

**The Science of Qualitative Research:
Validity and Reliability Re-framed in Terms of Meaning**

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Abstract

Qualitative research affords opportunities to expand the scope of psychological inquiry to regions not amenable to quantification, but also raises particular challenges with regard to the notions of reliability, internal and external validity. This work explores how these principles of science apply to qualitative research. This includes a consideration of the notion of 'approach' and its impact on the subject matter of science, criteria besides the use of quantification that implicitly underpin all conceptions of science, and will also entail re-framing the notions of internal and external validity and reliability in light of the abiding place of meaning within qualitative research.

Qualitative research affords opportunities to expand the scope of psychological inquiry to regions not amenable to quantification, but also raises particular challenges with regard to the notions of reliability, internal and external validity. This work explores how these principles of science apply to qualitative research. This includes a consideration of the notion of 'approach' and its impact on the subject matter of science, criteria besides the use of quantification that implicitly underpin all conceptions of science, and will also entail re-framing the notions of internal and external validity and reliability in light of the abiding place of meaning within qualitative research. It is hoped this effort may help to underline how "all psychology researchers, phenomenologists and positivists, are expected to share a commitment to scientific values and the search for the truth." (Polkinghorne 1989, p.44)

The Role of 'Approach' in Psychology

von Eckartsberg (1998a) and Giorgi (1970) use the term 'approach' to "denote the ways a science's basic presuppositions are intimately interrelated with the content it takes up and the methods it evolves." (von Eckartsberg, 1998a, p. 4) In this light the relationship between paradigms, approach and method on the one hand and a science's 'content', on the other, describes a mutually implicative and co-constituting relationship.

Let us illustrate this dynamic with two examples. The first is the famous assertion by Boring (cited in Hornstein, 1988) that 'intelligence' is by definition what intelligence tests test. This was based on an appropriation of the model of physics, since it was Boring's position that "if physicists can define *weight* as what their scales measure, then why shouldn't psychologists define intelligence as what their tests measure?" (p. 11, emphasis in original) A second example of this relationship is found in B.F. Skinner's attitude toward experiential dimensions of psychological inquiry, revealed in the assertion that 'behavioral scientists,' "can follow the path taken by physics and biology by turning directly to the relation between behavior and the environment and neglecting the *supposed* mediating states of mind," (1971, pp. 12-13, emphasis added).

Both Skinner and Boring serve to illustrate the extent to which approach informs and delimits the 'content' of their discipline. Both presume an empirical positivist epistemology and endeavor to construct a mode of inquiry to suit it. While Skinner acknowledges that certain dimensions of human experience will be put out of play for such an inquiry he concurrently justifies this exclusion in terms of their presumed irrelevance to a scientific inquiry, at least as he conceives of it. Hornstein (1988) and Polkinghorne (1989) illustrate that in the transformation of Psychology into a natural science, method was chosen before and then proceeded to both dictate and delimit subject matter. This was accomplished by "transform[ing] or redefine[ing] psychological phenomena so as to render them capable of quantification, thereby making it possible to define psychology as a science on traditional grounds." (Hornstein, 1988, p. 2) This work seeks to explore the ways in which qualitative methods can expand the scope of psychological inquiry beyond the limits of what can be readily quantified and still maintain the character of 'scientific' inquiry. This will entail a re-consideration of what constitutes science, along with the reframing of internal and external validity in terms amenable to qualitative research.

Qualitative and Phenomenological Approaches

Hornstein asserts that in its efforts to establish itself as a scientific discipline, psychology encountered two distinct options. "On the one hand, psychology could have become a science on grounds other than its being quantitative, which would have meant advancing a conceptualization of science that differed from the standard natural science mode. On the other hand, an attempt could have been made to transform or redefine psychological phenomena so as to render them capable of quantification, thereby making it possible to define psychology as a science on traditional grounds." (p. 2) Qualitative research aligns itself with the first, more challenging, option for psychology's development into a science.

