may be of a particular concept, if it does not stand up to continued scrutiny through its repeated proven relevance to the phenomenon under question, it must be discarded. The grounding of concepts in the reality of data, is what gives this method its theory-observation congruence or compatibility.

2. *Concepts are the basic units of analysis.* A theorist works with conceptualizations of data and not the actual data per se. Theories can't be built with actual incidents or activities as observed or reported; that is, from "raw data". These incidents, events, and happenings are taken as, analyzed as, potential indicators of phenomena, which are given conceptual labels. For example, if a respondent says to the researcher, "Each day I spread my activities over the morning, resting between shaving and bathing," then the researcher might label this phenomenon as "pacing". As the analysis proceeds and the researcher encounters other incidents, which when compared to the first appear to resemble the same phenomenon; then these too can be labeled as "pacing". Only by comparing incidents and naming like phenomena with the same conceptual term can a theorist accumulate the basic units for theory. These concepts in the grounded theory approach become more numerous and more abstract as the analysis continues.

3. *Categories must be developed and related.* Concepts that are found to pertain to the same phenomenon are grouped to form categories. Not all concepts become categories. The latter are higher level, more abstract concepts, than those they represent. They are generated through the same analytic process of making comparisons for similarities and differences as was used to produce

the lower level concepts. Categories are the "cornerstones" of a developing theory. They provide the means by which a theory is integrated.

We can demonstrate how concepts are grouped to form categories by continuing with the example presented above. In addition to the concept of "pacing" the analyst might also generate the concepts of "self-medicating", "resting" and "watching one's diet". While coding, the analyst notes that although these concepts are different in form, they seem to represent activities directed toward a similar process: keeping an illness under control. Therefore, they are grouped under a more abstract heading, the category: "Self Strategies for Controlling Illness".

However, merely grouping concepts under a more abstract heading does not constitute a category. To achieve that status (as explained more fully later) the more abstract concept must be developed in terms of its properties and dimensions, the conditions which give rise to it, the action/interaction by which it is expressed, and the consequences that result. For example, once identified, one would want to know some of the characteristics of self-strategies for managing, such as: Is it done some of the time or all of the time? Does it require much knowledge or can one do so with little knowledge? One would also want to address such questions as: How do the strategies differ from those carried out from health practitioners and family members? Under what conditions does someone use self-strategies and when not? What other strategies for self-management do people use? What consequences result from their usage?

Through such specification, categories become defined and given explanatory power. With time, categories will become related to one another to form a theory.

4. *Sampling in grounded theory proceeds on theoretical grounds.* As alluded to above, sampling proceeds not in terms of a sample of a specific group of individuals, units of time, and so on, but in terms of concepts, their properties, dimensions, and variations. When a project is begun, the researcher brings to it some idea of the phenomenon he or she wants to study, then based on this knowledge selects groups of individuals, an organization, or community most representative of that phenomenon. For example, if a researcher wants to study nurses' work, he or she would go to where nurses are working – a hospital, clinic, or home, or all three – to watch what they do.

However, once there, the researcher would not be sampling nurses as such, but sampling for incidents, events, and happenings that denote the work that they do, the conditions that facilitate, interrupt, or prevent their work, the action/interaction by which it is expressed, and the consequences that result. After analysis of the first observations, the term “work” would begin to acquire more specific and complex meanings than the general questions or concepts with which one entered the field. One might note that there are different types of work, that it varies in intensity, and so forth. What one does is try to vary or contrast the conditions as much as possible, in order to determine which might have an impact upon that phenomenon in question.

To maintain consistency in data collection, the investigator would want watch for indication of all important concepts in every observation, those carried over from previous analyses, as well as those that might emerge in site. All of these observations would be qualified by noting the conditions under which the phenomenon occurs, the action/interactional form it takes, the consequences that result, and so forth. Careful note of such qualifiers is important for giving specificity to concepts.

Though one normally does not count the amount of time that one observes or reads about an event or action as indicative of a concept, this could be done. It is just that to sit there and count may keep the researcher from noticing some other event previously not identified that might be more important for the evolving theory. However, later it is possible to count specific kinds of events from systematic field notes providing it seems useful for the overall qualitative analysis to do this. (For an example of this, see Barley 1986.)

