

QUANTITATIVE AND/OR QUALITATIVE METHODS IN THE SCIENTIFIC STUDY OF RELIGION

by *T. L. Brink*

Abstract. Qualitative research methods are essential to provide richness, but they are vulnerable to distortion of data by theory. The quantitative approach is necessary for the precision of hypothesis testing, but, by itself, this method is too critical to be creative. Religious studies should use both methods in alternate phases, with the qualitative approach creating new hypotheses and the quantitative approach critically testing them.

Keywords: methods; qualitative; quantitative; religious studies; research methods.

Methodology is too important to be left to methodologists.

—H. S. Becker, *Sociological Work*

The measure of “truth” in both religion and science is the ability to make sense out of the world, to solve puzzles (Murphy 1989). Whether or not something can be classified as a “scientific” endeavor depends on the methodology employed in the investigation rather than on the content being investigated. C. Lastrucci (1967) suggested that the scientific method involves these stages:

1. Formulate the problem by means of empirically testable propositions (hypotheses).
2. Study relevant literature for assistance in offering data or methods.
3. Construct appropriate research design.
4. Select appropriate sample.
5. Gather new data and process them into usable form.
6. Interpret data.

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[*Zygon*, vol. 30, no. 3 (September 1995).]

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7. Relate results to hypotheses and previous literature.
8. Present findings in a report.

The real cleavage in the social sciences is not so much between the disciplines. Psychologists, sociologists, anthropologists, political scientists, and historians frequently study the same topics. They frequently communicate with scholars outside of the social sciences, in fields such as philosophy, theology, aesthetics, and literature. Scholars from diverse backgrounds may study similar topics and appreciate each other's work, provided that they have some understanding of (or at least respect for) the other's methodology. *The real problem is not a lack of communication between disciplines, it is a lack of appreciation of different methodologies.* It is this partisanship about research methods that not only impairs interdisciplinary communication but has divided certain disciplines into hostile factions.


R. Bogdan and S. J. Taylor (1975) identified the two major perspectives on methodology within the social sciences as "positivism" (which is concerned with objectively verifiable facts, independent of the subjective states of individuals) and "phenomenology" (which emphasizes those subjective states). T. Sarbin (1986) called these two methods positivistic versus contextual. J. McKeon (1958) traced the positivist tradition back through Auguste Comte and Aquinas to Aristotle, while tracing the phenomenological (contextual) back through Wilhelm Dilthey, Augustine, and Plato. Perhaps Dilthey's distinction between the nomothetic and idiographic would suggest the positivistic and phenomenological, respectively. H. Caton (1986) dubbed the two approaches "materialism" and "Platonism."

Other terms for the distinction between these methods also have been noted (Polkinghorne 1991): reductionistic versus molar (Van Wicklin 1990), social science versus humanistic (Sharma 1991), and testing specimens versus casting nets (Runkel 1990).

Another way to view the difference between these approaches is to see a spectrum running between the poles of richness and precision. The phenomenological approach yields rich qualitative data which fully immerse us in the meanings and values of the human species. The positivistic approach results in quantitative data of great precision. Different research techniques would appear at different points along this spectrum, as shown in table 1.

Notice that statistical procedures (whether descriptive or inferential) are possible only in the last three forms, and parametric statistics (that is, those based on the bell curve) are possible only with interval or ratio scales. Of course, we could count the number of times that a particular word is used in Scripture, or we could correlate a

Table 1. Descriptors Ranging between Richness and Precision

	<i>Form of Description</i>	<i>Example</i>
Richness  Precision	ineffable data	mystic experience
	metaphor	poetry music art drama
	narrative	prose fiction case study participant observation open-ended interviews
	nominal scale	categories
	ordinal scale	ranks
	interval and ratio scales	• scores

mystic's galvanic skin response with data from magnetic resonance imaging. That would make research more precise, but there may be some trade-off with richness.

It could be argued that terms such as *richness* and *precision* are prejudicial, feeding into the biases of those with exaggerated views of either form of research. Richness could imply "creative" to the defenders of qualitative methodology but "mushy" to its detractors; precision could imply "rigorous" to the defenders of quantitative methodology but "dull" to its detractors. My position is that both methods, when done well, can be creative and rigorous but, when done poorly, degenerate into mushiness or dullness.

