

Qualitative methods in aphasia research: basic issues

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Abstract

As clinical aphasiologists seek different ways to understand the complexity of aphasia within naturalistic and social contexts, there is an increasing need to provide background information on various research paradigms not widely used in the field. Consistent with recent calls for qualitative research in clinical aphasiology, this article provides information on the rationale, design characteristics, strengths and weaknesses of this research paradigm and its usefulness in clinical aphasiology.

Introduction

As both a scientific enterprise and a therapeutic endeavour, the field of clinical aphasiology has been oriented to the systematic investigation of aphasia and its impact on the speech and language abilities of individuals with aphasia. Incorporating facts and assumptions about aphasia into various conceptual and clinical frameworks, the practitioners in this field have created a number of theories and applications that are employed in hospitals, clinics, centres and classrooms on a daily basis.

The success of these theories and applications in clinical aphasiology is due primarily to the care with which researchers in the field have obtained and verified the facts and assumptions regarding aphasia. Throughout the history of the field, the discovery processes have incorporated careful observation and controlled experimentation to generate the data that translate into these facts and assumptions. Since at least the time of Jackson (1874) and continuing throughout this century (e.g. Holland 1980, Luria 1970, Porch 1967, Schuell 1965, Taylor 1965) careful researchers have employed various systematic procedures to obtain both descriptive and numeric data that reflect directly on aphasia. As such, this discipline has always been oriented to the collection of both qualitative and quantitative data to achieve a holistic and verifiable picture of aphasia, its impact and what can be done about it.

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Recently, this orientation to both quantitative and qualitative data has been joined by a call for more *qualitative research methodologies* as well. Led by Holland's (1982) pioneering work on functionality in clinical aphasiology, by a concern regarding various methodological and theoretical limitations in current practice (e.g. Darley 1991, Kearns and Thompson 1991, Lyon 1992, Thompson and Kearns 1991, Wertz 1987) and by the shift toward considerations of the social handicapping conditions of neurological impairment (e.g. LeDorze and Brassard 1995, Parr 1994), attempts to employ additional research methodologies to obtain more authentic, functional and naturalistic data on aphasia are underway. Addressing this need, various researchers have called for the application of qualitative research methodologies designed within the social sciences to assist the more traditional quantitative research approaches in adding to our knowledge of aphasia and its impact in authentic settings (e.g. Damico *et al.* 1995, Elman 1995, Holland 1994).

It is the purpose of this article to discuss some of the basic issues regarding qualitative research and how it may be applied in clinical aphasiology. Specifically, the article will discuss the foundational base for developing and using qualitative research methodologies in the social sciences, the design strengths of this research paradigm and comment on some of the perceived weaknesses of qualitative research methods when applied to the study of aphasia.

Qualitative research as an analytic paradigm

Qualitative research may be viewed as a set of systematic and interpretive practices designed to seek answers to questions that stress how social actions and social experiences are created and sustained. It is a complex research paradigm with a long and well-established history (Vidich and Lyman 1994). Indeed, since the early twentieth century, the fields of anthropology and sociology have used a number of qualitative research methods to study the complexities of cultures, societies and interactional dyads (e.g. Garfinkel 1967, Geertz 1973, Goffman 1959, Lynd and Lynd 1929, Malinowski 1922, Schegloff 1968, Veblen 1918, Weber 1949, Whyte 1943) and much of what we know and apply regarding such complex social phenomena as language and cognitive development has been gathered primarily through qualitative research methods (e.g. Bloom 1971, Brown 1973, Bruner 1975, Piaget 1974).

As an analytic paradigm, qualitative research does not favour one single methodology over any other. The choice of data collection procedures and preferred methods of analyses depend upon the social phenomena under investigation, the questions that are asked and the contexts within which the phenomena exist (Nelson *et al.* 1992). As such, whenever this research paradigm is utilized, it produces a *bricolage*—a kind of pieced-together but carefully constructed set of practices and strategies that provide solutions to a problem in a concrete situation (Levi-Strauss 1966). This bricolage may manifest itself in many ways; subsumed under the rubric of qualitative research there are a number of traditions of inquiry (e.g. bibliographic study, case study, conversation analysis, ethnography, ethnomethodology, grounded theory, historical methodology, interactional analyses, phenomenology) that utilize numerous types of naturalistic data collection strategies (e.g. observation, interviewing, artifactual analysis, analysis of texts). It is important to recognize, however, that the selections of any of these traditions of inquiry and data collection strategies to study social phenomena are guided by

careful deliberation. Just as with quantitative research methods, qualitative researchers must have a defensible rationale for what tradition of inquiry is selected and how the data are collected. That is, the choice of methodological practice must be 'pragmatic, strategic, and self-reflexive' (Nelson *et al.* 1992: 2).