It is by means of theoretical sampling that representativeness and consistency are achieved. In grounded theory, however, it is representativeness of concepts, not of persons, that is important. This is because the aim is ultimately to build a theoretical explanation by specifying phenomena, in terms of the conditions that give rise to them, how they are expressed through of action/interaction, the consequences that result and the variations of these. The aim is not to generalize findings to a broader population per se. For instance, one might want to know how representative of the total amount of work that nurses do is “comfort work” (Strauss, et. al. 1985, pp. 99–128). Do nurses engage in it all of the time, some of the time, and what are the conditions that enable them to do it or

prevent their doing it? It is also necessary to situate a type of work in relationship to other types of work that nurses are seen as doing. If, for example, comfort work is a predominant type of work, it will emerge as such. If rarely seen, this will also be noted along with the conditions describing why not. Consistency is achieved because, once a concept has earned its way into a study by showing its relationship to the phenomenon under investigation, then indicators of it are sought in all subsequent interviews and observation. How consistently is it found? Under what conditions is it found?

5. Analysis makes use of constant comparisons.

This means that as an incident is noted, it is compared against other incidents for similarities and differences. The resulting concepts are labeled as such, and in time, these are also compared and grouped as previously described. Making comparisons assists the researcher to guard against bias (you are constantly challenging what you think against the data). Such comparisons also help to achieve greater precision (the grouping of like and only like phenomena), plus consistency (always grouping like with like). Greater precision can be gained when comparisons lead to sub-division of the original concept, resulting now in two different concepts or variation on the first.

6. Patterns and variations must be accounted for.

This means looking at the data for regularity and where that regularity is not apparent. Suppose, for example, an investigator notes that nurses regularly engage in sentimental work (Strauss et. al. 1985) when pediatric patients undergo physically traumatic experiences. If, however, the researcher notes that when nurses are especially busy they delegate this task to another member of the health team or a family member, this becomes a variation of the original pattern. Finding patterns or regularity helps to give order to the data and assist with integration.

7. Process must be built into the theory.

Process in grounded theory has several meanings. It can mean breaking a phenomenon down into stages, phases, or steps. It can also denote purposeful action/interaction that is not necessarily progressive but that changes in response to prevailing conditions. For example, one may speak of a division of labor among factory workers as being flexible, depending upon the situation. Each worker is assigned certain duties and responsibilities. They may, however, be temporarily put aside, if there is a crisis situation, another worker is injured and his/her work takes priority, another needs assistance

with his/her work, something else comes along that seems more important, etc. "Being flexible" offers one explanation of how work gets done despite daily fluctuations in staffing and work loads. Noting how the division of labor shifts and changes in response to prevailing conditions over the course of a day, week, etc. is another way of bringing process into the analysis.

8. *Writing theoretical memos is an integral part of doing grounded theory.* Since the analyst cannot keep track of all the categories, properties, conceptual relationships, hypotheses, generative questions that evolve from the analytical process, there must be a system for doing so. The use of memos constitutes such a system. Memos are not simply about "ideas." They are related to the formulation of theory and its revision during the research process. Memoing begins with the first coding sessions and continues until the very end of the research. It quickly incorporates and elaborates on the coding sessions themselves, and the "code notes" produced by these sessions. (See Strauss 1987: 59–69 for illustrations of code notes.)

Memos vary in form and length according to the stage of the research project and the type of coding one is engaged in. As the theory becomes more elaborated and integrated, so do the memos. Memoing continues until the very end of the research, and often continues into the writing itself. Memos are sorted and resorted during the writing process, which rests on a firm base of theoretical memos. If a researcher omits memoing and moves directly from coding to writing, then a great deal of conceptual detail is lost or left undeveloped, and a less elaborated and satisfying integration of the analysis will result.³ Though theoretical memos and code notes are specific grounded theory procedures, the recording of fieldnote and interview data is not appreciably different than that of other qualitative researchers, as described in the literature.

9. *Hypotheses about relationships among categories are developed and verified as much as possible during the research process.* As hypotheses about relationships among categories are developed during analysis, they are taken back into the field where they are checked out and revised as needed. One difference between grounded theory (and of

course much other qualitative research) is not that hypotheses remain unverified. Rather, in grounded theory (whether involving qualitative or quantitative data) the hypotheses are constantly revised during the course of the research until they hold true for the phenomena under study, as evidence in repeated interviews, observations, or documents. Embedded in these verification procedures is the search for negative or qualifying evidence. This process, entailing as it does constant revisions, results in quite robust analyses (Wimsatt 1981). In *The Discovery of Grounded Theory*, the emphasis on "discovery" and "verification" was perhaps too much identified with certain kinds of research that we opposed, hence many readers of that early book apparently have formed an image of grounded theory research as not at all concerned with verification.

