

***Quantitative versus Qualitative Methods: Understanding Why Quantitative Methods are
Predominant in Criminology and Criminal Justice***

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Abstract

The development of knowledge is important for criminology and criminal justice. Two predominant types of methods are available for criminologists' to use--quantitative and qualitative methods. A debate is presently taking place in the literature as to which of these methods is the proper method to provide knowledge in criminology and criminal justice. The present study outlines the key issues for both methods and suggests that a criminologist' research questions and hypotheses should be used to determine the proper method.

Quantitative versus Qualitative Methods: Understanding the Methods in Criminology

Research is the discovery of information that is either new or replicates previous findings. Research becomes scientific when it follows specific methodologies that others may be able to replicate to arrive at similar results. Two types of methodologies are predominant in criminology and criminal justice that provide this sense of science--quantitative and qualitative methods. However, Tewksbury, DeMichele, and Miller (2005) have shown that quantitative methods are used more often than qualitative methods in criminology and criminal justice. Importantly, quantitative and qualitative methods differ in several ways.

The present study contributes to the literature by presenting a theoretical treatment of quantitative and qualitative research. The study begins by presenting quantitative and qualitative

methods. Then, the importance of sampling to both methodologies comes. This is followed by discussions of the primary methodologies that are used in either approach. The data that are presented in each approach are presented. Then, the issues surrounding reliability of both methods are presented. This is followed by the discussion.

Quantitative and Qualitative Research

Quantitative methods are based on the premise of empiricism and positivism (Rossi, 1994; Smith, 1983). These methods are rooted in the scientific method that is derived from the physical and natural sciences. Generally, these methods allow criminologists to be objective, formal, and systematic that arrives at a series of numbers to quantify phenomena (Creswell, 1994). That is, criminologists measure phenomena objectively affording them the opportunity to remain distant and be independent of the phenomena that is being researched.

This is consistent with the role of values in research. Using quantitative methods, research is able to be devoid of values. Values are removed from the research process because statements in written reports and instruments are removed (Babbie, 2002). Criminologists argue the “facts” of the study and not the values of the study. Criminologists that use quantitative methods write their reports in very specific ways. First, the reports are written impersonally. This allows them to keep their distance and to make sure that their values are not interwoven into their research. Second, their reports are written in a formal tone with an emphasis on the connections, comparisons, and group differences between the concepts that are being studied. For instance, Higgins (2007) presented a report that examined the psychometrics of a specific self-control scale. Importantly, this paper was written in a very formal tone that was removed of

values, but Higgins relied on the numbers to provide evidence to support or refute the hypotheses of the study.

The issues of concepts in quantitative research are important. Criminologists use theory to define their concepts and the connections between them. A theory is a set of interrelated or intercorrelated concepts and propositions that are designed to explain a behavior. In criminology, the behavior is typically criminal or deviant. Agnew (1995) argued that social learning, self-control, and strain theories were the leading general crime theories in criminology and criminal justice. Quantitative methods allow criminologists to be deductive in stating their hypotheses and research questions *a priori* from established theory, allowing criminologists to test theories and examine relationships for cause and effects. For example, Agnew (1992) argued that three forms of strain generate an emotion that prepares the individual to cope with the strain. In this example, three hypotheses are presented. The first is a direct hypothesis from the three forms of strain generating an emotion. The second is a hypothesis that emotion prepares an individual to cope. The third is implied and suggests that strain has an indirect connection with coping through emotion that may be conditioned by: criminal histories, peer association, or morality.

Qualitative methods are guided by ideas, hunches, or perspectives (Creswell, 1994; Rossi, 1994). Criminologists that use qualitative methods are usually trying to develop theories rather than test them. In addition, the intention is to use the language of the subject to provide the understanding and not the quantity of the subjects. In other words, qualitative methods are subject (i.e., study respondent) driven and not theory driven. This allows criminologists to describe phenomena in a more humanistic and phenomenological view. Using an interview format, the qualitative researcher would focus on coping mechanisms and then proceed

backwards as to understand why the individual coped in a certain way. This is an example of subject generated research rather than theory driven research. The reason why the individual copes in this manner is induced and a theory is created for understanding. Qualitative criminologists will argue that their lack of dominance in criminology and criminal justice is due to the belief that the development of theory is secondary or invaluable. Quantitative criminologists recognize that falsifying the theories are far more important. To be clear, a theory derived from 10 to 15 research subjects needs to be examined across several thousand individuals or groups before it may be reified. This has been the case with the leading crime theories (i.e., social learning theory, self-control theory, and General Strain theory) (Agnew, 1995). It should be noted that these theories were not developed using qualitative methods, perhaps this is the reason why they have withstood multiple rigorous quantitative tests that transcend disciplines, races, ethnicities, and countries.