The objectives of qualitative research in the social sciences

To best understand how qualitative research has been structured to focus on social phenomena, it is important to understand the objectives of social science research. That is, what do the social scientists who employ qualitative research want to accomplish? While there are a number of potential objectives in social science research, there are at least five general objectives that are addressed when employing the methodologies of qualitative research.

Taking a learning role

Qualitative research is designed to enable the social scientist to take the role of a learner (Silverman 1993). Rather than having to start with a significant amount of prior knowledge (at least enough to formulate a testable hypothesis), the researcher can start with a lack of knowledge about the phenomenon under investigation. All that is needed is an interest in the phenomenon, an opportunity to investigate and an appropriate qualitative methodology. The researcher studies the phenomenon and asks, 'what's going on here?'; the qualitative researcher adopts a learning role (i.e. finding out about the phenomenon) rather than a testing role (i.e. testing or subjecting a hypothesis to possible falsification). The key to qualitative research and its learning function is to recognize that the methodologies in this paradigm are oriented to the understanding of various social actions and how they are accomplished (Denzin 1970, Garfinkel 1967, Geertz 1973).

Understanding procedural affairs

Consistent with qualitative research and its learning function, the second objective of social science is to examine social phenomena as procedural affairs (Fielding 1988, Garfinkel, 1967). That is, 'how' questions (e.g. 'how do individuals with aphasia compensate for their deficits' or 'what do individuals with aphasia have to do to compensate for their aphasia during communication') replace 'why' questions (e.g. 'why do individuals with aphasia use compensatory strategies'). Indeed—and this is especially relevant in clinical aphasiology—the understanding of how things *function* is central to the analysis of social action in qualitative research. Said another way, rather than focusing on the relationship between variables, it is an interest in the mechanisms or processes by which social action is accomplished that is the major focus of inquiry (Hammersley and Atkinson 1983, Sacks 1992).

Presenting a detailed view

Because of the interest in the 'how' or 'what' of social action, the third objective of qualitative research is to present a detailed view of the social actions or phenomena under investigation. Rich description of the behaviours, the contextual

elements and the various actions are needed if we are to determine ‘what’s going on here?’ or ‘how is this social activity accomplished?’ (Agar 1986, Sacks 1992, Spradley 1980). Due to the complexity of the phenomena under investigation, the reliance on numerical data, predetermined categories or classificatory schemes, or even reduced summaries of behaviour is often insufficient by itself. Thick and detailed description that can lead to rich and productive interpretation of the social activities and elements of interest is needed (Creswell 1998, Denzin 1989, Geertz 1973, Hammersley and Atkinson 1983).

Focusing on the individual

Due to the belief in the social sciences (at least the ethnomethodological versions) that social action and social institutions of all kinds are created and maintained by individuals, it is necessary to focus on the individual or the dyad rather than a larger social conception or institution (Heritage 1984). Since ‘macro’ or ‘global’ social structures arise and are sustained from ‘micro’ or ‘local’ social actions, the micro features of social life—manifested in the immediate actions of the individuals—are of primary concern to qualitative researchers (Garfinkel 1967, Goodwin 1981, Heritage 1984).

Understanding the mundane

Finally, since we are social creatures and because social action is what we accomplish and operate within on a daily basis, it is the objective of qualitative social research to describe and understand the mundane (Creswell 1998, Heritage 1984). That is, the routine or everyday activities and actions of individuals as they go about their daily lives. It is within these activities that we find the roots of society and the phenomena that define us as social in nature. Consequently, the qualitative researcher is oriented to data collection, description and analysis of the mundane rather than the behaviours that may appear to be unusual or exotic.

Once we recognize that the agenda of social science research is based upon (at least) these five objectives, we can better understand the design characteristics that both make up qualitative research and that give it the strength needed to address social phenomena.