10. *A grounded theorist need not work alone.* An important part of the process for many using this approach is testing concepts and their relationships with colleagues who may have an interest and/or experience in the same substantive area. Opening up one's analysis to the scrutiny of others not only helps guard against bias but discussions often lead to new insights and increased theoretical sensitivity. Research projects carried out by teams also offer opportunities for increasing the probability of collaborative analysis. (For details see Strauss 1987: 138–139.) Where several researchers live or work in proximity, occasional or on-going analysis groups are an excellent research support or resource.

11. *Broader structural conditions must be brought into the analysis, however microscopic in focus is the research.* The analysis must not be restricted solely to the conditions that seem to have immediate bearing on the phenomenon of central interest. These broad conditions include economic conditions, cultural values, political trends, social movements, and so on. In fact, we have suggested elsewhere (Strauss/Corbin 1989) that it is useful to think of structural conditions in terms of a "Conditional Matrix". This involves an imagery of decreasingly inclusive circles embracing set of conditions, beginning with the broadest conditions as noted above and moving inward to conditions that are of lesser scope.

Bringing broader conditions into the analysis means integrating them into the theory. It is not appropriate simply to list them or have them function, as is so often done, as a general background for "better understanding" of what one is primarily

³ For other functions and features on memoing, including illustrations and comments about different types of memos – see Glaser 1978: 82–91, and Strauss 1987: 109–129.

studying. It is the researcher's responsibility to show *specific* linkages between conditions, action, and consequences. For example, we should not simply note that the increase of specialization among physicians, nurses, and technicians has affected the organization and performance of work in intensive care nurseries; rather, we must specify how particular features of the increased specialization link with particular features of the organization and performance of work, and through the later tie them to consequences that result.⁴

1.3 Coding

Coding is the basic analytic process engaged in by the researcher. In grounded theory research there are three basic types of coding: open, axial, and selective.

1. Open Coding is the interpretive process by which data are broken down analytically. The purpose of open coding is to help the analyst gain new insights into the data by breaking through standard ways of thinking about (interpreting) phenomena reflected in the data. A series of techniques have been developed that are designed to further this.

In open coding, event/action/interaction, and so forth, are compared against others for similarities and differences; they are also conceptually labeled. In this way, conceptually similar ones are grouped together to form categories and their subcategories. For example, an analyst might note several incidents, actions, interactions between nurse and client, which appear to be directed at providing comfort. The analyst then labels these as "comfort work". This category can be broken down into its properties and their dimensions. For instance, "comfort work" has the property of type, which can be broken down into its subtypes. Another property is that comfort work has duration. This can be dimensionalized as ranging from long to short episodes. Still another property is the manner in which it is carried out, and so forth. This specification not only develops categories but furthers the specificity and precision of a grounded theory.

Open coding and its characteristics of making use of questioning and constant comparisons enable investigators to break through subjectivity and bias. Fracturing the data forces examination of

preconceived notions and ideas by judging these against the data themselves. A researcher can inadvertently attempt to place data into a category where it does not analytically belong, but by means of making systematic comparisons, these errors will eventually be located and the concepts placed in appropriate classifications.

2. In *axial coding* categories are related to their subcategories, and these relationships tested against data. Also further development of categories takes place and one continues to look for indications of them.

It is through the "coding paradigm" of conditions, context, strategies (action/interaction), and consequences, that subcategories are related to a category. This paradigm is not different from those found in other types of qualitative research, but perhaps it is used more concertedly in grounded theory studies. To continue with our original example of the category termed "comfort work": as soon as the analyst notes an indication of this type of work, he or she would scrutinize the data to determine, what were the conditions that gave rise to that kind of work, in what context was it carried out, by what action/interactions did it occur, and what were the consequences? In this method, if one does not alternately collect and analyze data, there will be large gaps in the theory, as analysis does direct what one focuses upon during interviews and observations.

