Reformating Reporting Methods for Case Studies

Dan Bacher, PhD

University of Victoria
Victoria, British Columbia, Canada

For more information contact: dbacher@uvic.ca.

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Abstract

In this paper, some of the methodology associated with case studies is overviewed taking the perspective of the person reading case study reports. Specific suggestions are advanced to allow the reader to more readily interpret the evidence reported. These suggestions are based on a combination of personal teaching experience and publications in which case study and other similar qualitative techniques have been addressed. It is concluded that the provision of "best practice" reporting guidelines can help readers interpret case studies and, as a result, should lead to an increase in the believability of case studies.

Over time different research techniques are, partly as a function of their credibility, utilized to a greater or lesser extent. A brief recent history of case study research provides a clear example of this variability in usage. In the early to middle part of the twentieth century, case studies were sometimes used to portrait whole organizations or communities (cf., Whyte, 1955); to describe phenomena -for example, findings about mental health in the longitudinal case studies conducted by Vaillant (1977)- or to describe individuals -for example, as the basis of a developmental model in Levinson's (1978) examination of male adults. This trend of continuous, albeit somewhat infrequent, usage continued through most of the 1980s; however, the primary emphasis in educational and social science research was on large scale quantitatively-based studies. More recently, however, the popularity and frequency of case studies has increased (eg., Baker, & Zigmond, 1995; Ballard, Bray, Shelton, & Clarkson, 1997; Callahan, 1996; Greenwood & Parkay, 1989). The acceptance of case studies as a viable research tool has reemerged, in part, because people want a convenient and meaningful technique to capture a time-framed picture of an individual's-or some other aggregate that can be construed as an unit or collective-characteristics and performance. Case Studies also appeal to people because they have what might be termed 'face-value credibility.' That is, they can be seen to provide evidence or illustrations with which some readers can readily identify.

With this increased presence, books (e.g., Abramson, 1992; Bassey, 1999; Merriam, 1988; Yin, 1994) have emerged in which research methodologies to conduct case studies have been described. In addition, other sources in which other qualitative procedures (e.g., Lincoln & Guba, 1985; Miles & Huberman, 1984; Spradley, 1979, 1980; Strauss, 1987; Strauss & Corbin, 1990) that contain assumptions and procedures compatible to those advanced for case studies are being endorsed. These sources have been very valuable in providing guidance as to the conduct of case studies in that the researcher has an array of possible general framework for which to select.

From the perspective of the reader, however, these case study conduct guidelines are not as helpful. The reader is faced with the task of interpreting the results of published case studies, which can be problematic in part because of the different assumptions that can be brought to case studies. The most notable source of variability is found in the methods that are used to select, present, and then report evidence. In some cases, for example, the reader often has no basis to establish how or why any illustrative quote was selected. While methodological disagreements among practitioners of case study research will continue, at the time of publication, authors of case studies have an obligation to reveal how the investigation was conducted and how collected evidence was handled and interpreted. Thus, the primary purpose of this paper is to overview some components of case study methodology to suggest a few reporting procedures that will allow the reader to ascertain the evidential basis of published case studies. In addition, case study methodology will be considered more generally from the reader's viewpoint with the goal of increasing the believability of case study reports.
Requirements for case studies

As suggested in the introduction, there is one fundamental requirement placed on a researcher when reporting case studies; that is, the onus on the researcher is to conduct the case study in such a way that the result can be communicated to the reader. There are several implications that follow from this assertion. First, the reader must be able to determine from the evidence presented the nature of the argument, and why and how conclusions were drawn. Second, the reader must be able to determine, without doubt, the evidential nature of the case as published. Stated differently, the reader should be able to determine, without the benefit of the writers' "head-notes" how the case was developed. Therefore, to reiterate, the evidence must follow convincingly and - when the purpose of the presented case is to move beyond description to explanation- should allow the reader to determine the basis upon which any generalization(s) are being advanced. In the paragraphs that follow some reader-based case interpretation guidelines are suggested, which in large part have been drawn from existing literature, with minor additions or shifts in emphasis. These guidelines are intended to assist the reader as he/she examines case studies to provide a framework to help him/her decide if the presented evidence is convincing and if the necessary material has been provided to allow the reader to extend, connect or otherwise apply the case report to his/her own circumstances.

Merits of guidelines

While there may be advantages to proposing a set of "best practice" guidelines that can be used to judge the integrity of any published case study, there are perils as well. The main risk in offering such suggestions, however, is that researchers do not bring the same set of assumptions when designing and conducting case studies. This can be illustrated by contrasting and comparing some of the different methodological perspectives that can be incorporated into case study writing (e.g., Barrett, 1991; Bassey, 1999; Lincoln & Guba, 1985; Holstein & Gubrium, 1994; Kazdin, 1982; Spradley, 1979; Stake, 1995; Stenhouse, 1988; Strauss & Corbin, 1990; Yin, 1994). The debate in case study design and implementation can, for example, revolve around the degree to which evidence is presented and then interpreted versus deconstructed, integrated with head-notes, and presented. Thus, in proposing "best practice" guidelines, the probability is that some authors/readers might reject any guidelines as being inappropriate because they are not congruent with the manner in which they believe a case study should be completed. There is, however, a counter-argument. Simply put, by the time a case study is published the conduct of the case study is no longer germane. All researchers, regardless of their beliefs about case study completion, must reveal the steps they followed so that others can determine the merits of the completed work. Put differently, in order for the reader to be convinced that case studies have merit, he or she need to be able to determine the relationship between argument and evidence. Applying "best practice" guidelines should assist the reader to make this determination; in short, such guidelines might provide the basis to increase the believability of case study reports.

