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ABSTRACT

To explore the impact of an introductory sociology course on concepts held by college students, a study was executed on the images of sociology and sociologists, the variation of this image with other variables, the degree and direction of change of these images on completing an introductory course, and variability among students' changes in direction and degree. Students enrolled in an introductory sociology college course were given questionnaires at the beginning and end of each term. A semantic differential technique was used with a seven-point scale for several polar opposites. In addition, questionnaires at the end of each course included a critique of the course and several background items. The hypotheses that college students would share a consistent image of sociology and that selected personal variables would not affect their images of sociology or sociologists were supported by the data. A third hypothesis, proposing little changes in student images of sociology after the introductory course, was not supported: student images did appear affected by the course. Research methodology, references, and tables of data are included in the report. (Author/KSM)

STUDENT IMAGES OF SOCIOLOGY: VARIATIONS AND CHANGE

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ABSTRACT

STUDENT IMAGES OF SOCIOLOGY: VARIATIONS AND CHANGE

The word sociology evokes a wide variety of images, definitions, and sentiments. Some consider the term synonymous with social work, while others associate it with socialism. To many, the term conveys a positive tone, and thus, describe sociology as useful, meaningful, or valuable. However, others might find polar terms more appropriate. Finally, sociology is conceived of by some as a science and sociologists as scientists. Again, the opposite view is also held. What patterns might there be in such varied images? What impact might an introductory college course have on such conceptions?

In an effort to explore this wide ranging set of concerns, we specified a series of more focused questions: (1) What images do college students have of sociology and sociologists? (2) Does this image vary systematically with such variables as age, exposure to other social sciences, or sex? (3) Do these images change upon completing an introductory course in sociology? (4) If so, in what direction and to what degree? (5) Do all students change in the same direction and to the same degree? If not, what might account for such variability?

Our sample consisted of university students who had enrolled in an introductory sociology class over four academic quarters. Questionnaires were administered at the beginning and end of each term which included a series of items through which students portrayed their image of sociology and sociologists. The semantic differential technique was used with a seven point scale for such polar opposites as scientific - not scientific, abstract - concrete, liberal - conservative. In addition, questionnaires at the termination of each course

included a critique of the course and several background items.

We hypothesized that college students would share a consistent image of sociology, and that selected personal variables, e.g. sex, age, college major and others, would not affect their images of sociology or sociologists. Our data supported these hypotheses. The third hypothesis proposed little change in student images of sociology after taking an introductory course. While this hypothesis was not supported since there did appear to be change in student images, the selected personal variables did not account for this change to any large degree. Thus, student images did appear to be affected by the course, but the effects were similar among most types of comparison groups, although several trends could be identified that appear to merit further exploration.

STUDENT IMAGES OF SOCIOLOGY: VARIATIONS AND CHANGE*

Sociological theorists often have stressed the importance of occupations and particularly the images or perceptions of them as a constraint on human behavior. For example, Simmel observed that a person's vocation always will be linked to his life in its entirety (Simmel, 1955:188). Marx argued that an individual's work was the primary creative force in one's existence. Gross has proposed that in present-day Western society occupation has become a fundamental index of status and standard of self-respect (Gross, 1959:640). Furthermore, it often has been noted that the images of certain occupations, especially for the professions appear to be influential factors in future behavior and role-playing by participants in those occupations, e.g. see Beardslee and O'Dowd, 1961. The image of an occupation or profession is also thought to affect the recruitment of certain types of people, and discourage others from entering the field.

Hence, student images of sociology could be an important factor in the future direction of the discipline since they influence the types of persons attracted into sociology at both the graduate and undergraduate levels. They may also affect, to some degree at least, the sociologist's definitions of appropriate professional behavior. Unfortunately, there has been little empirical research directed at ascertaining current student images of sociology. In addition, we really do not know the degree to which such images are clearly formed or defined. Nor do we have data on their stability or information on the factors that may cause alternation in such images. For example, are images

*The authors wish to thank the University of Denver, Department of Sociology, and in particular, Dr. William H. Key and Dr. Richard M. Burkey, whose assistance made this research paper possible.

of disciplines subject to change with new information generated through introductory courses.

In an effort to explore these issues, we specified a series of more focused questions: (1) What images do college students have of sociology and sociologists? (2) Do these images vary systematically with such variables as sex, exposure to other social sciences, or major in colleges? (3) Do these images change upon completing an introductory course in sociology? (4) If so, in what direction and to what degree? (5) Do all students change in the same direction and to the same degree? If not, what might account for such variability?

THEORETICAL FRAMEWORK

Although there has been little empirical research specifically directed at the exploration of student images of sociology, there has been a great deal of discussion among sociologists on the current image of sociology, and particularly the image of the field that is portrayed to students in basic sociology courses, e.g. see Sibley, 1963; Bates and Reid, 1971; Campbell, 1970; Willhelm, 1973. For example, Ernest Q. Campbell (1970) has expressed much concern with the image of sociology that he suspects pervades in introductory and basic sociology courses. He maintains that, "there is no resemblance between the mishmash of elemental economics, anthropology, psychology, and social criticism," which typically comprises introductory courses in sociology, and the meticulous, statistical work of such theorists as Duncan and Eisenstadt.

Campbell's position, like that of many others whose views have been communicated through such journals as The American Sociologist, reflects the tone for much of this discussion. Certainly, sociologists, as reflected in the major

journals of their discipline, e.g. American Sociological Review, increasingly rely on varied statistical techniques, mathematical methodologies, and a general rationale wherein sociology is viewed as a "true" science (Willhelm, 1973:13). Consequently, most discussions of the current image of sociology found in these journals reflect a viewpoint that the discipline ought to be defined as a science and that varied methodological and statistical techniques be emphasized in order to legitimate a "scientific image." In general, these authors (for example, see Cline and Meyers, 1970; and Gates, 1969) appear to be alarmed by what they see as the current image of sociology portrayed in introductory courses.

Cline and Meyers (1970) take this argument a step further by proposing that the basic undergraduate course in sociology should be restructured to include exercises in computer utilization. According to Cline and Meyers, the chief problem is that undergraduates are being given an erroneous impression of sociology as merely a field that catalogues findings found in professional journals, whereas we should be introducing students to empirical data so that they can formulate and test their own hypotheses. Thus, their solution to the "false" image of sociology is to incorporate into undergraduate courses some elements of computer utilization that will introduce students to the "rigorous" world of empirical research and the various machine technologies used by many within the profession. In this way, Cline and Meyers feel that students could better decide whether or not sociology is a discipline that they want to consider for a major or even a future profession.

However, there are critics of this viewpoint. For example, Robert Friedrichs (1968) challenges proponents of such "technological images." He suggests that they too often reflect a belief that "the solid-state computer has finally

eliminated human bias, and has introduced a golden era of value-free sociology." However, as Friedrichs observes, neither computers, nor any other type of gadgetry, can eliminate bias. They alone cannot make sociology into a science. There is no self-validating mathematics or other system that can remove the necessity of choosing axioms, making decisions, and accepting responsibility for the concepts and definitions chosen to apply to a particular problem. Digital computers do not avoid bias, they demand it in order to operate.