Suppose the analyst conceived the following hypothesis: Under conditions where cancer patients complain of pain and request relief, nurses provide comfort not only by giving patients something for pain, but also through touch, soothing talk, and so on. However, if in another observation, a cancer patient is heard complaining of pain, yet the nurse is *not* responding in the expected manner, this does not necessarily mean that the hypothesis is false. Now the researcher must discover why the nurse did not respond as predicted by the hypothesis. This latter incident provides a variation of the original hypothesis, which can then be revised to include this and subsequent variations by generating new, provisional, conditional relationships. Doing so makes the theory more conceptually dense; and makes the conceptual linkages more specific. The analyst can say: "Under these conditions, action takes this form, whereas under these other conditions, it takes another." A major intent of grounded theory strategy is to systematically seek the full range of variation of the phenomena under scrutiny.

⁴ For further discussion on this topic, see Strauss/Corbin 1990.

3. *Selective Coding* is the process by which all categories are unified around a central “core” category and categories that need further explication are filled-in with descriptive detail. Thus, this type of coding is likely to occur in the later phases of one’s study.

The core category represents the central phenomenon of the study. It is identified by asking questions such as: What is the main analytic idea presented by this research? If I had to conceptualize my finding in a few sentences, what would I say? What does all the action/interaction seem to be about? How can I explain all of the variation that I see between and among the categories? The core category might emerge from among the categories already identified, or one might find that another more abstract term is needed in order to explain the main phenomenon. Regardless, the other categories will stand in relationship to the core category as conditions, action/interactional strategies, or as consequences of the latter. Diagramming can be a very useful tool for assisting in this integration of categories. So is asking questions like those listed above.

The generalizability of a grounded theory is partially achieved through the process of abstraction taking place over the entire course of the research. The more abstract the concepts, especially the core category, the wider the theory’s applicability. At the same time, a grounded theory specifies the conditions under which a phenomenon has been found in this particular data. A range of situations to which it is applicable (has reference) are thereby carefully specified. In utilizing theory, practitioners or others may encounter somewhat different or not quite the same situation but still wish to guide their action by it. They have to discover to what extent the theory does apply and where it has to be qualified to meet these particular situations.

A grounded theory is reproducible in the limited sense that it is verifiable. One could take the propositions that are made explicit or left implicit (whatever the case may be) and test them. However, probably no theory that deals with a social psychological phenomenon is actually reproducible insofar as finding new situations or other situations whose conditions *exactly* match those of the original study, though many major conditions may be similar. Unlike a physical phenomenon, it is very difficult to set up experimental or other designs in which one can recreate all of the original conditions and control all of the extraneous variables that may impinge upon the phenomenon under

investigation. When testing hypotheses derived from the propositions of a grounded theory, the investigator would have to specify the conditions under which the hypothesis(es) was being tested and make adjustments in the theory to fit those conditions, (if they did not match those originally specified in the theory). Naturally, the more abstract the concepts, and the more variation uncovered in the original study, the more likely it is that the propositions will apply to a broader range of situations.

Another way of explaining reproducibility is as follows. Given the same theoretical perspective of the original researcher and following the same general rules for data gathering and analysis, plus a similar set of conditions, another investigator should be able to come up with the same general scheme. Whatever discrepancies that arise can be worked out through re-examination of the data and identification of conditions that may be operating in each case.

A grounded theory is generalizable in so far as it specifies given sets of conditions linked through action/interaction with sets of consequences. Naturally, the more systematic and widespread the theoretical sampling, the more conditions and variations that will be discovered, therefore the greater the generalizability, precision, and predictive capacity of the theory. If the original theory fails to account for variation uncovered through additional research, these new specificities can be added as amendments to the original formulation.

2. Criteria for Evaluating a Grounded Theory

The success of a research project is judged by its products. Except in unusual instances when these are only orally presented, the study design and methods, findings, theoretical formulations, and conclusions are judged through publication. Yet, how are these to be evaluated and by what criteria? When judging qualitative research it is not appropriate, we have asserted, to use criteria ordinarily used to judge the procedures and canons of quantitative studies. It has been one of the aims of this paper to show how the grounded theory approach accepts the usual scientific canons but redefines them carefully to make them appropriate to its specific procedures. In the instance of any grounded theory study, the specific procedures and canons as described above should be part of its evaluation.

2.1 The Research Process

In a grounded theory publication, the reader should be able to make judgments about some of the components of the research process that led to the publication.

Criterion 1: How was the original sample selected? What grounds (selective sampling)?

Criterion 2: What major categories emerged?

Criterion 3: What were some of the events, incidents, actions, and so on that (as indicators) pointed to some of these major categories?

Criterion 4: On the basis of what categories did theoretical sampling proceed? That is, how did theoretical formulations guide some of the data collection? After the theoretical sampling was done, how representative did these categories prove to be?