'Qualitative research' is something of an umbrella term denoting research models that focus on the meaning of the phenomena researched. "Thus in the broad context of research strategies, *qualitative* is identified with a commitment to the natural logic of language as the preferred medium for understanding human affairs." (Polkinghorne, 1989, p. 45, emphasis in

original) 'Phenomenological research' is a subset of the more general term 'qualitative research' that focuses on the 'lived meaning' of experiences of our research participants. "The locus of phenomenological research is human experience, and it approaches topics of interest to psychology through their presence in conscious awareness." (Polkinghorne, 1989, p. 45) Phenomenologically based inquiry "ask[s] how meaning presents itself to experience." (Polkinghorne 1989, p. 45) While phenomenological research does this by way of interrogating accounts of participants' experiences, it differs from merely qualitative research in asserting that the meanings uncovered by the researcher do not exist in themselves in the data we examine. Instead, "They exist only in relation to the attitude and set of the researcher." (Giorgi, 1985a, p. 15) It is only in light of the 'explication guiding question(s)' (see von Eckartsberg, 1998b) posed to the data by the researcher that the meaning of the phenomenon emerges.

This priority of meaning in phenomenological research is also reflected in the use of the term 'co-researchers' to describe participants in research in this tradition (von Eckartsberg, 1989b). These individuals "are not to be treated as experimental objects for the use of the researcher; the role and responsibility of the participants is to share their experiences with the researcher." (Polkinghorne, 1989, p. 47) The world of lived experience is termed the 'life-world' by von Eckartsberg (1998a). The life-world is "the locus of interaction between ourselves and our perceptual environments and the world of experienced horizons within which we meaningfully dwell together." (von Eckartsberg, 1988a, p. 4) It is this meaning bestowing presence in and to the life world to which phenomenologically oriented qualitative research attends. As von Eckartsberg states, "the emphasis [of phenomenological research] is on the study of configurations of meaning in the [data] involving both the structure of meaning and how it is created" (1988b, pg. 22). This recognition of the co-constituted nature of both the data and findings of the research is what distinguishes phenomenological analysis from the more general term, 'qualitative research'. It is to this co-constituting activity of our human participants by and through which meaning is immanent in experience that phenomenologically oriented inquiry attends. It is thus its implicit adherence to the second option as described above by Hornstein by way of its emphasis on experience and meaning that underlies much of the criticism of qualitative

methods generally and phenomenological methods specifically on the grounds of their being 'un-scientific.'

Questions of Validity¹

Qualitative methods in general and phenomenological research in particular, face interrogation on many levels as regards the validity of such enterprises. The first of these levels of challenge has to do with the question of whether such inquiry, using qualitative techniques, can rightly be called 'science.' Giorgi addresses this line of challenge directly (1985b). In his view, "In order for an activity to be considered scientific, it must be able to be performed by many researchers, the findings should be intersubjectively valid, and there must be a definable method." (1985b, p. 72). Clearly these criteria apply to quantitative research. The great majority of research in psychology is carried out using quantification and experimental procedures adopted from the natural sciences. Thus it is carried out by 'many researchers' utilizing generally agreed upon and readily 'defined methods.' Reliability, however, to practitioners of quantitative research might not be seen as 'intersubjective' but mathematical. Indeed, part of the appeal of quantification and statistical analysis is clearly its facility in producing just such reliability and replicability. I would assert that the 'intersubjective agreement' referred to by Giorgi has to do with the implicit acceptance by quantitative researchers of quantification as the means by which to render psychological phenomena amenable to observation and manipulation in their research and of statistical analysis as the basis for the knowledge claims it produces.

Like quantitative researchers, qualitative researchers "engage in systematic and rigorous searches seeking a depth of understanding that extends beyond a cursory view and commend their findings to the scientific community for review and critique." (Polkinghorne 1989, p.44) Hopefully, this symposium will demonstrate that the qualitative methods presented here to adhere to the same requirements of scientific inquiry as quantitative research. The body of research produced at the University of Dallas and elsewhere establishes that qualitative research can be performed by 'many researchers,' that it comprises 'definable' procedures, and the discussion,

¹ This section is substantially indebted to an article currently in press by this author: Garza, G. (In press). Thematic Moment Analysis: A Didactic Application of a Procedure for Phenomenological Analysis of Narrative Data. *The Humanistic Psychologist*.

below, of its external validity should establish that it is 'intersubjectively valid.' Let us now turn to the two other main uses of the term 'validity' in reference to scientific research to further underline how "all psychology researchers...are expected to share a commitment to scientific values and the search for the truth." (Polkinghorne 1989, p.44)

Internal validity

Textbooks in research design typically describe 'internal validity' as referring to the question of whether a study investigated what it claimed to investigate (see Ray, 2003, for example). For experimental studies this involves matters like the assessment of the construct validity of any measures used and operational definitions employed as well as of the design of the investigation and the control it affords the inquiry in terms of the knowledge claims made by the researchers. Given the qualitative character of phenomenological research the question of internal validity needs to be re-formulated to coincide with the sort of material being investigated and the means used to carry out such investigations.