This general trend toward increased technological training, may not be simply an attempt to win acceptance as a value-free science. But as Sidney Willhelm (1973) maintains, this move toward a technological realignment is a reflection of the prevailing political economy of broader society. According to Willhelm, the application of technology in universities and colleges provides a grand opportunity to expand profits and influence of major corporations in the educational field. Furthermore, the application of technology requires much greater uniformity in educational programs, which could well result in the centralization of power in the hands of professional organizations, foundations and agencies of accreditation.

While the sociologist's concern with the type of image that should be portrayed in basic sociology courses varies widely depending on their own value-system, all authors share a common belief that the image portrayed in introductory courses is important in that it may affect not only who is, or who is not, recruited to the profession, but also may be influential in molding the orientations of the very sector of society whose power will increase over future years. While they share this belief, there is no empirical evidence to support it.

Of course, there have been some empirical studies of student images of

science and scientists. Many of these studies occurred during the early 1960's when the Kennedy administration intensified recruitment of young people into the physical sciences, particularly those related space programs. For example, Beardslee and O'Dowd (1961) used a semantic differential technique to ascertain the college student's image of scientists in general. They administered a questionnaire to undergraduates, including freshmen and seniors, who were enrolled in four eastern colleges. Their data suggested a commonly shared image which did not vary widely among college students with diverse experiences and personal histories. Thus, the image of a scientist appeared to be a fairly stable, culturally-defined stereotype that was not affected by such factors as the student's religion, father's occupation and other personal variables.

Nelson and McDonagh (1961) essentially reached the same conclusion in their study of high school senior's images of professional occupations. Using such variables as sex, IQ, perceived social class, and college plans, they found no important differences in student images of professional occupations. Thus, Nelson and McDonagh concluded that there exists a "mass image" of the professions which is widely shared by most American high school students.

On the basis of these studies, we expected to find a fairly stable, widely shared image of sociologists and sociology with little variability among the students sampled. Thus, the following hypothesis was formulated:

> Hypothesis 1 - the image of sociologists and sociology will be widely shared and relatively consistent among all college students sampled.

These same studies indicate that the personal characteristics of the student respondents (sex, father's occupation, religion, and the like) will have little affect on the image of sociologists and sociology. Therefore, we proposed

a second hypothesis:

> Hypothesis 2 - the college student's image of sociologists and sociology will not covary with several selected personal variables (e.g. sex, age, population density of area lived in while in high school, college major, membership in Greek organization).

In addition, the previous research suggested that the image of professions are culturally defined to the extent that they remain relatively consistent and unchanging over time. If this is true, then contrary to the concerns of Campbell, Gates, and others, basic sociology courses may have little affect on either creating new images of sociology or changing old stereotypes. Assuming this to be true, the following hypothesis was stated:

> Hypothesis 3 - the introductory course in sociology will have little affect on changing the college student's image of sociologists or sociology.

Before turning to the specific findings, we will explicate our research procedures, their limitations and the characteristics of the student sample.

RESEARCH METHODOLOGY

Our sample consisted of university students who had enrolled in an introductory course over four academic quarters (1968-1969). The same professor directed the course throughout, although graduate students, who met with small groups of the students (Laboratory sections) two days each week, varied during the data collection periods. Questionnaires were administered at the beginning and end of each term which included a series of items through which students portrayed their image of sociology and sociologists. The semantic differential technique was used with a seven point scale for several polar opposites, e.g. scientific-not scientific, abstract-concrete, liberal-conservative. In addition,

questionnaires at the termination of each course included a number of background items and questions whereby students could record their reactions to the course.

There are several limitations in our data set that precludes generalization without great caution. First, seventy-six percent of the students sampled were freshmen or sophomores. (For a complete description of the sample, see Table 1). Second, there was a forty-seven percent attrition rate which occurred for several reasons: (1) some of the laboratory sections did not participate in the study: (2) data were used only on those students who completed all three questionnaires (pre-test, post-test, and background-critique questionnaires). Absenteeism on any of the two administration days usually eliminated the respondent. As a result, it is highly probable that the sample contains a bias in the direction of students who regularly attend classes.

Third, and perhaps most importantly of all, students were forced to respond in terms of an image which may not exist. That is, like any other "forced choice" technique where respondents are required to use categories supplied by the researcher, there is the danger that an "artificial reality" is created. And this "created reality" may be interpreted by researchers as being far more structured and consistent than it is to the respondents. (Cicourel, 1964) Thus, students in the classes surveyed may think of sociology in terms other than the ones we supplied and the aggregated scores derived through our analysis may not reflect the meanings of their "vocabularies." However, initial discussions with students before the general questionnaire administrations and during then indicated that they could respond to these polar opposites and attach meaning to their responses. Yet, we suspect that we only scratched the surface toward capturing the content and variations in the images held by students. Nevertheless, we concluded that

these data would allow us to explore our hypotheses, and provide some empirically based insights concerning the current image of sociologists and sociology.

(Table 1 about here)

FINDINGS

What images do college students have of sociology and sociologists upon entering an introductory course. (See Tables 2 and 3 for a complete summary of the data.) The image that emerges is a rather positive picture of a sociologist. Sociologists are viewed as useful, somewhat optimistic, interesting, slightly scientific, quite practical and wise. Other positive aspects of the emergent image of the sociologist were that they are helpful, valuable and meaningful. There were several adjectives such as abstract-concrete, biased-not biased, theoretical-factual that yielded rather neutral positions, i.e. about four on our seven point scale. Thus, these terms may not be viewed by students as having much relevance to sociologists. Of course, as we emphasized above, all of the adjectives used in the semantic differential were chosen by the researchers. Thus we do not know if there are additional terms students would have selected as being more appropriate. Based on this criterion, i.e. a score close to 4.0, students also did not find such dimensions as religious-irreligious or democratic-republican as being particularly important in distinguishing sociologists.

(Tables 2 and 3 about here)

Sociology as a profession rated a positive social image. Sociology was seen as being helpful, useful, practical, beneficial, valuable, interesting and offering valid research. Sociology, like sociologists, was viewed as neither

scientific nor unscientific. Thus, the students sampled did not seem to define the field as a science. As in the case of images of sociologists, such adjectives as abstract-concrete, biased-not biased, and theoretical-factual were not viewed as salient distinctions. In addition, such descriptions as clinical-statistical, objective-subjective research, social work-not social work invoked very neutral responses. Finally, sociology was seen as mildly liberal by the students sampled.

To summarize, images of sociologists and sociology appeared quite positive on the quality of what might be labeled "social usefulness" or "social desirability." However, such qualities as scientific, statistical, objective research, and being different from social work, invoked highly neutral responses contrary to the image of sociology that probably is desired by many sociologists. The college students sampled did not enter this course on sociology expecting a "rigorously" scientific and very methodologically oriented discipline.

Furthermore, hypothesis 1--that the image of sociology and sociologists will be widely shared among the college students sampled--appeared to be supported by our data. When frequency distributions for each of the items listed in Tables 2 and 3 were reviewed, it appeared that students did seem to share rather consistent images. Variations among the items, however, is reflected in the standard deviations which ranged from a low of .98 (Democratic-Republican) to a high of 1.57 (Theoretical-Factual). The image of sociologists and sociology according to the level of abstraction, e.g. theoretical-factual, abstract-concrete, consistently had the highest standard deviation ranging from 1.50 to 1.57. (See Tables 2 and 3 for the standard deviation of all thirty-two variables.)