Criterion 5: What were some of the hypotheses pertaining to conceptual relations (that is, among categories), and on what grounds were they formulated and tested?

Criterion 6: Were there instances when hypotheses did not hold up against what was actually seen? How were these discrepancies accounted for? How did they affect the hypotheses?

Criterion 7: How and why was the core category selected? Was this selection sudden or gradual, difficult or easy? On what grounds were the final analytic decisions made?

If a grounded theory researcher provides this information, readers can use these criteria to assess the adequacy of the researcher's complex coding procedure. Detail given in this way would be supplemented with cues that could, at least in longer publications, be read as pointing to extremely careful and thorough tracking of indicators, of conscientious and imaginative theoretical sampling, and so on.

2.2 Empirical Grounding of Findings

Criterion 1: Are concepts generated?

Since the basic building blocks of any grounded theory (indeed any scientific theory) is a set of concepts grounded in the data, the first question to be asked of any publication is: Does it generate (via coding-categorizing activity) or at least use concepts, and what is or are their source or sources? If concepts are drawn from common usage (such as, "uncertainty") but not put to technical use, then these are not concepts in the sense of

being part of a grounded theory, for they are not actually grounded in the data themselves.

Criterion 2: Are the concepts systematically related?

The name of the scientific game is systematic conceptualization through conceptual linkages. So, the questions to ask here of a grounded theory publication are whether such linkages have been made and do they seem to be grounded in the data? Furthermore, are the linkages systematically carried out? As in other qualitative writing, the linkages are unlikely to be presented as a listing of hypotheses or in propositional or other formal terms but will be woven throughout the text of the publication.

Criterion 3: Are there many conceptual linkages and are the categories well developed? Do they have conceptual density?

If there are only a few specified conceptual relationships, even if grounded and identified systematically, this leaves something to be desired in terms of the overall grounding of the theory. A grounded theory should be tightly linked, both in terms of categories to their subcategories and between categories in the final integration in terms of the paradigm features conditions, context, action/interaction (strategies) and consequences. Also categories, as mentioned in the body of the paper, should be theoretically dense (have many properties that are dimensionalized). It is the tight linkages, in terms of the paradigm features and density of the categories, that give a theory its explanatory power. Without these, the theory is less than satisfactory.

Criterion 4: Is there much variation built into the theory?

Some qualitative studies report only about a single phenomenon and establish only a very few conditions under which it appears, and specify only a few actions/interactions that characterize it, and a limited number or range of consequences. By contrast, a grounded theory monograph should be judged in terms of the range of its variations *and* the specificity with which these are spelled out in relation to the data that are their source. In a published paper, the range of variations touched upon may be more limited, but the author should at least suggest that the fully study included their specification.

Criterion 5: Are the broader conditions that affect the phenomenon under study built into its explanation?

The grounded theory mode of research requires that the explanatory conditions brought into analysis are not restricted to those that seem to have immediate bearing on the phenomenon under study. That is, the analysis should not be so “microscopic” as to disregard conditions that derive from more “macroscopic” sources: for instance, those such as economic conditions, social movements, trends, cultural values, and so forth.

These also must not simply be listed as background material but directly linked to phenomena through their effect on action/interaction, and through these latter to consequences. Therefore, any grounded theory publication that either omits these broader conditions or fails to explicate their specific connections to the phenomenon(a) under investigation, falls short in its empirical grounding.

Criterion 6: Has “process” been taken into account?

Identifying and specifying change or movement in the form of process is an important part of grounded theory research. Any change must be linked to the conditions that gave rise to it. Process may be described as stages or phases and also as fluidity or movement of action/interaction over the passage of time in response to prevailing conditions.

Criterion 7: Do the theoretical findings seem significant and to what extent?

The question of significance is generally thought of in terms of the relative importance of a theory for stimulating further studies and for giving useful explanations of a range of phenomena. We have in mind here, however, the adequacy of a study’s empirical grounding in relation to its actual analysis insofar as this combination of activities succeeds or fails, in some degree, at producing useful theoretical findings. If the researcher simply follows the grounded theory procedures/canons without any imagination or insight into what the data are reflecting – because he or she fails to see *what* they are really saying except in terms of trivial or well known phenomena – then the published findings can be judged as failing on this criterion. Recollect that there is an interplay between the researcher and the data, and no method, certainly not the grounded theory one, can insure that the interplay will be creative. This depends on three characteristics of the researcher: analytic ability, theoretical sensitivity, and sensitivity to the subtleties of the action/interaction (plus sufficient writing ability to convey the findings). Of course, a creative interplay also depends on the other pole of the re-

searcher-data equation: the quality of the data collected or utilized. An unimaginative analysis may in a technical sense be adequately grounded in the data, but actually it is insufficiently grounded for the researcher’s theoretical purposes. This is because the researcher either does not draw on the fuller resources of data or fails to push data collection far enough.