The remainder of this article contends that *the debate between the qualitative and quantitative camps is reducible to preferences about the relative merits of richness versus precision*. Since the accuracy of descriptions requires precision and their adequacy requires richness, both poles are essential, and there is no inherent superiority of one over the other. Because *both quantitative and qualitative techniques ignore one of the poles, both are imperfect alone, but both are essential for a complete description of human experience*, including the human experience of religion.

QUALITATIVE METHODS: NECESSARY BUT LIMITED

Descriptors of the qualitative approach would be *phenomenological, humanist, antireductionist, holistic, ethnographic, contextual, grounded, interactionist, reflective, hermeneutic, subjective, verstehenist*. Unfortunately, it is not that easy to come to any consensus about just what the qualitative approach is (Halfpenny 1979). Apparently, qualitative researchers prefer the richness of their diversity to the precision of consensus.

Most would agree that qualitative research includes all of those approaches in which the emphasis is on describing the subject's experience in terms of subjective phenomena, or what C. R. Stones (1985) called "natural meaning units." Forms of introspection, field observation (participant and covert), case studies, life histories, interviews, and content analysis of dreams and art forms may qualify, as long as what is recorded is a narrative rather than numbers. Case studies are perhaps the prototype of qualitative research (Platt 1992) and may offer the best alternative to statistical techniques which eclipse the uniqueness of individual subjects and instances (Ford 1987, 632).

Some examples of qualitative research are visual rather than verbal. M. Lesy (1973) and G. W. Dowdall and J. Golden (1989) used photographs as data. Some qualitative studies may use many separate bits of seemingly unrelated data (for example, Nathan and Mencken 1977), while others may involve a tightly reasoned central theme substantiated by standardized instruments such as the use of the Rorschach test in E. Fromm and M. Maccoby's (1970) study of social character in a Mexican village. When Tom Peters (1985) argues for "management by wandering about" rather than hiding in one's office and reading/writing reports, he is arguing for a qualitative approach. In religious studies, the attempt to use hermeneutics or exegetics in interpreting a text also could be seen as qualitative (Gerhart and Russell 1987). Reviews of, and guides to, qualitative methodology are provided by A. Strauss and J. Corbin (1990), S. Kvale (1987), P. D. Ashworth and A. J. de Koenig (1986), G. W. Noblit and R. D. Hare (1988).

However it is accomplished, the important thing is that qualitative research give some empathic evocativeness which allows the readers to participate vicariously in the subject's experience. When Jane Goodall (1983) comes to a "gut-level" understanding of David Greybeard, the patriarch of the chimp colony, she has perfected her qualitative approach of naturalistic observation.

But the strength of qualitative research for obtaining richness becomes its weakness for the attainment of precision. First of all, the subjects infuse their subjectivity into the data. The narrative response

produced as subjects talk to the interviewer or psychotherapist, or jot down the day's happenings in a journal, are reflected justifications (not direct experience), defense mechanisms (not feelings), theology (not religion). Indeed, qualitative data are not "facts" in the sense of being precisely measured and objective: they are at most private, interpersonal, or social constructions of the subjects (Bellaby 1991).

The personality of the researcher also penetrates every phase of the qualitative research process. All qualitative research necessarily depends on the insight of the researcher (Kvale 1983). Indeed, although H. S. Becker (1958) expressed the hope that participant observation could become a more scientific and less "artistic" endeavor, the artistic element may be inherent in qualitative research, for *these methods do not discover something external as much as they create something intersubjectively and then project it onto the externals*. An example of this would be oral histories and life histories with the elderly, which C. Ikels, J. Keith, and C. L. Fry (1988) referred to as "collaborative efforts of the researcher and the teller." This is not necessarily a criticism, for Alexis de Tocqueville, Thorstein Veblen, and William Draham Sumner produced books in which their creativeness of imagination involved a profundity of insight (Redfield 1948).