As indicated by the tabulations listed in Tables 2 and 3, the questionnaire

included a total of thirty-two paired items reflecting images of both sociologists and sociology. However, many of the adjective pairs were identical for both referents, e.g. useful-useless. Furthermore, several paired adjectives appeared to reflect somewhat common dimensions. Thus, we explored the possibility of reducing the original thirty-two variables to a set of more general factors. Seven central dimensions emerged as we reviewed the inter-item correlation matrix wherein such variable was correlated with all others. See Table 4.

(Table 4 about here)

The largest factor grouping reflected an image of sociology and sociologists which we labeled social desirability. As mentioned previously, there was a pattern of socially positive images running through the student responses. Twelve paired adjectives, including such items as useful-useless, interesting-boring, practical-impractical, reflected this pattern. The correlation coefficient between any two pairs of adjectives for the six items describing sociologists ranged from .31 to .56 with an average ($\bar{x}$) .44. The six adjective pairs of sociology ranged from .29 to .54 with an average ($\bar{x}$) correlation of .40. Finally, the cross-item correlations for these adjectives between sociology and sociologists ranged .21 to .52 with an average ($\bar{x}$) of .33. The internal consistency of this cluster was supported by the item to total score correlation (i.e. summed response on all twelve items, divided by 12 for the total score). See Table 5 for the list of the twelve adjective pairs comprising the "social desirability score," and the item to total score correlation coefficients for each.

(Table 5 about here)

The second factor that appeared to be reflected in the student responses was labeled as the scientific image of the field. However, only two variables related to this dimension and they were identical adjectives--scientific-not scientific--which were used to describe sociology and sociologists. The cross item correlation was .45 (See Table 4). A much higher item to total score correlation was obtained, however, as presented in Table 5 (r = .85 for each item).

A third factor labeled level of abstraction included four paired items, two items used to describe sociology and sociologists: theoretical-factual, abstract-concrete. The correlations ranged from .28 to .52. See Table 5 for the item to total score correlations.

The fourth factor was comprised of two items concerning student images of the field of sociology as contrasted to Social Work. The items were: about the same as social work-different from, social work-detached objective research. The inter item correlation coefficient between these two items was .41. See Table 5 for the item to total score correlations.

The fifth factor reflected the degree to which students saw either sociologists or sociology as biased in their research and/or theory. As presented in Table 4, these two items were moderately correlated (r = .47). And too, the item to total score correlations listed in Table 5, suggested an acceptable level of internal consistency.

Finally, we selected two additional dimensions which were each comprised of a single item. Thus the sixth factor was a liberal versus conservative view of sociology, and the seventh was a religious or irreligious image of the sociologist. Both of these areas struck us as being important and separate from the other five dimensions which were comprised of multiple items. As

inspection of Table 4 reveals, neither of these two items correlated even moderately with any of the other thirty items used.

Using the seven dimensions that reflected different aspects of the student images of sociology and sociologists, we turned to our second hypothesis, i.e. that these images would not covary with student characteristics. The following eight variables were selected that we thought might affect these student images: age, major, and sex of respondent, area lived in while attending high school, membership in a greek organization, previous social science courses both in high school and in college, and membership in one of four student subcultures (as measured by Gottlieb and Hodgkins, 1968). A one-way analysis was done comparing the mean scores of each of the analytic groups specified for all eight variables on each of the seven dimensions.

As inspection of Table 6 reveals, these comparisons indicated that none of the independent variables systematically accounted for much of the variations in the student images. While not systematic across all seven dimensions, three exceptions to this general conclusion merit mention. First, in terms of sex, females rated sociology as more socially desirable, more like social work, and somewhat more conservative than males. The older the age groups, the less sociology was seen as socially desirable. Business majors did not define sociology as socially desirable relative to the other groups. This is consistent with the findings of Franks, Falk and Hinton (1973) who reported that business majors scored more conservatively than sociology majors on a general social values test. However, despite these trends, we concluded that the overall pattern in the data required acceptance of our second hypothesis that college student images of sociologists and sociology do not covary systematically with

the individual characteristics we selected.*

Table 6 about here

Did these images change after completing this introductory course** in sociology? As indicated in our discussion of methodology, a post-test was administered shortly before the end of the course. Pre- and post-test scores were compared on each of the seven dimensions. (See Table 7). Six of the seven measures indicated significant change. The one with little change was the "liberal-conservative" dimension. Thus, after the course sociology and sociologists were seen as more socially desirable, more scientific, more concrete (rather than abstract), less biased, less like social work and less religious. The most dramatic change in terms of the differences among average scores was the shift in viewing sociology as being unlike social work ($t = 7.70$). Clearly these data suggest that our third hypothesis be rejected. It appeared that this introductory course in sociology did have a considerable affect on the student images. Of course, how long-lasting that effect might be remains unexplored.***

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*Correlation coefficients were computed between each of the seven image dimensions and measures of dogmatism (Rokeach, Forme, 1960), religiousity as developed by McClean (See Drabek, 1966) and alienation (Dean, 1961). All twenty-one coefficients were insignificant except one which was interpreted as indicating that the more alienated the respondent, the less he would rate sociology as socially desirable ($r = -.203$).

**All sections of this course were under the general supervision of Dr. Richard Burkey to whom we are indebted for assisting us in this survey. The course might be typified as fairly standard in content and reflects the general viewpoint found in most widely used texts. Large group lectures are supplemented with small group meetings (n=18) twice weekly in which graduate students review text materials, discuss questions from the lecture and engage in short term illustrative experiments.

***Separate t-tests were run for all 32 items through which we were able to compare the pre- and post- measures as reflected on a one item index. The results

Table 7 about here

Given the clear indications that the student images had changed during enrollment in the course, we turned to our final research question: did the images of sociology and sociologists change more for some analytic groups than others? To answer this question we reviewed the means scores for each of the six dimensions on which change had occurred using the eight independent variables discussed above. See Table 8 for a complete presentation of all data.*

Table 8 about here

In general, as with the variations in the initial images, it appeared as if the independent variables did not account for much of the changes registered in the pre- and post-tests aside from one consistent pattern. Note the mean scores on each of the six dimensions for males as opposed to females. In every instance the degree of change was greater for females. Indeed the most dramatic mean score shift in the entire data set was among females who reportedly altered their image of sociology so as to define it as being different from social work.

Among the other patterns of interest were that persons in the older age group registered less change on three of the dimensions (abstraction, social work and bias) than the younger groups. Similarly business major reflected less

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obtained in this analysis were consistent with those reported above using the seven more global dimensions. Thus, the use of the seven dimensions did not appear to result in either distortion or a loss of information, as opposed to the more cumbersome method of reviewing each of the 32 items singly.

*We are running a two-way analysis of variance on the data presented in Table 8 and our interpretation of these data may be reinforced or altered somewhat after these results are available.

change than students in other subject matter areas. While less dramatic and consistent than these trends, there was a slight tendency for students with rural backgrounds to shift more than the others. While students who were affiliated with fraternities or sororities (Greek organizations) exhibited almost identical change patterns on five of the six dimensions, they did not alter their rating on the science dimension as did non-Greeks. Finally, previous exposure to the social sciences either in high school or college appeared to make some difference in that those reporting such courses changed little on the science and level of abstraction dimensions, in contrast to those who had never enrolled. Also, students who had taken a high school sociology course still shifted in the general direction of differentiating sociology from social work, but not nearly as dramatically as those who lacked such exposure. Thus, while not as consistent and as pronounced as we had anticipated, these trends do explicate several potential research questions that appear to us to have many implications.