The strengths of qualitative research

It has been stated that work becomes scientific by adopting the methods of study appropriate to its subject matter (Silverman 1993). In this sense, qualitative research is scientific in nature. It is a research paradigm that is designed to make explicit and to appropriately analyze social phenomena according to the objectives of social science. Based on this research agenda, qualitative researchers have evolved specifically designed characteristics to investigate social phenomena. Surveying the qualitative literature and drawing from our own scope of practice, we note seven characteristics that lend strength to qualitative research:

1. *Qualitative research is designed to study phenomena in natural settings*

A foundational concept in the social sciences is that the behavioural phenomena that make up social actions are always contextually situated (Bateson 1972, Duranti and Goodwin 1992, Glaser and Strauss 1967, Lincoln and Guba 1985).

Consequently, these phenomena cannot be adequately studied without attending to the variables that act to influence them. This 'field focus' is essential if we want to understand what the actual social actions are and how they operate. In clinical aphasiology, for instance, Ferguson (1996) was able to develop a much richer (and collaborative) conception of communicative competence by applying this qualitative characteristic in her research. She found that it was not sufficient to consider competence only invested in the individual, rather, the recognition and establishment of communicative competence rises from the dyadic interaction; it is the interactional context that best determines communicative competency. Similar findings revealing the importance of the collaborative dyad to communicative success or failure has also been demonstrated by others in qualitative aphasiology research (e.g. Goodwin 1995, Perkins 1995) and it is the likely impetus for some of the current interest in more collaborative types of aphasia treatment. As stated by Kirk and Miller, 'qualitative research is a particular tradition in social science that fundamentally depends on watching people in their own territory' (1986: 9).

2. *Qualitative research sustains a preference for open and relatively unstructured research designs*

In order to collect and analyze natural, dynamic and complex data, it is important to have the flexibility to adjust the methods of both data collection and analysis to fit the needs of the research at any specific time (Bryman 1988, Spradley 1980). This includes the ability to shift the methods of data collection, to shift the focus of the research, to maintain a preference for descriptive categories developed specifically for the actual data, and the opportunity to return to data collection even after analysis has commenced. Without this flexibility, the descriptiveness and attention to the myriad variables that make up any range of social phenomena would not be possible.

One example of the importance of such a preference in clinical aphasiology may be seen in the work on compensatory strategies (Simmons-Mackie and Damico 1997). In this investigation, the authors employed an open stance regarding their conceptions of compensatory strategies. Rather than utilizing *a priori* concepts and categorizations of compensatory strategies, they employed several qualitative approaches to discover how their participants with aphasia compensated for their problems during social interactions. As the investigation proceeded, the authors continually modified their data collection and analysis procedures to optimally investigate and focus on the phenomena as they were revealed. As a result of these efforts, the authors formulated a complex and socially functional definition of compensatory strategies and a description of how these strategies operated. Without the preference for an open and relatively unstructured research design, however, these data and findings would not be possible.

3. *Qualitative research is designed to use the researcher as the key instrument of data collection*

If open and relatively unstructured research designs are to be used, it is essential that the data collection be oriented toward such an open stance. Consequently, there must be a system in place that can focus on different variables or switch the focus of data collection as the situations warrant (Eisner 1991, Maxwell 1996).

Therefore, a researcher trained in numerous data collection strategies—one who can collect complex social data and perform on-line analysis—is needed to make the necessary adjustments so that authentic and effective research can continue. It must be remembered that unlike experimental paradigms where variables are controlled, in qualitative research the data collection occurs in the natural setting and the variables are not controlled. Rather, they must be adjusted to if the research is to be effective. Typically, this is not possible without using the researcher as the primary data collection instrument (Denzin 1989). As discussed by Meehl (1954), the best data collection instrument is frequently the well-trained researcher.

4. *Qualitative research is designed to collect descriptive data (most often using words or pictures rather than numbers)*

This design characteristic is most consistent with the first three objectives of social science research (i.e. the learning role, understanding procedural affairs, presenting a detailed view) and since an understanding of the function of social actions and the importance of sufficient detail is necessary to address social phenomena that are complex in nature, actual descriptions of social action in terms of strategies, activities, devices, behaviours and knowledge systems rather than using pre-determined categories or numbers enables a better understanding of those behaviours and patterns of interaction. This focus on specific and detailed description of phenomena is the reason that this research is described as 'qualitative' as opposed to 'quantitative' research. Of course, using quantitative data is certainly legitimate and often beneficial in qualitative research, but it should be used in accordance with actual descriptions of the social phenomena (Fielding and Fielding 1986, Kirk and Miller 1986, Ragin 1987).