The danger comes in the possibility of blurring data (what the researcher actually observes) and inference (how the researcher interprets those data, according to some theoretical perspective). Unfortunately, theory determines not only how we interpret the facts, but which facts we select for interpretation. *The problem is that the qualitative researcher who has already become committed to a given theory, can, perhaps unconsciously, go looking only for those data which fit that theory* (Merton 1957; Van Maanen 1982). L. Riebel (1979) referred to this as the problem of the "self-sealing doctrine": data which do not fit the theory must be discarded because, since the theory is obviously true, those data which do not fit must be inaccurate.

Certainly, we see this problem in the excesses of classical psychoanalysis (Kvale 1985). Once Sigmund Freud was convinced of the universality of the Oedipus complex, he looked for it in every patient, whether they admitted it or not. If Little Hans was afraid of horses, it must be because he had displaced the fear of castration anxiety from his father onto that animal. If Dora claimed to have been propositioned by Herr K, her "memory" must have been a mere fantasy of her unresolved Electra complex. If "Wolfman" had an ambiguous dream about wolves in a walnut tree outside of his bedroom window, it must have been because he witnessed his parents in copulation. Anyone who failed to agree with Freud's interpretation of these cases (1966) either lacked the special expertise of the initiated or

else was repressing the obvious because of personal unresolved complexes.

Another example of the excess of qualitative research was Margaret Mead's study of the Samoans. She described them as free of sexual guilt and inhibition, inhabitants of a "free love" paradise. Other investigators have found that the Samoans have taboos, highly value female virginity, are prone to jealousy, and have a high incidence of rape and homicide. Derek Freeman (1983) contended that Mead's deficiencies were both conceptual and methodological. She herself was rebelling against puritan and Victorian sexual ethics and had a hidden agenda when she went to Samoa. Her interviews did not discover the Samoan attitude as much as they served as a vehicle for her to "find" the human society she needed to make her case.

This problem of confusion of theory with data cannot be eliminated from qualitative research, but these problems can be identified, controlled, and minimized. E. B. Titchener (1909), as an early advocate of the use of the qualitative research technique of introspection in psychology, advised researchers to face facts as they come and not try to fit them into a preconceived theory. Nearly six decades later, sociologists B. G. Glaser and A. L. Strauss (1967) explained their qualitative technique by emphasizing that it should not necessarily substantiate a preestablished theory but should lead to a new theory arising from, and truly grounded within, the data.

In order to accomplish what both Titchener and Glaser and Strauss recommended, it is necessary for qualitative researchers to have what has been called reflectiveness (Glaser and Strauss 1965), disciplined intuition (Bruyn 1966), objectiveness (Bittner 1973), and disciplined subjectivity (Erikson 1975). Anthropologist Florence Kluckhorn (1940) argued that such qualitative approaches could even increase objectivity if the investigators were forced by such internal reflection to analyze their own biases. Historians Jacques Barzun and H. F. Graff described objectivity as something to be achieved "by testing in all ways possible one's subjective impressions" (1957, 146).

More recently, sociologists involved in participant observation and evaluation research have suggested more specific safeguards for the inherent vulnerabilities of qualitative methods. G. J. McCall (1969) suggested several ways for checking the data's internal and external consistency. H. Schwartz and J. Jacobs (1979) give guidelines for coding, sampling, and analysis so that there is a constant feedback which prevents abstraction from dominating the facts. M. C. Patton (1980) suggested several ways for keeping things in context in qualitative evaluation studies. J. Katz (1982) enumerated

the four *R*'s of qualitative methodology: representativeness, reactivity, reliability, and replicability.

While it is easy to point to examples of excesses in the use of qualitative methodology, and hard to achieve objectivity, these do not constitute a compelling argument: qualitative research techniques are both possible and necessary for a full description of human phenomena, especially religious experience (Van Kaam 1987, 91).

QUANTITATIVE METHODS: ESSENTIAL BUT INADEQUATE

There are two forms of quantitative research: the experiment and the correlational study. Experiments can be of the before-and-after variety ("within subjects") or use a control group for comparison ("between subjects"). Correlational studies can involve data from field enumerations (for example, counting how many people come out of a church), archival sources (for example, the census, patient records) or questionnaires (in which the data are directly provided by the subjects). Both the correlational study and the experiment require that the dependent variables carefully be measured (by categories, ranks, or scores) and that independent variables be measured, controlled, or randomized. (The experiment has the added requirement that an independent variable be manipulated, thus giving more decisive evidence on causal relations.)