One aspect of internal validity in qualitative research is the question of whether the research studied what it set out to study. Phenomenological researchers study phenomena—appearances to consciousness. "That is, what is experienced is understood to be an experiential given to the person experiencing the object, the person is genuinely experiencing some given phenomenon, the claim that what is present to the person's consciousness actually exists in the way it is given is not affirmed." (Giorgi and Giorgi, 2003, p. 249) Said another way, phenomenological inquiry studies 'lived experiences' or psychological realities and 'places into brackets' the question of the object's 'transcendent reality'—its existence apart from the consciousness to which it is given. "One makes no commitment to the existence of the given within the reduction." (Giorgi and Giorgi, 2003, p. 249) To invoke Giorgi's wonderfully illustrative example, the difference is that between saying "this meal seems salty to me" and claiming the meal IS salty (presumably as an object fact available to anyone who should taste it). (Giorgi and Giorgi, 2003, p. 249) The meal may or may not be salty to anyone who would taste it but a phenomenological perspective requires that we restrict our knowledge claims to the arena of

phenomena—to experiences as they are meaningfully lived and co-constituted by the individual to whom these experiences are given.

Polkinghorne (1989) argues that evaluating the internal validity of a phenomenological investigation also involves a judgment of whether a presented result “inspires confidence because the argument in support of it has been persuasive.” (p. 57) In this “the reader must be able to follow the processes that have led to the conclusions and to accept them as valid.” (Polkinghorne 1989, p. 57) This is one of the main reasons for presenting the data in their ‘raw’ or unanalyzed form along with the transformations of those data by the researcher in appendices to their work. In doing this the researcher fulfills his or her obligation “to facilitate the reader’s understanding by presenting the results in a way that opens the reader to the data and to the researcher’s movement through those data.”, (p. 82) This step also provides the reader with insight into the ‘interpretive frame of reference’ (Churchill, Lowery, McNally, and Rao, 1998) of the researcher and gives readers the opportunity to judge for themselves whether any meaningful, revelatory, or significant data have not been sufficiently addressed in the analysis.

Churchill, et. al. (1998) point to a third dimension of internal validity in asserting that the interpretive character of phenomenological research poses special requirements for the assessment of its internal validity. “If research results are always *relative* to the researcher’s questions and interpretive frame of reference, then questions regarding the reliability of the interpretive procedure and interpretation of results must be posed while keeping in mind this characteristic of the interpretive process.” (Churchill, et. al. 1998, p. 82) In this light it can be asserted that the issue of internal validity in phenomenological research lies in the ability to discern the relationship between the insights offered by the analysis of the data and the epistemological and interpretive framework from which these insights emerge. In this light the question of whether a phenomenological inquiry has studied what it intended to can be re-framed in light of these three criteria: 1) Did the study examine phenomena as revealed and co-constituted appearances to consciousness and bracket the question of the transcendent reality of that which was investigated? 2) Have the steps of the researcher’s procedure been made explicitly clear and can the reader ‘follow’ the researcher’s moves through the data and to the

results? (This includes the consideration of whether anything significant in the data has gone un-addressed.) 3) Has the researcher's 'interpretive frame of reference' been made explicitly clear, and in this light can the reader see what the researcher has seen²? It is worth noting here that this is exactly what occurs with reference to quantitative research. The researcher's frame of reference (quantification, principles of experimental and research design and of statistical analysis) is implicitly shared by that researcher's peers and it is on this basis that the research is judged to be internally valid or not. Given the variety of interpretive frames of reference available in qualitative research, it is the responsibility of the researcher to make their own as explicit as possible. This provides the qualitative researcher's peers with the basis to make a judgment of the work's internal validity. It is in essence an extra step on the part of the qualitative researcher to make this frame of reference explicit, but it is a necessary one given the absence of the implicit common interpretive ground that is present in quantitative research.