5. *Qualitative research is designed to orient to a more focused description than a broader one*

Again, in keeping with functional and detailed analysis (i.e. understanding procedural affairs) qualitative research analysis tends to work with a few cases and more variables (real social action in all of its complexity) while quantitative research analysis tends to work with a few variables (predetermined dependent/independent measures) and many cases (Guba and Lincoln 1994, Ragin 1987). This enables a focus on the inter-dependence of social actions with the context and provides for sufficient time and focus to understand the complexity of social phenomena in context (Guba and Lincoln 1994).

The advantages of this focused description to the understanding of the social actions of individuals with aphasia may be illustrated in a recent study by Goodwin (1995). Using conversation analysis, the author describes the co-construction of talk by a severely impaired individual and his interactional partners. Due to the detailed analyses conducted, the complexity of the collaborative interaction is richly described. The data demonstrate that by using hand gestures, minimal verbalizations and various vocal strategies (e.g. intonation, sound stretches, pauses) that were deeply embedded within the talk and participation frameworks of others, the individual with aphasia was able to establish interaction far beyond what might be expected given his level of severity.

While the focus on fewer subjects might not be appropriate to research designs oriented to statistical predication (e.g. experimental research), the application of

statistical measures is less relevant within the qualitative paradigm where the objective is exploration of a social phenomenon in detail rather than testing hypotheses.

6. *Qualitative research is designed to focus on the process of accomplishing social action rather than the product of social action as the outcome of the analysis*

Consistent with the goal of understanding the procedural affairs of social phenomena, the data analyses are oriented to how things happen rather than the fact that they happen. Consequently, the analyses performed are nearly always oriented to the mechanisms of action and the processes that occur to manifest the phenomenon under investigation (Eisner 1991, Garfinkel 1967, Moustakis 1990, Sacks 1992).

Again, in clinical aphasiology, the importance of the focus on process (i.e. how social action is accomplished) can be demonstrated by numerous studies. Milroy and Perkins (1992), Wilkinson (1995), Klippi (1995) and Oelschlaeger and Damico (1998) have all described how individuals with aphasia—at different levels of severity—are able to overcome their linguistic impairments to establish successful communicative interactions with their conversational partners.

7. *Qualitative research is designed to focus on the participants' perspectives to achieve a deeper understanding of the data*

Since social action is situationally constrained and based upon the activities and meanings brought to these actions by the participants, qualitative research is oriented to how the participants understand and react to what is happening in the social settings. To ensure appropriate interpretation of the data collected, it is important that the researcher incorporate the conceptual frameworks of the participants into the analyses. This has been done with positive results in aphasia. A number of studies have been conducted that illuminate the importance of the client's perspective. For example, the work conducted by Parr (1994) on the coping strategies needed after stroke, LeDorze and Brassard's (1995) work on the consequences of aphasia from the patient's perspective, and Oxenham *et al.* (1995) work on the judgments made about aphasia from the clinician perspective versus the family perspective all provide important views into the concerns and needs of the individuals with aphasia and their families. This emphasis on the *emic* perspective has a history in anthropology (Agar 1986, Harre 1980, Pike 1967) and, according to some authors (e.g. Bryman 1988), this design characteristic is the sine qua non of qualitative research.

The weaknesses of qualitative research

Given the previously discussed objectives of qualitative research in the social sciences and recognizing that the design characteristics of qualitative research were developed to address those objectives, this research paradigm has a long history of success. Indeed, when properly employed to investigate complex social phenomena, the various methodologies under the qualitative rubric are both powerful and sufficient. It would be ingenuous, however, not to discuss some of the weaknesses

of these methodologies. There are, of course, limitations to all forms of research methodology and qualitative research is no exception. Based on our own research experiences and on the methodological discussions in the literature, there are at least four notable weaknesses when applying qualitative methodologies within clinical aphasiology.

Qualitative Research is Labor-Intensive

To a greater extent than most experimental and quasi-experimental methodologies, qualitative research requires more personal and intensive effort from the principal researcher. This primarily is due to the necessity of examining the phenomenon of interest in great detail to understand how the phenomenon functions (i.e., focus on procedural affairs). Consequently, there is nearly always the need to collect a corpus of naturalistic data that must be transcribed and then carefully analyzed in minute detail to discover objects and items of significance. In such instances, it is possible to spend hours on the collection, transcription and analysis of a data sample that might run only 15 minutes in length. Further, there is always the need to verify the authenticity of one's findings through methods like data triangulation (Flick 1992) and analytic induction (Fielding 1988, Silverman 1993) which require even more time and effort.