IMPLICATIONS

Looking across all of these data patterns what can we conclude? What types of answers do these data suggest regarding the questions with which we began? What implications do these findings have for persons responsible for teaching introductory sociology courses? And finally, in what ways might this type of research effort aid us in assessing our fundamental objectives in such courses which presumably ought to be designed within a larger context--the enhancement of a liberal arts education.

First, we concluded that this initial exploration, despite all of its methodological flaws, clearly indicates that the phenomena of student images can be investigated empirically. These represent a type of "hidden learning"

that is taking place in classrooms quite apart from the specific sets of information, facts, and so on that are usually the sole concern of instructor evaluation. This is not to say that cognitive learning is unimportant and shouldn't be assessed. Rather our point is--similar to that of others whose analyses of public school classrooms have proved so revealing (e.g. Jackson, 1968; Hargroves, 1967; Dreeben, 1967)--that more than substantive content is being learned. And that we should be more sensitive in designing courses than we have been heretofore in trying to ascertain these more subtle types of learnings such as student images of the discipline.

Second, while we began our data collection effort with a wide ranging set of thirty-two somewhat different terms to try and capture aspects of student images of sociology, it is clear now that a narrower set of dimensions could be used. Thus, the seven dimensions we derived appeared to be sufficiently distinct as to be used in the future rather than be blended into one more general measure. Of course, several of these areas, especially those comprised of one or two items require development, but at least we have an initial start.

However, a major warning signal is in order. While we viewed our work as important, in that exploration has to begin someplace, we have no illusions about the progress made here. Certainly the list of thirty-two polar adjectives gives us some basis for assessing student images. But as we emphasized above this is very crude and can be most deceptive. As Cicourel's (1964) critique so clearly indicates, it is quite possible that the images we have discussed here do not reflect the interpretations, meanings and contents that comprise the vocabularies of the students surveyed. To what degree the images that they in fact have of sociology are vague, contradictory, and rather empty, we really don't know.

Like other users of fixed choice questionnaires we solved this problem of "human meaning" by simply avoiding it. Thus, while future work along the lines we have reported here is needed badly, one major thrust of the work which is required immediately is more systematic and rigorous investigation into the basic phenomenon of student images. Until more powerful measures are constructed which more adequately assess the "definitions of reality" as perceived by students, all other work is of necessity constrained.

Third, as we hypothesized at the outset, several types of student characteristics (age, sex, college subcultural grouping, membership in a Greek organization, population density of community where the student attended high school, major, and previous exposure to sociology or related courses in either high school or college) had little affect on student images of sociology. Minimal variation among the various analytic groupings across all of these variables was found. Similarly, there was relatively little variation across each of the thirty-two items. Thus, we interpreted our findings as supporting such previous research as that reported by Beardslee and O'Doud (1961) who concluded that student images of professional occupations are culturally defined and exhibit the quality of "mass images" which are widely shared by most members of the society regardless of individual characteristics.

Fourth, contrary to our hypothesis, that these student images would remain relatively stable and unchanging over time, the pre- and post course measures indicated considerable change. While we do not know how long lasting these alterations were, these data clearly indicated that students shifted their image of sociology in six distinct directions. Upon leaving the course they now saw the discipline and its practioneers as slightly more socially desirable, more

scientific, somewhat more concrete than abstract, less biased, much less like social work, and somewhat having less of a religious quality.

Finally, as we explicated above, while these changes did occur, they appeared for the most part, to be rather consistent across all of the various analytic groups we were able to construct using the eight student characteristics we selected, e.g. age, sex, major, and so on. While various general trends were identified within several of these variables wherein one analytic group evidenced greater shifting over time than another, the most consistent and dramatic shifts were among female students. More so than males they shifted in the directions listed above, especially in differentiating sociology from social work. Thus, the shifts in images appeared to have resulted from the course and to have been rather uniform among most students. Since these data were collected at eight different points in time (i.e. four quarters with pre- and post-test for each) and since the students varied from first quarter freshman through a few juniors and seniors, and so on, it is less likely that some exogenous factor was responsible. Of course, how lasting these apparent changes will be, as we mentioned previously, awaits investigation.

These findings suggest numerous potential research questions that would appear to be of interest to many in the discipline. For example, what of variations in content and approach? Does it matter from the standpoint of student images of the discipline how the course is taught or what is taught? While we have encountered many who have argued for one approach or another, e.g. Cline and Myers, Campbell, etc., there appears to be a real scarcity of empirical data of any type to document consequences. What affect would an introductory course have on student images that was designed along the lines that Cline and Meyers proposed with a major emphasis on the research process and statistical reasoning?

What consequences might such an experience have on recruitment of majors? To what degree does the introductory course act as a recruitment mechanism for departmental majors? Would students who arrive interested in social problems be turned away if their introductory course reflected the recommendation of Cline and Meyers? Would students more disposed to a technical career be attracted in larger numbers? Because of the less distinct public image, we suspect that this function is more critical in sociology than many other academic areas where career paths and subject content are more clearly demarcated. Thus, it may be that these issues ought to be much more of a concern to sociologists than they appear to be based on available empirical evidence. As enrollments decline and staff members are dropped, the issues may increase in "importance." And clearly they have substantial implications for undergraduate education in general.

Indeed, as we discussed these data during the process of preparing this paper, we found ourselves questioning the basic objectives of the introductory course. What is it that students should come away with from such courses? Should it be largely methodological training on the assumption that these tools will permit students to study society? Should the emphasis be on a survey of the works and findings of sociologists so that students depart a bit more "enlightened?" Or should students gain an initial introduction into that highly illusive quality that Mills (1959) and others have labeled "the sociological imagination?" Perhaps some combination of all of these is best.

Yet, as we pondered the options, we became concerned, for most students will have but one formal exposure to the discipline. Students who left a sociology course wherein computer technology and research methodology was the prime focus may well command a set of tools. But the question arises--do they know why such

tools are used. More importantly, do they have the desire to use them. We fear that, unless done with unique skill, such desire and most curiosity may be stifled by a misplaced emphasis on methodological detail. And such approaches we fear may have consequences for student images and recruitment in that those attracted may lack a genuine curiosity for an understanding of human societies.

In contrast, students leaving with a smattering of unconnected sociological findings may or may not see much value in the activities of sociologists. They may or may not find such materials valuable in better understanding their own lives. And while students enrolling in such courses encounter large sets of information, most of it will be forgotten rather quickly. It is as though they have been given a loaf of bread, but when it runs out they don't have a recipe to make any more.

Thus, we suggest that more of us ought to be involved in experimentation in teaching introductory courses and in trying to assess the consequences of our efforts. And such assessments should include not only types of substantive content that may be learned, but more subtle areas as well, such as images of the discipline. We suspect that some students in these courses do--in a manner that is not at all clear to us--grasp an initial set of insights that are so disruptive that they can never view the world the same way again. Far too often, however, that type of highly personal and exceedingly challenging intellectual growth does not occur as passage of examinations become the chief end toward which student effort is directed.