Basis for recommendations

The reader guidelines proposed below are drawn from a number of sources (e.g., Lincoln & Guba, 1985; Miles & Huberman, 1984) and have been evolving over the last couple of years (Bachor, 2000; Davis & Bachor, 1999). They also are based on approximately fifteen years of teaching graduate students to conduct case studies. The guidelines that follow are organized into three sections: preliminary considerations, evidence gathering and interpretation, and case reports.
Personal beliefs. Prior to presenting these guidelines, it seems important to unfold my own methodological stance so that readers are not misled about my own beliefs. Originally I was trained in the empirical tradition, where the main strategy of building knowledge was to make inferences from samples to a presumed population and/or to compare or contrast groups. Eventually I found this tradition wanting—not so much for any assumptions underlying the method, as for a feeling of lack of applicability. Many of the questions that I was interested in examining did not meet the requirements of the between-group comparison designs described, for example, by Campbell and Stanley (1966). In addressing some topics associated with individuals with special educational needs, for example, I could not identify a population—often locating a few appropriate participants was a challenge—thus, could not randomly draw a sample or meet other assumptions. Thus, I began to explore three methodological alternatives: single case design, ethnography, and case studies. While applying these procedures, initially I remained within the philosophical boundaries that marked my early training, as it was, and is, possible to remain within this tradition and to employ all three of these approaches (cf., Kazdin, 1982). Unfortunately, however, this framework was too restrictive in that the problems addressed or the questions framed were often restricted to comparisons of "A or not A," which sought a bivalent solution.

Thus, I sought a different analytical framework and recently began to apply the principles of fuzzy logic (Kosko, 1994). The application of this framework underscores the relative nature of problems and requires that the full complexity of problems be considered. As Kosko, explains in applying fuzzy logic

... everything is a matter of degree. ... Fuzziness has a formal name in science: multivalence. The opposite of fuzziness is bivalence or two-valuedness, two ways to answer each question, true or false, 1 or 0. Fuzziness means multivalence. It means three or more options, instead of just two extremes. It means analog instead of binary, infinite shades of gray between black and white (Kosko, pp. 18-19).

This method of reasoning allows a more flexible interpretation of evidence. As a result different and more appropriate problem-specific measurement models and assumptions can be brought to problems as a function of their nature.

Preliminary Considerations: Problem Representation

When the reader examine a case study report, he/she should be able to find early in the article a clear statement of the conceptual underpinnings of the case. Further the reader should be able to readily determine how this conceptual issue was translated into a researchable question or issue, or into a series of questions or issues.

An aside may help to anticipate some counter-argument. Some researchers may be tempted to argue that having a problem representation is outside the paradigm they are employing to conduct their investigation. At the point of submitting the case study report for publication, however, my argument is that the process of conducting the research is no longer germane. Each case study researcher or research group can argue in favour of any particular tradition that is congruent with their world view, with the caveat that they apply the method in question rigorously.

By the time the report is published, however, the reader must be able to discern both the fundamental conceptualization of the case and to identify questions or issues under investigation that are derived from it. The match between the conceptualization and its translation, the problem representation, must be congruent. Both Merriam (1988) and Yin (1994) make similar suggestions, although expressing this notion somewhat differently. Yin, for example, highlights the importance of ensuring that questions and research goals
correspond, arguing that this correspondence must be addressed prior to conducting the research.

The following example illustrates problem representation. Suppose researchers claimed that they were exploring autism in the context of a family. In selecting participants, however, they included only mothers. By arguing that mothers represent the viewpoints of the family, a problem representation mismatch results as part of the family context is ignored. If, on the other hand, all family members (mother, father, any siblings, and the autistic individual him- or herself) are included, there is a higher probability of a conceptual and logical match. Simply including all possible participants does not, of course, ensure a full problem representation, other logical and logistical considerations must be taken into account. Thus, the fundamental feature of problem representation is a clearly delineated match between the research question/problem and the researcher's original intent in posing that question/problem. Thus, the reader needs to search to determine if there is an intent-question(s)/problem(s) match.

A second feature that the reader might apply to problem representation in some cases is related to the nature of the work undertaken. The longer the time frame over which the case study is conducted, the more difficult it will be to ensure problem representation. While there may be congruence between the question(s) and the intent posed at the outset of the study; the question(s)-intent may not equate over time. That is, in posing a question or questions that are investigated longitudinally, the intent-question(s)/problem(s) match may need to be modified to take into account potential changes in participants or the specific dynamics of the proposed study (context, location, participant descriptors, et cetera).