Of course, experimental and quasi-experimental research also requires significant time commitments. The kinds of activities, however, are usually different and less labour-intensive. For example, rather than carefully analyzing a sample in detail to discover and then describe the interactional strategies that are present, quantitative researchers may employ a predetermined classification system that requires identification and counting of specific behaviours. Even when collecting data from a large number of subjects, this research activity is less effortful.

Additionally, since the qualitative researcher is used as the primary instrument of data collection and analysis, much of the labour cannot be assigned to a research assistant. Unlike experimental and quasi-experimental research, the qualitative researcher must perform most of the required tasks. Given these facts, it is not surprising that untenured assistant professors often are encouraged to eschew qualitative research ('until you get a few quick studies published.')

Qualitative research involves experience-based learning

Another weakness of most qualitative research is that the beginning researcher must gain extensive hands-on experience to learn many of the nuances of the research strategies. Although there are numerous excellent texts and primers on methodology, the complexity and demands of qualitative research require more than just 'book knowledge'; most social scientists have learned the necessary research skills in a kind of on-the-job training in the field or through an apprenticeship system. While this may not seem different from any novice experimentalist who may also acquire work experience on research design and statistical analysis, the open and flexible nature of the qualitative methodologies linked with the necessity for detailed and verifiable analysis typically makes the 'qualitative apprenticeship' more demanding both in terms of time and effort. Further, given the comparatively small number of experienced qualitative researchers in clinical aphasiology, it is difficult to find accessible mentors that can assist in this experience-based learning.

Qualitative research operates from a different set of methodological assumptions

Since the objectives of qualitative research are different from those of quantitative research, the design characteristics and the methodological assumptions of qualitative research are also different from most experimental approaches. While this is actually a strength of the research paradigm when dealing with complex social phenomena, it can also be a weakness if the consumers and practitioners of qualitative research don't employ these different assumptions to understand and evaluate the research. When this occurs, the logic of the research will not be transparent and this will result in problems. Two examples may illustrate this weakness.

Establishing the credibility of findings

The first example revolves around the credibility of qualitative research and its findings. That is, can the methods, the data, and the results of the research be trusted. Traditionally in experimental and quasi-experimental research, this question is addressed through the discussion of the internal and external validity of the research design (Campbell and Stanley 1966). Care is taken to control potential variance by controlling all aspects of the research design (Kerlinger 1973) and by employing the principle of replication (Sidman 1960). It is reasoned that if the research study is conceptually sound and methodologically controlled, then the study (or at least stages of the study) should be replicable by independent investigators. If this is the case, then research bias or error is less likely. Therefore, within quantitative research methodologies, the logic of replication and the control tactics needed to establish such replication helps guide the evaluation of research credibility. This logic is often manifested by the continued emphasis on the standardization of experimental design, reliability and verifiability (Smith 1970).

Within the qualitative research paradigm, however, the logic of replication as a check on credibility is not always possible. There are several reasons for this. First, due to the objectives of qualitative research, it is essential that data be collected in naturalistic settings and that the contextual variables are considered during analysis rather than eliminated or controlled. Consequently, the contextual variation that would be referred to as 'extraneous' variance in experimental studies (Kerlinger 1973) will be present and may interfere with statistical measurement of reliability or the opportunity for exact replication.

Second, since social data are the focus of the research, the variables are often quite complex and not simple to categorize. Indeed, categorization is often inappropriate. To consistently categorize data, the researcher has to reduce the complexity and the uniqueness of the phenomenon to reach a consensus of classification. In effect, there is a trade off between the power of detailed and unique description (which may later result in a deeper understanding of the phenomena) and the convenience of grouping data (Lincoln and Guba 1985). While the logic of replication is appropriate when employing statistical analyses in quantitative research, it is not always a desirable practice when the thick description and rich interpretation of qualitative research are the goals of the research (Denzin 1970, 1989). Instead, different sets of methodological assumptions are employed.