But are some types of courses more effective in implanting the sociological imagination in students than others? Are some more liberating? Or are these concerns too often lost in classes that are based on the assumption that other

types of learnings are more essential than the one we would rank high above all others--the acquisition of the sociological imagination as a habit of mind, a first step toward increased personal freedom.

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TABLE 1

DESCRIPTION OF SAMPLE

Variable	Criterion Group		
Data Base	Completed Pre-Tests	Completed Post-Tests	Completed Background-Critiques
Fall, 1968 N=237*	63% (152)	63% (150)	63% (150
Winter, 1969 N=242	49% (118)	49% (118)	48% (117)
Summer, 1969 N=78	63% (49)	63% (49)	26% (20)
Fall, 1969 N=235	37% (87)	37% (87)	37% (87)
Totals N=792	51% (406)	51% (404)	47% (374)

Class Rank	Freshman	Sophomore	Junior	Senior
N=373**	46% (171)	30% (112)	16% (60)	8% (30)

Age	18 or below	19-20	20-22	23 or above
N=372	36% (135)	44% (164)	13% (47)	7% (26)

Sex	Male	Female
N=370	48% (179)	52% (191)

Major	Business	Social Science	Pre-Professional (Pre-Law, Pre-Med)	Engineering
N=362	26% (93)	68% (245)	6% (21)	1% (3)

Ethnicity	Negro	Spanish American	Jewish	Oriental	Other
N=351	2% (6)	1% (4)	18% (62)	1% (3)	79% (276)

* Total enrolled in course
** N varied due to missing data

TABLE 2

MEAN SCORES OF STUDENT IMAGES OF SOCIOLOGISTS*

0.0 1.0 2.0 3.0 4.0 5.0 6.0 7.0		standard deviation
Useful	Useless	1.13
Optimistic	Pessimistic	1.23
Interesting	Boring	1.21
Scientific	Not Scientific	1.31
Practical	Impractical	1.18
Abstract	Concrete	1.52
Biased	Not Biased	1.53
Valuable	Not Valuable	1.19
Theoretical	Factual	1.57
Wise	Foolish	1.18
Religious	Irreligious	1.12
Democratic	Republican	.98
Meaningful	Meaningless	1.13
Helpful ,	Not Helpful	1.09

*n = 374

TABLE 3

MEAN SCORES OF STUDENT IMAGES OF SOCIOLOGY*

	0.0 1.0 2.0 3.0 4.0 5.0 6.0 7.0		standard deviation
Something I know a lot about		Something I know little about	1.23
Helpful to me		Not helpful to me	1.12
Useful		Useless	1.13
Practical		Impractical	1.26
Harmful		Beneficial	1.31
Valuable		Not Valuable	1.23
Abstract		Concrete	1.52
Interesting		Boring	1.33
Clinical		Statistical	1.32
Scientific		Not Scientific	1.38
About the same as social work		Different from social work	1.45
Objective research		Subjective research	1.35
Valid research		Invalid research	1.08
Ideological		Not Ideological	1.34
Biased		Not biased	1.48
Theoretical		Factual	1.50
Social work		Detached objective research	1.37
Liberal		Conservative	1.28

*n = 374

TABLE 4

INTER-ITEM CORRELATION MATRIX*

Sociologists		Var. 1 useful-useless	Var. 2 optimistic-pessimistic	Var. 3 interesting-boring	Var. 4 scientific-not scientific	Var. 5 practical-not practical	Var. 6 abstract-concrete	Var. 7 biased-not biased
useful-useless	Var. 1	-	.16	.47	.24	.42	-.07	-.04
optimistic-pessimistic	Var. 2	.16	-	.16	.10	.13	.03	-.08
interesting-boring	Var. 3	.47	.16	-	.24	.30	-.02	-.04
scientific-not scientific	Var. 4	.24	.10	.24	-	.23	.03	-.05
practical-impractical	Var. 5	.42	.13	.31	.23	-	-.10	-.07
abstract-concrete	Var. 6	-.07	.33	-.02	.03	-.10	-	.13
biased-not biased	Var. 7	-.04	.08	-.04	.05	-.07	.13	-
valuable-not valuable	Var. 8	.56	.17	.38	.17	.40	-.12	-.05
theoretical-factual	Var. 9	.04	.02	.08	.02	-.01	.32	.15
wise-foolish	Var.10	.30	.09	.28	.14	.33	-.08	-.05
religious-irreligious	Var.11	.002	.02	.02	.006	.01	.01	.004
Democratic-Republican	Var.12	.08	.03	.008	.02	.10	.01	.03
meaningful-meaningless	Var.13	.47	.23	.43	.23	.42	-.11	-.12
helpful-not helpful	Var.14	.44	.23	.36	.14	.40	-.05	-.16

Sociologists		Var. 8 valuable-not valuable	Var. 9 theoretical-factual	Var.10 wise-foolish	Var.11 religious-irreligious	Var.12 Democratic-Republican	Var.13 meaningful-meaningless	Var.14 helpful-not helpful
useful-useless	Var. 1	.56	.04	.30	.002	.08	.47	.43
optimistic-pessimistic	Var. 2	.17	.02	.09	.02	.03	.23	.23
interesting-boring	Var. 3	.38	.08	.28	-.02	.008	.43	.36
scientific-not scientific	Var. 4	.17	.02	.14	.006	.02	.23	.14
practical-impractical	Var. 5	.40	-.01	.33	.01	.10	.41	.40
abstract-concrete	Var. 6	-.12	.32	-.08	.01	.01	-.11	-.05
biased-not biased	Var. 7	-.05	.15	-.05	.004	.03	-.12	-.16
valuable-not valuable	Var. 8	-	-.03	.35	.003	.08	.56	.56
theoretical-factual	Var. 9	-.03	-	-.17	-.06	.0005	.01	.05
wise-foolish	Var.10	.35	-.17	-	.02	.01	.38	.36
religious-irreligious	Var.11	.003	-.06	.02	-	-.05	-.06	-.002
Democratic-Republican	Var.12	.08	.0005	.01	-.05	-	.17	.02
meaningful-meaningless	Var.13	.56	.01	.38	-.06	.17	-	.56
helpful-not helpful	Var.14	.55	.05	.36	-.002	.02	.56	-

*n = 374

TABLE 4 (continued)