Experiments and correlational studies are quantitative in two senses. The first involves the use of descriptive statistics (such as percentages, means, standard deviations). The true "quantoids" are the skeptics who distrust all "gut-level" judgments, including their own. When quantoids hear a psychoanalyst claim, "My patient is getting better," they will demand objective measures, such as the Hamilton Rating Scale for Depression, which is filled out by an observer. However, if the observer starts off with the conviction that the patient is depressed, then that observer will be more likely to identify depressive symptoms, thus giving the patient a higher HRS-D depression score than that which would be given by an examiner who was operating under the assumption that the patient was not depressed. The use of a quantifiable measure may lessen the observer's bias, but it also disguises such bias and definitely does not eliminate it.

A second factor which makes both experiments and correlational studies quantitative is that they involve the use of inferential statistics and permit the testing of the null hypothesis (namely, the explanation that the observed results could be attributed to pure chance). While qualitative researchers define "significance" in terms of

the relationship of the data with human values, quantitative researchers understand “significance” in its statistical sense (.05 = fair, .01 = good, .001 = excellent): the level of confidence that these data are *not* explicable by random variation. Only then, according to the quantoid catechism, are we permitted to speculate about some causal relationship without committing methodological sin.

Numerous criticisms are possible of these quantitative methodologies. Measurement is never perfectly precise, but researchers have developed procedures for assuring some degree of reliability (that is, consistency of measurement) and validity (namely, measuring what we are supposed to measure). Control, randomization, and manipulation of variables are always flawed, but generally the flaws can be measured and accounted for. In the main, quantitative researchers have done a superior job (compared with their qualitative counterparts) in developing the self-discipline of their method to such a degree that they are unlikely to make many false claims.

That strength is the central weakness: quantitative methodology is so disciplined (nay, rigid!) that it throws out a lot of babies (viable infant ideas) along with the bathwater of inconclusive research. The use of descriptive statistics prevents us from distorting our sense of the physical magnitude of a phenomenon, but it offers no guarantee that the metaphysical magnitude of a phenomenon will be properly appreciated. The use of inferential statistics prevents us from distorting the underlying causal relations between variables, but it does not tell us about inter- and intrasubjective meanings.

While qualitative researchers in “human science” have been criticized for failing to live up to the noun (science), quantitative researchers have been criticized for failing to live up to the adjective (human). Do we best understand the American people by looking at the census reports or by observing a narrative of their actions, values, and beliefs? In the 1920s, social critics G. J. Nathan and H. L. Mencken (1977) provided the latter form of description and derided the quantitative methods for leading to “a trackless maze of meaningless tables and diagrams” and in the long run to “turgidity and flatulence” (p. 102). The problem is that *quantitative research focuses on what is most measurable, not on what is most relevant*. This same theme was echoed in the 1930s by anthropologist B. Malinowski (1968) and sociologist F. Znaniecki (1968), in the 1940s by anthropologist Florence Kluckhohn (1940) and interdisciplinarian J. Dollard (1949), and in the 1950s by economist Friedrich Hayek (1952) and sociologists Pietrim Sorokin (1956), J. E. McKeon (1958), and C. Wright Mills (1959).

R. Sennett and J. Cobb (1972) pointed to the example of surveying

public opinion about the Vietnam War. The pollsters had questions such as "Do you approve of the way that the president is handling the war?" or "Do you think that we should escalate the war? de-escalate? or continue on at the same level?" These permitted quantifiable answers in the form of percentages. Lyndon Johnson could not figure out why the percentage of Americans approving of the way he handled the war gradually decreased from 1965 until his exit from office. After all, he had made a sincere effort to follow the polls and adjust his policy accordingly. Perhaps the problem was in the phrasing of the questions. A qualitative approach—either listening to back-fence conversations or an open-ended question ("What should we do in Vietnam?")—would have provided a different answer, probably something like "Get in there and win that war, or else get out, do one or the other, but do it quick." The president did neither, and when he moved a little closer to the "hawks," many of those who had supported him went over to the "doves," and when he called a bombing moratorium to win them back, he only lost more "hawks." The above example is not used to support the contention that Johnson had the wrong Vietnam policy, or that the "man in the street" had a better one, but only to demonstrate that the quantitative research that President Johnson relied upon was incapable of adequately describing the complexity of American opinion on that issue.

