This paper discusses the advantages of using both qualitative and quantitative methodological procedures in investigating attitudinal and perception changes in the population studied. This project is part of a 4-year longitudinal study involving 24 dental students and 29 faculty members of a new southern dental school. The paper reviews some of the literature on this socioanthropological approach; outlines the procedures used for this study, which included questionnaires, interviews, document analysis, field observation, and field diaries -- primarily qualitative methods of inquiry; and some of the limitations of this approach. The methodology was used to ascertain changes in student perception of the role of the dentist and to study the motives of students for entering the field of dentistry. (AP)
THE PROFESSIONALIZATION OF DENTAL STUDENTS: THE APPLICATION OF SOCIO-ANTHROPOLOGICAL METHODOLOGY*

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The setting for the subject of this paper is a recently established Southern dental school which accepted its first class of dental students in the Fall of 1969. The first year of this four-year longitudinal project included all of the twenty-four dental students and all of the twenty-nine faculty members who had either an active role in shaping school policy or contact with the students in some way. Data was collected by questionnaires, interviews, document analysis, field observation, and field diaries—the major emphasis being on the qualitative methods of inquiry.

The utilization of both qualitative and quantitative methodological procedures in this investigation served to alleviate certain weaknesses inherent in employing a single type of approach. The benefits derived from this perspective and the implications of the approach for the development and verification of theory will be the subject of this paper.

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In approaching the task of how to study the initiation of a new dental school, the problems of the development of an adequate theoretical approach and a methodology to evaluate the propositions of the theory emerged. To meet the first of these problems a theoretical orientation was adopted that combined the assumptions of several authors.

Bensman and Vidich have suggested the idea that the relationship between theory and research should be "unsystematic." (Bensman and Vidich, 1963:162-172) By "unsystematic" the authors refer to the condition of the researcher assuming several theoretical perspectives simultaneously and reviewing his data from a number of possible frameworks. This "unsystematic" approach serves to sensitize the researcher to a number of perspectives in viewing his problem area and thus aids in facilitating more imaginative insights.

This approach is shared and expanded upon by Glaser and Strauss in their exposition of "grounded theory". (Glaser and Strauss, 1967) "Grounded theory" stresses the development and verification of propositions through data systematically obtained from social research. (Glaser and Strauss, 1967) In brief, the position of "grounded theory" assumes "...that most hypotheses and concepts not only come from data but are systematically worked out in relation to the data during the course of the research." (Glaser and Strauss 1967:6) Thus the authors imply that the research process itself is an important source in the development and verification of theory.

For example, in the dental student study a partial content analysis was performed on various documents such as the subcommittee reports on
student affairs, the proceedings of faculty meetings, and the minutes of the executive council meetings—all of which covered a two-year time span. By analyzing these documents we were able to reconstruct parts of the past formal regulatory framework that the faculty operated within and to partially put together the current formal value climate of the faculty and administration. When this was coupled with our field observations of the faculty in actual interaction settings with the students, we gained a valuable guideline in arriving at propositions regarding the overt and covert patterns of faculty-student relationships.

Thus these types of qualitative data when employed systematically can serve as a continual source for the developing and directing of theory throughout the research process.

What is important to note here, with regards to the study of dental students, is the emphasis placed by both "unsystematic" and "grounded" theory on qualitative data as a major source of information in the research process. Heretofore the issue of qualitative data versus quantitative data has been resolved by many sociologists with quantitative data clearly being the victor. Qualitative data has at best been relegated to utilization in exploratory studies, and even then to be replaced after the initial stage of inquiry by quantitative methods. It has largely been the anthropologist who has actively maintained qualitative field methods as a viable research endeavor.

It is the position of this paper that the conflict over the use of qualitative data versus quantitative data is meaningless insofar as it is centered around the debate over which type of data is superior. The questions
should be framed in terms of the purposes to be served by the types of data and under what conditions one type of data is preferable over another. The lack of the proper utilization of qualitative data can be attributed in part to the failure of many researchers to acknowledge this perspective and subsequently recognize the place of qualitative methods in the research process.

Blumer and others have noted that all too often the sociologist does not have firsthand knowledge of the topic under study. (Blumer, 1967; also see Glaser and Strauss, 1967; Stein and Vidich, 1963; and Garfinkei, 1967) Much of the time the researcher is an outsider and lacks the full acquaintance necessary for precise theoretical formulations and hypotheses. However, the norms of the system of science to which sociologists adhere have typically required that the testing of precise hypotheses be rigorously carried out. Since the system has also evaluated quantitative data as more rigorous than qualitative data, and hence more desirable, then the sociologist seeks out quantitative data to meet his needs. All this occurs despite the lack of accurate knowledge of the workings of the empirical reality under study.

Blumer suggests that often because of the sociologist's position as an outsider in the research setting, artificial images of the empirical world are drawn together from sources other than firsthand experience and substituted for it. (Blumer, 1967:35-36) As a result not only does the investigator impose his speculations on the overall research design, but also such reasoning leads to the untenable position that the data should fit the theory.