Sociology	Sociologists	useful-useless	optimistic-pessimistic	interesting-boring	scientific-not scientific	practical-impractical	abstract-concrete	biased not biased
		Var. 1	Var. 2	Var. 3	Var. 4	Var. 5	Var. 6	Var.
something I know a lot about-little	Var.15	.16	.12	.09	.01	.06	.01	.04
helpful to me-not helpful	Var.16	.31	.10	.32	.19	.24	-.04	-.04
useful-useless	Var.17	.41	.15	.33	.14	.26	-.05	-.03
practical-impractical	Var.18	.33	.17	.25	.22	.35	-.12	-.04
harmful-beneficial	Var.19	-.13	-.09	-.19	-.02	-.13	.08	.15
valuable-not valuable	Var.20	.35	.15	.30	.14	.22	-.10	-.08
abstract-concrete	Var.21	-.08	.01	.01	-.01	-.09	.51	.21
interesting-boring	Var.22	.29	.08	.52	.15	.21	-.02	-.06
clinical-statistical	Var.23	.19	.17	.07	.08	.04	.02	.10
scientific-not scientific	Var.24	.18	.03	.17	.45	.08	-.01	-.05
about the same as social work	Var.25	-.06	.08	-.04	-.03	-.03	.09	.01
objective research-subjective	Var.26	.03	-.002	.01	.24	.11	-.01	.03
valid research-invalid	Var.27	.32	.13	.25	.22	.28	-.09	-.05
ideological-not ideological	Var.28	-.01	-.006	-.01	-.06	-.07	.14	.08
biased-not biased	Var.29	-.06	.036	-.07	-.08	-.08	.20	.47
theoretical-factual	Var.30	-.06	-.02	-.07	-.01	.02	.28	.06
social work-detached objective	Var.31	.06	.15	.06	-.10	.07	.08	.004
liberal-conservative	Var.32	.14	.09	.12	.02	.10	.04	-.05

TABLE 4 (continued)

Sociology	Sociologists	valuable-not valuable	theoretical-factual	wise-foolish	religious-irreligious	Democratic-Republican	meaningful-meaningless	helpful-not helpful
		Var. 8	Var. 9	Var.10	Var.11	Var.12	Var.13	Var.14
something I know a lot about-little	Var.15	.06	-.006	.08	.03	.07	.03	-.07
helpful to me-not helpful	Var.16	.34	.02	.19	.03	.15	.37	.35
useful-useless	Var.17	.43	.04	.23	-.03	.07	.50	.47
practical-impractical	Var.18	.40	-.04	.28	.03	.12	.39	.39
harmful-beneficial	Var.19	-.21	.14	-.15	-.05	-.07	-.21	-.19
valuable-not valuable	Var.20	.39	-.09	.28	-.02	.06	.36	.35
abstract-concrete	Var.21	-.08	.32	-.09	-.05	-.03	-.08	-.07
interesting-boring	Var.22	.25	-.06	.28	.02	.01	.31	.32
clinical-statistical	Var.23	.11	.002	-.001	.05	.16	.10	.10
scientific-not scientific	Var.24	.10	-.08	.11	.08	.007	.07	.09
about the same as social work	Var.25	-.12	.007	-.07	.01	.0004	-.17	-.07
objective research-subjective	Var.26	.01	.01	.07	-.04	-.07	.03	.07
valid research-invalid	Var.27	.31	-.07	.25	-.03	.02	.34	.33
ideological-not ideological	Var.28	-.04	.13	-.05	-.02	.02	-.002	.02
biased-not biased	Var.29	.006	.11	-.03	-.04	-.04	-.08	-.07
theoretical-factual	Var.30	-.05	.52	-.10	.005	-.03	-.07	-.02
social work-detached objective	Var.31	.02	.02	-.01	-.02	.04	.04	.01
liberal-conservative	Var.32	.09	.11	.05	-.15	.22	.09	.11

TABLE 4 (continued)

Sociology		something I know A lot about-little	helpful to me-not helpful	useful-useless	practical-impractical	harmful-beneficial	valuable-not valuable	abstract-concrete	interesting-boring	clinical-statistical
		Var.15	Var.16	Var.17	Var.18	Var.19	Var.20	Var.21	Var.22	Var.23
I know about	Var.15	-	.18	.01	.05	.06	.06	-.01	.12	.13
helpful-not helpful	Var.16	.18	-	.54	.40	-.23	.45	-.03	.38	.12
useful-useless	Var.17	.015	.54	-	.52	-.20	.42	-.03	.40	.15
practical-impractical	Var.18	.05	.40	.52	-	-.26	.43	-.22	.32	.08
harmful-beneficial	Var.19	.06	-.23	-.20	-.26	-	-.43	.16	-.27	.02
valuable-not valuable	Var.20	.06	.45	.42	.43	-.43	-	-.16	.45	.05
abstract-concrete	Var.21	-.01	-.03	-.03	-.22	.16	-.16	-	-.12	.002
interesting-boring	Var.22	.11	.38	.40	.32	-.27	.45	-.12	-	.07
clinical-statistical	Var.23	.13	.12	.15	.08	.02	.05	.002	.07	-
scientific-not scien.	Var.24	.04	.06	.05	.14	-.07	.18	-.10	.24	.10
same as social work	Var.25	.02	-.09	-.11	-.07	.20	-.07	.13	-.07	.11
obj.research-subjective	Var.26	.03	.04	.08	.04	.07	-.02	.07	-.004	.02
valid research-invalid	Var.27	.04	.29	.30	.40	-.22	.36	-.15	.35	.06
ideological-not ideol.	Var.28	-.02	-.02	-.003	.01	-.08	.09	.09	-.02	.07
biased-not biased	Var.29	-.11	-.13	-.04	-.08	.17	-.08	.18	-.08	-.04
theoretical-factual	Var.30	-.02	.04	-.02	-.07	.11	-.05	.32	-.05	-.03
social work-detached objective	Var.31	.07	.01	.04	-.02	.01	.04	.11	.02	.09
liberal-conservative	Var.32	.04	.18	.18	.08	-.09	.17	.01	.17	.07

TABLE 4 (continued)

Sociology		scientific-not scien.	about same as social work	obj.research-subjective	valid research-invalid	ideological-not ideol.	biased-not biased	theoretical-factual	social work-detached obj.	liberal-conservative
		Var.24	Var.25	Var.26	Var.27	Var.28	Var.29	Var.30	Var.31	Var.32
I know about	Var.15	.04	.02	.03	.04	-.02	-.11	-.02	.07	.04
helpful-not helpful	Var.16	.06	-.09	.04	.29	-.02	-.13	.04	.006	.18
useful-useless	Var.17	.05	-.11	.08	.30	-.003	-.04	-.02	.04	.18
practical-impractical	Var.18	.14	-.07	.04	.40	.01	-.08	-.07	-.02	.08
harmful-beneficial	Var.19	-.07	.20	.07	-.22	-.08	.17	.11	.01	-.09
valuable-not valuable	Var.20	.18	-.07	-.02	.36	.09	-.08	-.05	.04	.17
abstract-concrete	Var.21	-.10	.13	.07	-.15	.09	.18	.32	.11	.01
interesting-boring	Var.22	.24	-.07	-.004	.35	-.02	-.08	-.05	.02	.17
clinical-statistical	Var.23	.10	.11	.02	.06	.07	-.04	-.03	.09	.07
scientific-not scien.	Var.24	-	-.14	.05	.24	.05	-.05	-.06	-.10	.04
same as social work	Var. 25	-.14	-	-.01	-.21	.01	-.01	.02	.41	.02
obj.research-subjective	Var.26	.05	-.01	-	.16	-.04	-.001	.04	-.11	.02
valid research-invalid	Var.27	.24	-.21	.16	-	.08	-.02	-.06	-.10	.12
ideological-not ideol.	Var.28	.05	.01	-.04	.08	-	.20	.20	.01	.12
biased-not biased	Var.29	-.05	-.006	-.001	-.02	.20	-	.20	.015	-.01
theoretical-factual	Var.30	-.06	.02	.04	-.06	.20	.20	-	.04	.07
social work-detached objective	Var.31	-.10	.41	-.11	-.10	.01	.015	.04	-	.04
liberal-conservative	Var.32	.04	.02	.02	.12	.12	-.01	.07	.04	-