Within qualitative research, the methodological assumptions revolve around the

objectives of descriptiveness and explanatory adequacy, not predictability. Consequently, what Kirk and Miller (1986) term 'quixotic reliability' (i.e. the type of reliability targeted in experimental contexts where the data collection method yields an unvarying measurement) is less of an issue than are the dependability and authenticity of the data collected (Denzin 1989, Moustakis 1990, Wolcott 1994). To address authenticity, data triangulation rather than procedures to increase reliability are required (Denzin 1989, Fielding and Fielding 1986, Flick 1992). This means that controlling the context and the discovery procedures are not a priority. Rather, by employing different data collection and analysis procedures across occurrences and locations (i.e. triangulation), the researcher can compare and contrast the different data obtained across the different events over different occasions. This helps ensure that the data is authentic. Then, by comparing and contrasting the variety of data while describing the phenomena of interest, the authenticity of the interpretation is ensured. In effect, the credibility and robustness of findings are assured through repeated observation and analysis of specific social activities.

Just as with experimental research, however, reliability cannot be ignored during some stages of the qualitative process (Kirk and Miller 1986, Silverman 1993). When classification systems are employed, when coding responses to questions, or when data extracts or data transcriptions are used and not made available to consumers of the research, the lack of reliability indices is an appropriate criticism. For example, during text analyses that employ a set of analytic categories (predetermined or constructed anew) or when identifying specific behaviours for analysis, inter-rater reliability is necessary (Bryman 1988, Silverman 1993). Further, during participant observation within the ethnographic tradition, a particular form of reliability—termed 'dependability'—is required (Hammersley and Atkinson 1983, Silverman 1993). In this case, the researcher must detail the relevant context of observation and keep four kinds of notes so that others will know precisely what type of context was observed and if various problems and biases occurred (e.g. Spradley 1980). This will allow another researcher to enter similar types of settings to establish a general form of replication (Maxwell 1996, Wolcott 1994). While not the degree of replication and statistical reliability required in experimental research, it does enable another researcher to verify important aspects of the previous research; such general forms of replication often are required in qualitative studies.

Given the different methodological assumptions, however, it is important that researchers focusing on social phenomena not be so obsessed with the trinity of validity, reliability, and generalizability that they fall prey to methodolatry. That is, 'the slavish attachment and devotion to method that so often overtakes the discourse in the education and human services fields' (Janesick 1994: 215). It is important to recognize that the essence of qualitative research pivots on its descriptive and explanatory power not the strict adherence to procedural constraints.

The clinical utility of qualitative research

A second illustration of the differences in the methodological assumptions of qualitative versus quantitative research involves the clinical utility of the research and its findings. That is, how easily and safely can the research results be applied to instances in the 'real world'. In quantitative research, this issue is based on

statistical logic whereby large numbers of dependent variables are collected from a randomly selected sample of subjects, the data are recorded and predictive statistics are employed to determine how significant the findings are and how appropriate it is to apply these findings to cases outside of the experimental or quasi-experimental setting.

In qualitative research, however, the significance and utility of the findings are based on the awareness and operation of underlying principles/mechanisms that give rise to complex observable variables (Glaser and Strauss 1967). Instead of statistical representativeness or mathematical (statistical logic), therefore, the issue of clinical utility (i.e. can the findings be applied to other subjects or populations) are couched in terms of the generalizability of cases to theoretical (or underlying operational) propositions rather than to statistical populations or universes (Bryman 1988). That is, in qualitative research the application of findings is not determined by the number of subjects or the mathematical probabilities regarding the recurrence of behaviour but, rather, by an understanding of the underlying themes, mechanisms and bases for human social action (Silverman 1993). Once understanding is achieved through qualitative methods, these foundational mechanisms are extended to other instances and individuals and predictions and generalizations are made. This is the ultimate description and understanding of social phenomena as procedural affairs.

As illustrated by these two examples, many of the assumptions and practices of experimental and quasi-experimental research cannot be applied to qualitative research; different methodological assumptions are required. Despite these differences, qualitative research has been successful because—like quantitative research—there is a focus on ensuring the credibility and utility of results, albeit with different strategies. However, if the qualitative researcher does not recognize and draw attention to these differences in the operating logic of the qualitative paradigm, then the credibility and the practical utility of this research and its findings may be weakened.

Qualitative research may be open to abuse

The final general weakness that may be identified in qualitative research revolves around the issue of individual research projects or reports and how well they are implemented. Since qualitative research sustains a preference for open and relatively unstructured research designs, this research may be open to abuse from practitioners with less experience or understanding of the methodologies and from unethical researchers. The potential for abuse is most often noted in two types of problems: a lack of methodological rigor and the lack of verification of findings.