External validity

Research design texts typically refer to external validity in terms of the 'generalizability' and 'replicability' of a given result (again, see Ray 2003 as an example). 'Generalizability' refers to whether the insights gained in a particular investigation will hold true in contexts other than the original one. Clearly this is a goal of phenomenological research that aims for a general structural description based on multiple descriptions of some variety of experience. Giorgi characterizes this level of analysis as an attempt "to depart from the specifics [of individual experiences] to communicate the most general meaning of the phenomenon." (1985a, p. 20) von Eckartsberg describes it as an attempt to "'universalize' or 'essentialize,' that is, [to] transcend the existentially situated specificity in favor of an essential transsituational understanding." (von Eckartsberg, 1998b, p. 42) I would go so far as to suggest that even research that achieves only idiographic results achieves some measure of this generalizability inasmuch as these results can be used as

² Note that this does not mean the reader must 'agree' with the researcher's findings. It is sufficient that they can comprehend how the researcher arrived at the understanding he or she put forth, given the data, the procedure, and the frame of reference from which the interpretive findings arose. See below regarding Churchill, et. al.'s (1998) three analyses of the same data and the thematic coherence of the three analyses.

a template for understanding the experience of others besides our co-researchers in situations analogous to the ones we have investigated.

Another sense of external validity has to do with an investigation's 'replicability'—the ability to produce the same result (at least within certain parameters prescribed by laws of probability) in multiple applications of the method and measures used in a study. Clearly part of the appeal of quantification and statistical analysis is its facility in producing just such replication. The inherent interpretive activity of phenomenological research and the impact of individual researchers' interpretative frames of reference and personal styles preclude the achievement of replication understood as 'equivalence'. Still this is not to say that some measure of external validity is not attainable using these methods.

Since phenomenological research investigates phenomena, or lived meaning, it is through criteria related to meaningfulness that its external validity should be judged. Churchill, et. al. (1998) suggest that 'coherence' is such a criterion. That is, to be considered externally valid two sets of descriptive results generated by the same data but by different researchers need not be identical to be externally valid. They must instead be 'coherent' both in light of the data they examine and in terms of each other—they must 'fit' together with the data. This holds true both with respect to the final results of phenomenological research and to the steps employed to achieve them. Giorgi acknowledges that "all researchers would not have to have identical meaning units [an intermediate stage of analysis for Giorgi] for the procedure to be valid." (Giorgi and Giorgi, 2003, p. 252) Churchill, et. al. (1998) demonstrate persuasively with three different idiographic analyses of the same data that thematic coherence can be used a criterion for asserting external validity. In this article three different researchers analyze one set of data and come to three different formulations of the thematic structure of the co-researcher's experience. Still, even though each analysis bears the stamp of the individual researcher's frame of reference and interpretive style, the three analyses bear a thematic coherence both with respect to the data and to each other. Thus external validity in qualitative or phenomenological research is not a matter of replication of results but of meaningful coherence between results, data, and the techniques and approach by which they are found. In this light the external validity of a

phenomenological inquiry can be re-framed in light of these criteria: 1) Do the results point to a transsituational, essential character of the phenomenon under investigation? And, 2) Do the results bear a thematic coherence with the data from which they emerge, the researcher's interpretive framework, and the understanding of the data held by the reader?

Concluding Remarks

What this work has attempted to show is how all inquiry rests upon usually implicit epistemological foundations that comprise one's called 'approach' (Giorgi 1970, von Eckartsberg, 1998a). This is not to be avoided or ignored but rather to be made explicitly clear. Only in this way can the 'content' of our inquiries be freed from being subject to epistemological or methodological constraints adopted *a priori*. Since method is tied to subject matter and research goals in all scientific inquiry, both qualitative and quantitative, ever greater variety in the procedures available to researchers brings an ever greater variety of subject matter within the scope of such inquiry. The questions of what we study, how we study it, and what sorts of knowledge claims can be made from studying anything exist in a mutually informed and mutually implicative reciprocal relationship. To acknowledge this interconnection is to free the researcher to explore what she or he wished to and to develop methods specifically suited to that task. To give any aspect of this living relationship priority over the others is to foreclose on the possibility of discovery even before any inquiry takes place.

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