2.3 Conclusion

This double set of criteria, for the research process and for the empirical grounding of the theoretical findings, bear directly on the issues of how verified any given grounded theory study is and how this is to be ascertained. When the study is published, if components of the research process are clearly laid out and if there are sufficient cues in the publication itself, then the presented theory or theoretical formulations can be assessed in terms of degrees of plausibility. We can judge under what conditions the theory might fit with “reality”, give understanding, and be useful (practically and in theoretical terms). Researchers themselves can be rendered more aware of precisely what their operations have been and the possible inadequacies of these operations. In other words, they would be able to identify and convey what were the limitations of their study.

References

- Agar, M., 1986: *Speaking of Ethnography*. Beverly Hills CA: Sage.
- Barley, S., 1986: “Technology as an occasion for structuring” evidence from observations of CT scanners and the social order of radiology departments.” *Administrative Science Quarterly* 31; 78–108.
- Becker, H., 1970: *Sociological Work: Method and Substance*. New Brunswick, N. J.: Transaction.
- Blumer, H., 1931: “Science without concepts.” *American Journal of Sociology* 36: 515–533.
- Burgess, R. (ed.), 1982: *Field Research: A Source Book and Field Manual*. London: George Allen und Unwin.
- Charmaz, K., 1983: “The Grounded Theory Method: An Explication and Interpretation.” In R. Emerson (ed.) *Contemporary Field Research*. Boston: Little, Brown & Co. 109–126.
- Dewey, J., 1916: *Essays in Experimental Logic*. Chicago: University of Chicago.
- Dewey, J., 1925: *Experience and Nature*. Chicago: Open Court.
- Fielding, N. and Fielding J., 1986. *Linking Data*. Beverly Hills, CA.: Sage.
- Glaser, B., 1978: *Theoretical Sensitivity*. Mill Valley, CA: Sociology Press.
- Glaser, B./Strauss, A., 1967: *The Discovery of Grounded Theory*. Chicago: Aldine.

- Gortner, S./Schultz, P., 1988: "Approaches to nursing science methods." *Image* 20: 22–23.
- Hammersley, M./Atkinson, P., 1983: *Ethnography: Principles in Practice*. London: Tavistock.
- Hughes, E., 1971: *The Sociological Eye*. Chicago: Aldine, 1971. Reprinted, New Brunswick, New Jersey: Transaction, 1987.
- Johnson, J., 1975: *Doing Field Research*. N.Y.: Free Press.
- Kirk, J./Miller, M., 1986: *Reliability, Validity and Qualitative Research*. Beverly Hills, CA: Sage.
- Kuhn, T., 1962: *The Structure of Scientific Revolutions*. Chicago: University of Chicago.
- Le Compte, N./Goetz, J., 1982: "Problems of reliability and validity in ethnographic research." *Review of Educational Research* 52: 31–60.
- Mead, George H., 1934: *Mind, Self, and Society*. Chicago: University of Chicago.
- Park, R./Burgess, E., 1921: *An Introduction to the Science of Sociology*. Chicago: University of Chicago.
- Popper, K., 1959: *The Logic of Scientific Discovery*. N.Y.: Basic Books.
- Strauss, A., 1970: "Discovering new theory from previous theory." In T. Shibutani (ed.) *Human Nature and Collective Theory*. Englewood Cliffs, N. J.: Prentice-Hall.
- Strauss, A., 1987: *Qualitative Analysis*. N. Y.: Cambridge University Press.
- Strauss, A./Corbin, J., 1990: *A Basics of Qualitative Research Theory Methods*. Beverly Hills, CA.: Sage.
- Strauss, A./Corbin, J. "Tracing Lines of Conditional Influence: Matrix and Paths." Paper delivered at the annual meetings of the American Sociological Society, San Francisco, California, August 13, 1989.
- Strauss, A./Fagerhaugh, S./Suczek, B./Wiener, C., 1985: *The Social Organization of Medical Work*. Chicago: University of Chicago.