TABLE 5

ITEM TO TOTAL SCORE CORRELATIONS

Dimension		Pearson Correlation Coefficients
Social Desirability		
Sociologists:		
Var. 1	useful-useless	.67
Var. 3	interesting-boring	.62
Var. 5	practical-impractical	.58
Var. 8	valuable-not valuable	.70
Var. 13	meaningful-not meaningful	.71
Var. 14	helpful-not helpful	.69
Sociology:		
Var. 16	helpful to me-not helpful to me	.64
Var. 17	useful-useless	.71
Var. 18	practical-impractical	.66
Var. 20	valuable-not valuable	.65
Var. 22	interesting-boring	.62
Var. 27	valid research-invalid research	.58
Science		
Sociologists:		
Var. 4	scientific-not scientific	.85
Sociology:		
Var. 24	scientific-not scientific	.85
Level of Abstraction		
Sociologists:		
Var. 6	abstract-concrete	.74
Var. 9	theoretical-factual	.74
Sociology:		
Var. 21	abstract-concrete	.73
Var. 30	theoretical-factual	.71
Social Work		
Sociology:		
Var. 25	about the same as social work-different	.85
Var. 31	social work-detached objective research	.83
Bias		
Sociologists:		
Var. 7	biased-not biased	.87
Sociology:		
Var. 29	biased-not biased	.84

TABLE 6

IMAGES OF SOCIOLOGY VS. SELECTED STUDENT CHARACTERISTICS

CRITERION GROUP	Measures of Images* Social Des.	Science	Level of Abs.	Social Work	Bias	Lib-Cons.	Religiosity	N
Major								
1. Business	2.8	3.4	3.7	4.5	4.3	3.1	4.3	92
2. Social Science	2.3	3.5	3.9	4.4	4.4	3.1	4.2	241
3. Pre-Professional	2.2	3.6	4.1	4.5	4.1	2.9	4.5	20
4. Engineering	2.6	3.5	4.8	5.2	4.0	4.0	3.7	3
F	8.3***	0.2	1.8	0.5	0.4	0.7	0.7	
Membership in Greek Org.								
1. Yes	2.6	3.5	3.8	4.3	4.2	3.1	4.2	103
2. No	2.4	3.5	3.9	4.4	4.4	3.0	4.3	253
F	2.3	0.3	0.2	1.2	1.1	0.2	0.1	
Area Lived in in High School								
1. on farm or ranch	2.5	3.8	4.2	4.4	4.5	2.9	4.0	17
2. town up to 15,000	2.3	3.4	3.8	4.4	4.6	2.9	4.1	76
3. town up to 50,000	2.5	3.5	3.8	4.3	4.4	3.2	4.2	76
4. city up to 500,000	2.5	3.4	3.9	4.6	4.5	2.8	4.4	71
5. metropolitan area	2.6	3.5	3.8	4.3	4.1	3.3	4.4	116
F	1.4	0.4	0.6	1.0	2.1	1.8	1.4	
Subculture								
1. vocationalist	2.7	3.6	3.8	4.4	4.3	3.3	4.3	53
2. non-conformist	2.5	3.4	3.9	4.6	4.0	3.1	4.4	35
3. academics	2.5	3.6	3.8	4.3	4.3	3.1	4.3	105
4. collegiate	2.8	3.6	3.9	4.4	4.3	3.3	3.9	20
F	1.4	0.2	0.1	0.8	0.7	0.4	1.0	
Age								
1. 18 or below	2.3	3.4	4.0	4.4	4.4	2.9	4.2	132
2. 19-20	2.5	3.6	3.8	4.4	4.4	3.2	4.3	161
3. 21-22	2.6	3.5	3.9	4.3	3.9	3.3	4.0	47
4. 23 or above	2.7	3.5	3.6	4.8	4.2	3.0	4.5	26
F	3.3**	0.6	1.0	1.0	2.1	1.1	1.0	
Sex								
1. Male	2.6	3.5	3.8	4.5	4.4	3.0	4.3	178
2. Female	2.3	3.5	3.9	4.3	4.3	3.2	4.2	186
F	7.3***	0.2	0.8	2.1	0.9	3.1	0.3	
Soc. Sci. Courses in H.S.								
1. both Soc. and Psych.	2.5	3.3	4.1	4.5	4.2	2.7	4.2	24
2. Sociology only	2.3	3.5	3.9	4.8	4.5	3.3	4.2	45
3. Psychology only	2.6	3.4	3.9	4.2	4.0	3.1	4.4	44
4. Neither	2.5	3.5	3.8	4.3	4.4	3.0	4.3	240
F	0.7	0.2	0.9	2.4	1.3	1.3	0.5	
Soc. Sci. Courses in College								
1. Yes	2.5	3.5	3.8	4.3	4.3	3.1	4.3	194
2. No	2.5	3.5	3.8	4.5	4.4	3.1	4.2	160
F	0.0	0.0	0.0	2.3	0.7	0.0	0.2	

*Higher the score: the less the degree of social desirability, the less Sociology is like science, the less the degree of abstraction, the less like social work, the less biased, the more conservative, the less religious.

**$p < .05$ ***$p < .01$

TABLE 7

PRE- AND POST-TEST COMPARISONS*

	PRE-TEST	POST-TEST	t	N
Social Desirability	2.46	2.35	2.87**	396
Science	3.47	3.11	5.29***	397
Level of Abstraction	3.84	4.08	3.56***	392
Social Work	4.39	4.97	7.70***	392
Bias	4.31	4.51	2.59**	396
Liberal - Conservative	3.10	3.06	.48	395
Religiosity	4.20	4.42	3.09**	397

*Higher the score: the less the degree of social desirability, the less sociology is like science, the less the degree of abstraction, the less like social work, the less biased, the more conservative, the less religious.

**$p < .01$

***$p < .001$

TABLE 8

PRE- AND POST-TEST COMPARISONS VS. SELECTED STUDENT CHARACTERISTICS

CRITERION GROUP	SOCIAL DESIRABILITY PRE	POST	N
Age			
1. 18 or below	2.3	2.2	132
2. 19-20	2.5	2.5	158
3. 21-22	2.6	2.4	47
4. 23 or above	2.7	2.7	26
Major			
1. Business	2.8	2.7	92
2. Soc. Sci.	2.3	2.2	239
3. Pre-Prof.	2.2	2.1	19
4. Eng.	2.6	2.2	3
Sex			
1. Male	2.6	2.5	176
2. Female	2.3	2.3	185
Soc. Science Courses in High School			
1. both	2.5	2.3	24
2. Sociology	2.3	2.3	45
3. Psychology	2.6	2.4	44
4. neither	2.5	2.4	237
Subculture			
1. vocationalist	2.7	2.4	53
2. non-conformist	2.5	2.5	35
3. academic	2.5	2.3	105
4. collegiate	2.8	2.7	20
Area Lived in in High School			
1. farm or ranch	2.5	2.2	17
2. up to 15,000	2.3	2.4	75
3. up to 50,000	2.5	2.3	74
4. up to 500,000	2.5	2.3	71
5. metropolitan area	2.6	2.4	116
Greek Organization			
1. Yes	2.6	2.5	102
2. No	2.4	2.3	251
Social Science in College			
1. Yes	2.5	2.4	191
2. No	2.5	2.3	160