It is that very complexity of human phenomena that renders the quantitative technique impotent for their understanding. Before the quantoid can measure variables and calculate their interaction, he or she must break up the unified human perceptual field into distinct and separate variables (for example, background factors, circumstances, stimuli, and responses), and this operation will be guided by what is most measurable, not by what is most relevant.

SYNTHESIS (OR AT LEAST COEXISTENCE) OF METHODS

The present separation between the quantitative and qualitative researchers has been exacerbated by the fact that they tend to study different topics, have different goals, and use different terms (which they readily misinterpret). Nevertheless, I predict (or at least I prescribe and hope for) an acceptance of both qualitative and quantitative approaches within all branches of the social sciences, and perhaps eventually a synthesis. Both tools are useful, and they can coexist (Sammers 1957; Glaser and Strauss 1967; Fales 1982). M. Trow (1958) likened them to the *scalpel* (the precision of the quantitative) and *forceps* (the power of the qualitative to bring forth something new): the skilled surgeon needs both instruments. If the path

of science is learning through observation of the created world, then two eyes are better than one, especially when one eye's view is partially obscured by the obsession with operational meanings and the other's is vulnerable to hallucinations engendered by ideological commitments.

How could the coexistence take place? One approach would be a salad bowl of separate, but mutually respected, research projects. Sociologist M. Zelditch (1961) pointed out that different research techniques are appropriate in different places: samples and enumerations are best for providing frequency distributions, interviewing is best for getting group norms and statuses, participant observation is best for looking at incidents and rituals. Perhaps the *qualitative techniques are better at studying the process and the quantitative forms are better with the outcomes*: let psychoanalysts describe the course of therapy in their fifty-page narrative case studies; let the psychometricians devise ways of measuring how improved the patient is.

May I suggest an even more integrative synthesis? *Let both qualitative and quantitative approaches proceed on the same topic, in separate phases, with each correcting for the blind spots of the other.* The proper role of qualitative research is to be exploratory (suggest issues), illustrative (fill out the description), and/or explanatory (tell us *why* the correlation exists) (Campbell, Daft, and Hulin 1982). The role of quantitative research is more limited: to verify that a specific state of affairs cannot be dismissed as the result of pure chance. Initial qualitative research (such as case studies and interviews) is used to explore the field, to suggest hypotheses. The quantitative phase uses surveys or experiments to test those hypotheses. Then we must again call on new qualitative research to explain the results. Of course, these explanations are tentative and not verified. Indeed, they can be considered new hypotheses, the first step in the next research cycle.

The question is not which method is superior: qualitative or quantitative. That is like asking which is more important for nutrition: vitamins or protein. The solution does not lie in trying to get the right answer to the wrong question, but in a commitment to a balanced diet. *The solution for social science research is a commitment to use both quantitative and qualitative methods*, and the decision about which method to employ in a given situation depends largely on our purposes, our expertise, our resources, and the phase of the research cycle. In order to accomplish this, graduate students must be trained to be bilingual (familiar with the language of both quantitative and qualitative methods) and also bicultural (appreciative of the values of both qualitative and quantitative researchers).

IS THE CASE OF RELIGIOUS STUDIES UNIQUE?

Every discipline and field of study has some claim to uniqueness. Mystic experience certainly gives religion a special claim on the richness extreme of the spectrum of the description of human experience. Scripture certainly contains metaphor and narrative. However, the lack of precision in most Scripture necessitates the development of theology, which categorizes the proscribed from the prescribed and enumerates the commandments. The debates about the appropriateness of qualitative and/or quantitative methodology have persisted in religious studies (Segal 1990; Caton 1986; Schlegel 1982).