It is precisely with reference to this dilemma that qualitative data techniques emerge as most useful. By utilizing qualitative field techniques
the researchers can obtain firsthand images of the research problem and generate a variety of theoretical formulations. In this connection the issue of greater or lesser degrees of precision is not vital since qualitative data, no matter how imprecise, are better substitutes than mere speculations alone. By approaching the area of inquiry from a number of perspectives and by disqualifying those for which the data provide no support, one assumes the position of having the theory fit the data. Also by using "unsystematic" qualitative data as a generating source of concepts, one is able to avoid the pressures to move into irrelevant directions that are encouraged by artificial images. In addition to these functions, the qualitative approach presented here allows for the discovery of the limitations of one's original theories and the discovery of new dimensions of the problem under investigation. (Bensman and Vidich 1963:168)

To illustrate these functions let us again return to the dental student example. In our initial testing and interviewing during the first week of the students' arrival, several measures were administered relating to the students' conceptions of dentistry and of the role of the dentist. In the following weeks we observed an unscheduled change in the curriculum that provided for the students to visit the offices of local dental practitioners over a three-day period. During and following these visits we noted through observation and interviews that the students' conceptions of the role of the dentist and subsequently of the profession were altered from those previously held. Acting upon this information, we developed a brief questionnaire designed to test these assumptions; the results tended to confirm our observations. Although this experience did not constitute a major source of change in student conceptions, it did create an intervening effect. Without this information any changes noted by later testing...
would have failed to properly account for all the dimensions of the problem. Further, if the researcher had limited himself only to quantitative techniques, this unscheduled change in the curriculum and its resultant effects might have gone completely undetected and subsequently might have encouraged a less problematic approach to the socialization process of the dental student. Thus qualitative data need not be relegated to an inferior status but can justly assume the position of being a most valuable asset in the research process.

The thesis of this paper is more than simply the fact that qualitative data should be reinstated as a valuable source of empirical information. More essential to our overall study of the dental student population is the assumption that both qualitative and quantitative data share mutual capacities for imparting information and that a distinction between them exists only insofar as the methodological emphasis is on either verification or generation of theory. In many instances both types of data are useful to some extent for verification and discovery of theory. The employment of unsystematic theory grounded in qualitative and quantitative data has demonstrated in this project that qualitative data tends to have greater value in the generation of theory, whereas quantitative data lends itself more readily to the verification of theory. Nonetheless, quantitative data, as Glaser and Strauss point out, need not be used only for the testing of qualitative information. (Glaser and Strauss, 1967: 185-220) Quantitative data can itself function to generate theory. What is necessary for sociological methodology, especially in exploratory studies such as the dental study presented here, is the recognition that both types of data
can function reciprocally in the mutual verification and generation of theory.

An example of this point is seen in our attempts to study the motives of the students for entering the field of dentistry. In our study of this problem we included in our initial testing a motives index and a series of questions concerning the perceived priorities related to the content of the profession. A preliminary analysis revealed that our dental student population held a higher desire for serving others than samples previously tested. In accordance with this data we noted in later observations a confirmation of this strong service orientation. Discussions with the students' clinic instructors revealed a similar conclusion on their part and an acknowledgement by several instructors that these students were more sensitive to the responsibilities of offering patient care. This was again manifested later in the year by the students' voluntary participation in a health clinic located in a community slum area.

Thus we see an instance where quantitative and qualitative data function mutually to develop and verify theoretical propositions.

Although the combination of qualitative and quantitative data offers many advantages, it also has a number of limitations. Vidich and Bensman have noted four major problems of unsystematic theory, which are applicable to the overall methodological design presented in this paper. (Bensman and Vidich 1963:170-171) First, the consideration of alternative perspectives does not in itself offer a guarantee that all empirical data will be properly accounted for. The mere listing of alternatives is no solution; what is needed is a continuous consciousness of theoretical perspectives with a minimum of
a priori assumptions so that the functional relationships between theories emerge as a product of the research process.

Second, the procedure of fluctuation in considering alternatives is not carried on in a vacuum. Instead, dependence upon contingencies of the actual field work and upon the researcher himself will greatly influence the effectiveness of the method. Therefore, there can be no guarantee that new concepts and new dimensions will emerge.

Third, not all types of research are amenable to the methodological procedures outlined in this paper. Experimental studies, for example, must assume causal inferences and rigorous variable controls which eliminate the possibilities of substitution and alteration of hypotheses. Similarly, large scale surveys are not suitable to continuous modification and refinement on the basis of field experience.

Finally, a research process grounded in theory generated from field experience and other data cannot succeed if the researcher is unwilling to fully consider all the alternatives due to some a priori commitment. Any commitment to a single theory prior to actual field encounter with the research problem frequently leads to the biased selection of certain types of data. When this occurs any adequate consideration of theoretical alternatives ceases to exist.

In spite of these weaknesses the methodology implicit in both unsystematic theory and grounded theory offers a research procedure that provides for the development of both qualitative and quantitative information about the sphere of life under study. The evaluation of qualitative data in the
style of many anthropologists provides a partial keystone in the methodological system of inquiry discussed in this paper. (Freilich, 1970) The renewed interest in this type of approach by sociologists offers the promise of increased adequacy in the current efforts to bridge the gap between theory and research. Although the task of exhaustively researching any theoretical problem is an infinite process, the merger of qualitative and quantitative methods into a more integrated naturalistic approach suggests the hope that future research may be directed towards the exploration and the inspection of the empirical world rather than some speculative simulation of reality.

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