TABLE 8 (continued)

CRITERION GROUP	SCIENCE PRE	SCIENCE POST	N
Age			
1. 18 or below	3.4	3.1	132
2. 19-20	3.6	3.2	158
3. 21-22	3.5	3.0	47
4. 23 or above	3.5	3.0	26
Major			
1. Business	3.4	3.2	92
2. Soc. Sci.	3.5	3.1	239
3. Pre-Prof.	3.6	3.1	19
4. Eng.	3.5	3.8	3
Sex			
1. Male	3.5	3.0	176
2. Female	3.5	3.2	185
Soc. Science Courses in High School			
1. both	3.3	3.3	24
2. Sociology	3.5	3.0	45
3. Psychology	3.4	3.1	44
4. neither	3.5	3.1	237
Subculture			
1. vocationalist	3.6	3.2	53
2. non-conformist	3.4	3.0	35
3. academic	3.6	3.3	105
4. collegiate	3.6	3.2	20
Area Lived in in High School			
1. farm or ranch	3.8	3.4	17
2. up to 15,000	3.4	3.1	75
3. up to 50,000	3.5	3.2	74
4. up to 500,000	3.4	3.1	71
5. metropolitan area	3.5	3.1	116
Greek Organization			
1. Yes	3.5	3.4	102
2. No	3.5	3.0	251
Social Science in College			
1. Yes	3.5	3.3	191
2. No	3.5	3.0	160

TABLE 8 (continued)

CRITERION GROUP	LEVEL OF ABSTRACTION PRE	POST	N
Age			
1. 18 or below	4.0	4.2	132
2. 19-20	3.8	4.1	158
3. 21-22	3.9	4.1	47
4. 23 or above	3.6	3.7	26
Major			
1. Business	3.7	3.9	92
2. Soc. Sci.	3.9	4.2	239
3. Pre-Prof.	4.0	4.0	19
4. Eng.	4.8	5.0	3
Sex			
1. Male	3.8	4.0	176
2. Female	3.9	4.2	185
Soc. Science Courses in High School			
1. both	4.1	4.1	24
2. Sociology	3.8	4.1	45
3. Psychology	3.9	3.9	44
4. neither	3.8	4.1	237
Subculture			
1. vocationalist	3.8	3.8	53
2. non-conformist	3.9	4.2	35
3. academic	3.8	4.1	105
4. collegiate	3.9	3.9	20
Area Lived in in High School			
1. farm or ranch	4.2	4.6	17
2. up to 15,000	3.8	4.0	75
3. up to 50,000	3.7	3.9	74
4. up to 500,000	3.9	4.1	71
5. metropolitan area	3.8	4.1	116
Greek Organization			
1. Yes	3.8	4.0	102
2. No	3.9	4.1	251
Social Science in College			
1. Yes	3.8	3.9	191
2. No	3.8	4.3	160

TABLE 8 (continued)

CRITERION GROUP	SOCIAL WORK PRE	SOCIAL WORK POST	N
Age			
1. 18 or below	4.4	5.0	132
2. 19-20	4.4	4.9	158
3. 21-22	4.3	5.0	47
4. 23 or above	4.8	5.0	26
Major			
1. Business	4.5	4.7	92
2. Soc. Sci.	4.4	5.1	239
3. Pre-Prof.	4.4	4.8	19
4. Eng.	5.2	4.7	3
Sex			
1. Male	4.5	4.8	176
2. Female	4.3	5.1	185
Soc. Science Courses in High School			
1. both	4.5	4.8	24
2. Sociology	4.8	5.1	45
3. Psychology	4.2	4.9	44
4. Neither	4.3	5.0	237
Subculture			
1. vocationalist	4.4	4.6	53
2. non-conformist	4.6	4.9	35
3. academic	4.3	4.8	105
4. collegiate	4.4	4.5	20
Area Lived in in High School			
1. farm or ranch	4.4	5.1	17
2. up to 15,000	4.4	5.0	75
3. up to 50,000	4.3	4.8	74
4. up to 500,000	4.6	5.2	71
5. metropolitan area	4.3	4.9	116
Greek Organization			
1. Yes	4.3	4.8	102
2. No	4.4	5.0	251
Social Science in College			
1. Yes	4.3	4.9	191
2. No	4.5	5.0	160

TABLE 8 (continued)

CRITERION GROUP	BIAS PRE	BIAS POST	N
Age			
1. 18 or below	4.4	4.6	131
2. 19-20	4.4	4.5	156
3. 21-22	4.0	4.2	46
4. 23 or above	4.2	4.2	26
Major			
1. Business	4.3	4.4	92
2. Soc. Sci.	4.4	4.5	239
3. Pre-Prof.	4.0	4.5	19
4. Eng.	4.0	4.7	3
Sex			
1. Male	4.4	4.4	176
2. Female	4.3	4.5	185
Soc. Science Courses in High School			
1. both	4.2	4.6	24
2. Sociology	4.5	4.6	45
3. Psychology	4.0	4.6	44
4. Neither	4.4	4.4	237
Subculture			
1. vocationalist	4.3	4.5	53
2. non-conformist	4.0	4.0	35
3. academic	4.3	4.5	105
4. collegiate	---	4.3	20
Area Lived in in High School			
1. farm or ranch	4.5	4.6	17
2. up to 15,000	4.6	4.3	75
3. up to 50,000	4.4	4.7	74
4. up to 500,000	4.5	4.6	71
5. metropolitan area	4.1	4.4	116
Greek Organization			
1. Yes	4.2	4.4	102
2. No	4.4	4.5	251
Social Science in College			
1. Yes	4.3	4.5	191
2. No	4.4	4.5	160

TABLE 8 (continued)

CRITERION GROUP	RELIGIOSITY PRE	RELIGIOSITY POST	N
Age			
1. 18 or below	4.2	4.5	132
2. 19-20	4.3	4.4	158
3. 21-22	4.0	4.0	47
4. 23 or above	4.5	5.1	26
Major			
1. Business	4.3	4.4	92
2. Soc. Sci.	4.2	4.4	239
3. Pre-Prof.	4.4	4.4	19
4. Eng.	3.7	5.0	3
Sex			
1. Male	4.3	4.4	176
2. Female	4.2	4.4	185
Soc. Science Courses in High School			
1. both	4.2	4.5	24
2. Sociology	4.2	4.3	45
3. Psychology	4.4	4.6	44
4. neither	4.2	4.4	237
Subculture			
1. vocationalist	4.3	4.5	53
2. non-conformist	4.4	4.5	35
3. academic	4.3	4.4	105
4. collegiate	3.9	4.4	20
Area Lived in in High School			
1. farm or ranch	4.0	4.4	17
2. up to 15,000	4.0	4.3	75
3. up to 50,000	4.2	4.4	74
4. up to 500,000	4.4	4.6	71
5. metropolitan area	4.4	4.5	116
Greek Organization			
1. Yes	4.2	4.3	102
2. No	4.3	4.5	251
Social Science in College			
1. Yes	4.3	4.5	191
2. No	4.2	4.4	160