In summary, problem representation is instrumental to the clear formation of a logically stated and conceptually clear research formulation. Further, as a subsequent consideration to problem representation, the logistics of the research endeavor need to be articulated - at a minimum this must be completed by the time the case report is complete, although my personal preference is for a much earlier clarification. Thus, at least by the time of the case-based research report, it must be clear to the audience how "What was the purpose of the research?" was translated into "How was the research done?".

Evidence Collection and Interpretation

The next logical step is for readers to evaluate how the evidence was collected. To determine if the case study is believable, the reader needs to determine if the evidence has been collected in a systematic and thoughtful manner to ensure that it is both accurate and meaningful. To make this judgement, the reader - again regardless of how the researcher's evidence was collected and interpreted - should be able to find answers to the following three questions (a rationale is provided for each one or each group):

1) How was evidence collected? What sources of evidence were employed? What rules of evidence were applied?

   In the first instance, a clear statement of how evidence was collected, processed-transcribed for example- and incorporated in the writer's theoretical perspective must be made obvious to the reader. If, for example, head-notes are treated as evidence that will be incorporated into the evidential basis of the reported case, this posture must be revealed.
2) How will evidence be verified and confirmed?

There are four major issues relating to convincability and generalizability - when it is appropriate to address - that the reader should check. First, the issue(s)/problem(s)/context(s) to be investigated need to be represented in a conceptually clear manner so that any reader will find them convincing. Second, evidence should be provided that the collected information has been verified; that is, the researcher(s) must have taken steps to ensure that the informants' intent has been captured in the collected evidence. Third, the researcher(s) should have provided evidence that the case has been conducted in a manner that is consistent with the principles of trustworthiness - in particular the type and extent of triangulation and the presence of an audit trail should have been documented - as described by Lincoln and Guba (1985) or, stated differently, that the criteria for internal and external validity as explicated by Yin (1994) are met.

3) How has the evidence been interpreted, conclusions reached and/or judgements made?

This is perhaps the point where the case study reader needs to exercise the greatest degree of caution in deciding how believable any case report is. Due to the considerable variation in possible approaches to case studies and more generally qualitative research, the reader can not predict what will be presented in any case study. Regardless of the approach to evidence taken, however, the researcher(s) has/have an obligation to unfold how evidence is interpreted. Further, the reader should be informed as to what degree the evidence presented is representative of informants' viewpoints as opposed to being more representative of the researcher's head-notes.

Researchers have a number of choices they can make when interpreting evidence to help the reader follow their perspective, such as using computer-based interpretations like Atlas/ti (Muhr, 1997), using constant comparison (Strauss & Corbin, 1990), or following a procedure that emphasizes contextual quotations and head-notes (Kvale, 1996; Strauss, 1987). The selected procedure will, of course, vary as a function of perspective and is not limited to the illustrations given.

Case reports

In the final phase of case study research, the researcher must, in my view, try to move beyond his/her perspective so that reader can unfold the relationship between the researcher's perspective and the evidence collected for the current case.

The dilemma in reading many case studies is that it is not clear how the portraited evidence was selected for inclusion in the case report. It is possible to select evidence to correspond with the claims that the author wishes to advance, as may be the case in the head-note evidence-incorporation approach to case studies. Alternatively, the author can choose to present representative illustrations of the obtained information. In either approach, to increase the believability of the case study the underlying assumptions must be revealed.

In order to meet the latter goal, two approaches to case study reporting are possible to assist readers in making sense out of reports:

   a) Graphical or visual approach. Illustrative graphs or other pictorial representations that provide important information about the design or
context of the study can be very helpful to the reader. For example, Valencia and Au (1997) provide helpful graphs to show the characteristics of the locations of the case studies they conducted. More generally, Miles and Huberman (1984) describe a qualitative data analysis procedure that provides the reader with a picture of the increasing abstractions starting with a synopsis of the original evidence known as a dendrogram. More recently, some authors (Bachor & Baer, 2000; Scanlan, Stein & Ravizza, 1989; Shulha, 1999) have quantified dendrograms to some degree, which allows the reader to quickly determine the typicality of the evidence being reported.

b) Ratios. To permit the reader to judge the evidential basis of a case study, I have (Bachor, 2000; Davis & Bachor, 1999) suggested that a ratio can be computed. This ratio is the number of times a point is raised within a theme divided by the total number of points raised within each theme. To illustrate with a very general example, if the theme of a response to a question was "male-female relationship issues" and there were a total of 12 respondents, 12/12 would mean that all respondents had made salient remarks about this theme. Next, quotes that best illustrate the reported theme would be selected from these 12 responses.

In sum, if the goal is to generalize, it is necessary for the author(s) to reveal to the reader the evidential base around which conclusions are based. There are a number of ways of accomplishing this step - primarily, however, it must be obvious to the readers how conclusions were drawn.

Conclusion

In this paper, I have argued that a reader perspective must be taken if case study reports are - and more generally case study research is - to be seen to have credibility. In sum, it has been argued that the researcher must unfold his/her perspective and clarify how evidence has been interpreted so that the reader can determine if the case study as published has integrity.
References


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