Like other scholarly disciplines, it has developed complex specializations. Religion can be broken down into its nominal forms (such as Eastern versus Western, Christian versus non-Christian, Catholic versus non-Catholic), or epochs (for example, medieval, twentieth century), or according to its various manifestations of experience (such as conversion, prayer), adherence (for example, church attendance), or beliefs (such as moral, theological, cosmological, eschatological). These topical, as well as methodological, interests of the scholar determine whether quantitative or qualitative approaches will be used.

The key to appropriate qualitative research in religious studies is the appreciation of the context of the persons studied, not the context of the person making the study. Whenever this maxim is forgotten, we see reductionism of the worst kind. Freud's (1966) lack of empathy for religion can be seen most clearly in *Civilization and Its Discontents* and *Future of an Illusion*. He confessed his inability to discover the "oceanic" feeling within himself, and although he recognized the utility of religion in controlling the instincts of sex and aggression, he longed for the day when science (namely, psychoanalysis) would take over that function from religion. Some of the followers of Freud have been even more extreme. Theodore Schroeder, in his analysis of the genesis of Mormonism, concluded, "All religion in its beginning is a mere misinterpretation of sexual ecstasy" (1913, 146).

Starting from a psychoanalytic perspective does not necessarily preclude good qualitative research in religious studies. Consider the studies of Luther and Gandhi done by Erik Erikson (1958 and 1967). Sensitivity to a different historical epoch or culture gave Erikson the perspective he needed to overcome his psychoanalytic roots. Even a neurological evolutionary starting point does not predetermine an antireligious conclusion. Richard Maurice Bucke (1901), the director of an asylum, studied the lives of more than two dozen religious figures in history and came up with an extremely optimistic, proreligious view.

While a qualitative approach without empathy leads to reductionism, one without sufficient distance leads to polemics. The discipline of religious studies, like political science, has a content area rich with human values, and there is ever the temptation to subordinate one's scholarship to the service of one's own values. There are numerous examples of social pseudo-science perpetrated by overly zealous adherents of contemporary religions. Many a Mormon missionary in Central America has played amateur archaeologist, finding evidence confirming that the Mayas came from Israel or Egypt. (Surely, the Mormons do not go on their missions to find evidence that would question the authenticity of the very Scripture that they are trying to promote.) What we see is preselection of facts which fit the theories.

The quantitative approach is epitomized by pollsters (for example, Gallup and Castelli 1989). They have found that over 90 percent of Americans claim a belief in God, and a religious preference, but only two-thirds are officially a member of an organized body, and only four in ten attended services last week. Such data would not unravel the ultimate relevance of religion for the adherent (in the way that an interview or life history could), but such numbers could confirm or deny claims engendered by the qualitative methods. For example, it is perennially proclaimed that we are seeing a revival of religion in this country. Data such as Gallup's allow us to test such a statement. If there is an upsurge in religion, we should expect to see it in terms of increasing church membership or attendance. Gallup's figures reveal a half-century of stability with minor fluctuations: no great trend or recent jump.

Another example of how claims could be tested comes from the psychiatric studies of cult members. It frequently is claimed that cults go after unstable individuals with weak social ties, then use brain-washing techniques to transform members into zombies. Most of the evidence for such claims comes from isolated case studies of individuals who formerly were cult members and later sought psychiatric treatment. Are such members typical? Are their problems the result of their association with the cult? Or were they drawn to the cult because of their problems? Only large-sample, quantitative techniques can help to answer these questions.

The danger of the quantitative approach is that we can reduce religion to just another slice out of the *pie* of life. This week Gallup asks how many people go to church; next week, how many smoke; next week, how many use seatbelts; next week, how many support the president on something. A qualitative approach is a necessary supplement and can give us an *onion* model: religion is at the core of life and gives contour to all the surrounding layers.

Neither quantitative nor qualitative techniques should attempt to explain away the religious dimension of human experience. Used separately, both methods are extremely limited, with one running the risk of presenting an inaccurate picture and the other being vulnerable to missing the most important aspects of the picture. When used in combination these two hands of social science will not discard religion in the trash heap of history as Sigmund Freud and Karl Marx predicted.

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