Qualitative methods allow criminologists to become part of the study by shortening the distance between him or herself and the research subject. Thus, they are typically the instrument allowing them to interject his or her values into the research (Babbie, 2002). This may occur in participant observation research where the researcher infiltrates a setting and participates in the activity so that they may gain access and acceptability among subjects. In this form of research, the criminologist really is the instrument and they are not able to take clear and concise notes during the interaction leaving a substantial amount of the information to memory. Redmon (2003) presents an example of this process. He collected interview data from individuals during Mardi Gras; however, Redmon is unclear about how the interview data were recorded. This leaves one to believe that he relied on his memory. If the interviews lasted between 10 minutes and 2 hours to complete the interview how could he possibly recall of the details from the

interviews. While this is not meant to diminish the contribution that this work has made in our field, it does illuminate the potential problems with this form of research. One of the strengths of quantitative research is the transparency that comes from the methods that are used to arrive at the findings.

The intention of qualitative research is not standardized and may change during the middle of study. This occurs in content analysis and interview data. Interview data provides an example of this issue. Maxwell (1996) argued that when performing interviews that the researcher should use “probing” questions to gain additional information about context. The problem with the “probing” questions is that they are often unscripted. This means that different subjects may get different versions of the “probing” questions that may provide different information. This is problematic when one considers that there is likely to not be an a priori presentation of the research problem and the categories that are used to capture them.

Quantitative methods attempt to add to the universal knowledge of society (Blalock, 1979). The use of experiments, surveys, and quasi-experiments has allowed criminologists to gain valuable insights into the criminal justice system and criminals. In criminology and criminal justice, these methods have been used to produce “real answers” from “hard data”. Hard data in this instance is the use of numbers. Tewksbury et al. (2005) showed that “hard data” is the preferred method of criminologists. Qualitative methods have are generally not as good at giving direct answers, but are good at developing more questions. This occurs because qualitative methods are consistently using “soft data”. Soft data in this instance is language (i.e., body and words) to represent phenomena. Criminologists must consider sampling regardless of the method.

Sampling

Using either quantitative or qualitative methods does not absolve criminologists from the complexity of sampling. Regardless of the methodology being used, all of the samples have to be representative. To ensure that this takes place, quantitative methods require criminologists to use random sampling. However, when criminologists are conducting experiments, they are required to use random assignment (Babbie, 2002). Further, when criminologists are conducting quasi-experiments, they are required to use some form of matching technique.

When using quantitative methods, criminologists are typically guided by the central limits theorem to develop their samples. This theorem posits that when a sampling distribution begins to grow it will begin to appear like a normal distribution (Blalock, 1979). This allows criminologists to use their quantitative methods to generalize their results from their sample to the population. Unfortunately, criminologists are not always able to achieve a random sample, and this reduces the veracity that they can generalize their sample to the population. However, criminologists consistently do generalize their nonrandom sample results to their populations when they have large samples that appear large enough to satisfy the central limits theorem via the law of large numbers.

Qualitative methods have difficulty in the area of sampling (Berg, 2007). They may use the same strategies as quantitative researchers (i.e., random sampling: simple, systematic, stratified, or cluster), but qualitative researchers would have to contend with large samples that may not be specific to their research “hunch”. Qualitative researchers generally choose their samples from individuals or entities that are germane to the “hunch” that they have that is the impetus for the research. Generally, qualitative researchers have to contend with non-random samples that include the following: convenience samples (i.e., available subjects), purposive

sampling (i.e., researcher uses their special knowledge and expertise about the group to select the subjects), snowball sampling (i.e., the identification of several people with relevant characteristics, performing the qualitative assessment, and then asking them for names of others), and quota samples (i.e., researcher uses a matrix and then some non-random characteristic to fill the matrix).

While some that use quantitative methods use these types of samples, the issue is that these sampling techniques in qualitative researcher typically yield very small samples. This has some repercussions. First, the small sample places a premium on the selective nature of the sample. That is, because the sample is small, criminologists have to be very selective and direct in the individuals or entities that they select to study. This means that the sample needs to have direct importance for the criminologist's research questions. That is, a qualitative researcher that is interested in the lives of cross-dressing prostitutes, but only samples prostitutes from Terre Haute, Indiana. This reduces the veracity that qualitative researchers may provide with their theories that they covet.