The lack of rigor in data collection and analysis

This problem typically arises from statements that data collection and analysis procedures in qualitative research can be adapted to meet the needs of the ongoing research. To an extent, this point is true and it is a strength of the paradigm. Indeed, to investigate complex social phenomena openness and flexibility are essential. However, openness is not the same as lack of rigor, nor is flexibility a justification for methodological anarchy. Within the literature and practice of qualitative research, there are a number of specific data collection and analysis techniques that

have proven effective for investigating complex social phenomena (e.g. Creswell 1998, Denzin and Lincoln 1994, Silverman 1993); these analytic procedures must be used appropriately to meet the acceptability criteria of qualitative practice. While it is true that procedures may be switched, modified and combined to create triangulation during data collection or to vary the level of data analysis, acceptable methods are required. As with any research approach, qualitative research must be rigorous, critical, and objective in handling data and all methodological decisions must be well-conceived and defensible (Creswell 1998, Denzin 1970, Guba and Lincoln 1994).

The absence of verification of findings

The second problem that might result from poor application or abuse of qualitative methodologies involves the lack of verification of the findings. This is a serious problem that is never acceptable in qualitative research. To deny verification of one's findings cuts to the very heart of the credibility of the one's results (Hammersley 1992, Popper 1959, Silverman 1993). While various qualitative methodologists prefer to use different terminology (e.g. Creswell, 1998, Eisner 1991, Hammersley 1992, Janesick 1994) and often criticize adopting experimental concepts like validity to discuss this issue (e.g. Agar 1986, Fielding and Fielding 1986, Guba and Lincoln 1994), the credibility of results is always a concern.

When discussed, verification methods in qualitative research revolve around relating or comparing multiple data types to support or contradict various interpretations. According to Eisner there must be a 'confluence of evidence that breeds credibility' and enables the researcher to create a 'compelling whole' for his or her conclusions (1991: 110). Always the interpretation must be supported. In effect, just as with other forms of scientific investigation, qualitative researchers must create a warrant for their inferences (Fielding and Fielding 1986).

When discussing this issue, various applications of the criterion of refutability or falsifiability are advocated as the most acceptable tactic to support research findings or conclusions (Hammersley 1992, Popper, 1959). Referred to as 'analytic induction' (Fielding 1988, Silverman 1993) or 'strip analysis' (Agar 1986), the process may be described as follows: based on the initial research, the social or cultural phenomenon is described or defined; a hypothesis about how it operates is formulated and then the researcher takes a small body of naturalistic data and examines it in light of the hypothesis. When this examination occurs, the question asked is 'does the hypothesis relate to this data or not?' If the data is consistent with expectations, a practical certainty is created and the hypothesis is sustained. If the data is not consistent with expectations, the hypothesis is rejected and reformulated until it can account for the deviant cases. In many ways, this type of 'constant comparative method' (Kirk and Miller 1986) as used in qualitative research is equivalent to statistical testing in experimental research except it is more stringent (Bryman 1988, Fielding 1986, Kirk and Miller 1986). This is because with this qualitative method, there is no room for random error or variance, all exceptions are eliminated by revising the hypothesis until all the data fit.

While it is true that this fourth weaknesses of qualitative research does exist, the problem is not with the concept and value of the paradigm. Rather, the problem is poor application of qualitative research. Clearly, if we are to advance the acceptability of this research paradigm in clinical aphasiology, we must require

appropriate application. Engaging in qualitative research cannot be used as a smoke-screen for muddled thinking, weak research design, lazy researchers, or fear of statistics. Such poor application is not tolerated in quantitative research and should not be tolerated in qualitative approaches. Many criteria for judging the quality of qualitative research have been formulated (e.g. Bryman 1988, Creswell 1998, Denzin and Lincoln 1994, Silverman 1993) and can be applied by those concerned about this issue.

Conclusion

In trying to serve the needs of individuals with aphasia, clinicians and researchers should use all resources at their disposal. An emerging resource well worth attention is qualitative research. This system of research is a rigorous, powerful and well-accepted scientific paradigm that has a place in clinical aphasiology. With its strengths and objectives, it can assist in understanding and addressing the impairments, disabilities and the handicaps of aphasia. As with other research approaches, however, qualitative research can only be a legitimate epistemological activity if it can demonstrate its value as a system of scientific inquiry and can defend its conceptual and/or methodological foundations. Perhaps in this article some initial concepts and principles have been made more transparent.

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