Second, the small sample creates an opportunity for criminologists to influence the results. This means that the intrusion into the environment may have caused changes that are being processed in the results (Maxwell, 1996). In addition, the criminologists own perceptions may shape the results given the sample is small. That is, the results from the small sample are merely a reflection of the perceptions of the criminologist. Referring to the prostitution example, there may only be fifteen cross-dressing prostitutes in Terre Haute. Therefore, a criminologist that interviews five of these fifteen may not capture the full impression of what life is like in this capacity.

Third, the results from small qualitative studies are not generalizable. This means that the “deep” and “rich” understanding that is coveted by criminologists that use qualitative methods only applies to those or the entities that were in the study. To be clear, because the criminologist is in the natural environment, the intensity of the research is increased and reduces the opportunity to collect a large sample negating an opportunity to satisfy the central limits theorem. For instance, the researcher that was interested in cross-dressing prostitution in Terre Haute, Indiana that only captured five of the fifteen prostitutes may not be able to generalize their results beyond these five prostitutes. That is, the lives of cross-dressing prostitutes in New York City may be different from those in Terre Haute, Indiana.

Fourth, criminologists that use qualitative methods have to realize that their results will be low in reliability (i.e., consistent over time). This means that their results will be less likely be replicable because of the small sample size (Maxwell, 1996). For instance, if two criminologists are studying the same phenomena using the same qualitative methods and different small samples, a strong likelihood exists that the two criminologists will arrive at different results. This may not be a function of the criminologists, but it may be a function of the small specialized samples that they are using. Criminologists may have issues that are consistent with methodology. In other words, the differences between the lives of cross-dressing prostitutes in Terre Haute and New York City illuminate that the issues with reliability of the results from qualitative research may not be in the criminologist, but the issues with reliability may be from the small sample.

Methodology

Quantitative and qualitative research requires different methods to acquire data. That is, to address the hypotheses that come from theory, a specialized set of methods are required. A few of these methods are: surveys, experiments, and quasi-experiments. Typically, to address the relationship, explanatory, and descriptive hypotheses, surveys are an important quantitative method.

A survey is a questionnaire that is designed to capture information about attitudes, behaviors, and beliefs (Babbie, 2002). Surveys may include statements or questions to illicit this information. To that end, the answer choices of a survey may either be open-ended or close-ended. However, the questions or items may not be “double-barreled”. That is, the questions or items may only address one issue at a time. Surveys allow for large distribution that makes large samples feasible. Surveys are flexible in that they allow several different issues to be captured in the same document. Surveys allow for standardized information to capture concepts.

Experiments are generally used for explaining causal relationships (Campbell & Stanley, 1966; Cook & Campbell, 1979). Experiments allow researchers to use well defined concepts and topics to explain a causal connection between concepts. An experiment requires a pretest, experimental stimulus, and a posttest. The pretest allows researchers to gain baseline information before an experimental stimulus. The experimental stimulus is the concept that allows researchers to determine what causes a reaction or change from the baseline. The posttest is used to determine if the experimental stimulus created a change from the baseline. At a minimum, experiments require the use of experimental and control groups. Experimental groups are those that are subjected to stimulus that may create a change. Control groups are not given the stimulus, but when they are given the stimulus they are given a placebo--a “fake” form of the

stimulus. The determination of how individuals are placed into control and experimental groups occurs through random assignment. Experiments have the advantage because they are controlled and isolated. Experiments are often replicable.

Quasi-experiments offer the same sort of benefits as experiments (Campbell & Stanley, 1966; Cook & Campbell, 1979). Quasi-experiments follow the same form as experiments, but the chief difference is that quasi-experiments do not require random assignment. Typically, a quasi-experiment requires some form of matching. When controlled properly, quasi-experiments offer the same type of benefits. That is, they allow researchers to explain the differences in groups. The importance of experiments and quasi-experiments has been recognized by criminology and criminal justice that a journal--Journal of Experimental Criminology--has been dedicated to these types of tests and studies.

Qualitative researchers rely on methods use a plethora of methodologies (Berg, 2007; Rubin & Rubin, 1995). These methodologies include: interviews, content analyses, and observation. Interviews are generally an interaction that may take place face-to-face, over the phone, or through cyberspace. An interview can take place to uncover information about a short-period of life or it may take place in order to uncover information about an individual's life. Content analyses are typically analyses that allow researchers to understand the importance of a topic given its presence in certain outlets that include the media. Content analyses may be just relevant counts of a specific form of information. The researcher would then infer about the importance given that it only occurs a reasonable number of times. Observations may take place in a few ways. The observer may participate in the activity or the observer may not participate. The researcher would then try to make sense of the information that they captured.

Data

The data that criminologists capture and use for analysis are different depending on the method--quantitative or qualitative. Criminologists that employ quantitative methods capture and use numbers. The use of numbers is important because it shows that a scientific system has been followed (Babbie, 2002). The arrival of these numbers is important because it places this sort of research akin to the physical and natural sciences. Thus, the use of numbers attempts to provide criminologists with a sense of legitimacy among other scientists.

Qualitative methods rely on "soft data". Soft data are words, body movements, or actions. For criminologists that use qualitative methods, these are rich data that allow for a picture to be drawn or painted about the research subject. Unfortunately, the purpose of criminologists' qualitative research studies is not often very clear. This leaves them in a position where they are overwhelmed by the data that they collect. To that end, these criminologists are often confused by the inability to limit the scope of their study. For instance, a criminologist using qualitative interviews of ten people may have several hours of information from these individuals. When these tapes are transcribed--transcription is a process of typing the audio information for analysis--may be faced with twenty-five to one hundred pages of information from one of these ten people. When the criminologist attempts to analyze the information, they do not have the guidance from a firm research focus to guide them in making sense of their data. Therefore, the criminologist becomes overwhelmed with the multiple themes and issues that may be discovered in their data. Even after the criminologist is able to make sense of the data, they have to be able to cogently present these data. For example, Pettitway's (1996) *Honey, Honey, Miss Thang Being Black, Gay, and on the Streets* is informative, but difficult to consume because the transcripts are literally interjected into the text.

Reliability

Criminologists have to be concerned with issues of reliability. Reliability is the consistency of a result over time (Babbie, 2002). Criminologists that use quantitative methods are more likely to generate results that are consistent over time--reliable. The reliability is a result of the controlled environment and the standardization that may arise from standardization in testing. For example, a survey that is administered to a random sample of 200 subjects is likely to yield reliable results when another criminologist replicates the study.

Criminologists that use qualitative methods have to contend with this issue. Reliability is a problem because criminologists are not able to standardize their methods (i.e., instruments) across multiple groups. Thus, the instrument in qualitative research is often the criminologist that is performing the observations or the interviews (Strauss, 1987). This creates an opportunity for the assessment to be different for each individual or entity that is being examined. That is, if two criminologists are using qualitative methods, specifically participant observation, they may arrive at different views of the same situation. Further, two criminologists reviewing interview transcripts may arrive at different views of the same transcripts.

Discussion

When criminologists consider quantitative versus qualitative methods, they need to consider the strengths and weaknesses of both types of methods. This dilemma has generated the debate over the superiority of either approach, or the type of method that should be adopted by criminologists. Criminology and criminal justice has a strong quantitative tradition (Tewksbury et al., 2005). However, the author resists the opportunity to promote one methodology over the

other because neither methodology has the ability to address all the questions that are present in criminology and criminal justice.

This debate may be advantageous for criminology and criminal justice. The debate has the ability to force criminologists to acknowledge and understand the controversies that surround each methodology. Understanding the controversies surrounding the methods will force criminologists to have an in-depth knowledge of the methodologies and not to be restricted to the physical sciences. The preference of any specific methodology has implications for ideology that go beyond that of technical strategy. That is, the choice of a method has specific implications to the types of information that are needed; the methods that are used; and the results that may be presented. Therefore, the choice of the methodology that is used should be guided by the research questions and hypotheses that are being examined or developed. In criminology, the typical focus is on testing theories. Even when researchers are evaluating criminal justice policy, they often use theory as a guide suggesting a quantitative method. Overall, the debate allows criminologists to create and develop better theories that will advance criminology and criminal justice.

The debate also has the ability to illuminate quantitative research as producing more generalizable findings than qualitative research. The generalizable findings from qualitative research allow criminologists to make greater impacts on the criminological world than if they relied solely on qualitative methods. That is, one reason why quantitative methods are dominant in criminology and criminal justice research is due to the greater opportunity to generalize the results.

Another reason that quantitative research is dominant is that anyone may be able to perform them. This means that there is a greater opportunity for others to arrive at similar results

that are not stifled by special niches to enter certain settings. This allows for more science to dictate the direction of criminology and criminal justice rather than “hunches” produced from qualitative research.

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