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Personal Epistemology and Personal Experience

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The world view of students was investigated by measuring covert causal assumptions about the relationship between the person and physical and social reality. The Attitudes About Reality Scale was designed to measure a philosophical dimension ranging between a belief in social constructionism and a belief in logical positivism. These personal epistemologies are related to demographic markers such as religion and birth order, and to experiential variables such as age and sociopolitical identification. Personal epistemology may predispose individuals to seek courses with a content that is consonant with their preexistent ideology. Epistemological position, however, appears changed only slightly by exposure to courses whose paradigmatic focus emphasizes a particular relationship between the person and reality.

Psychologists are becoming increasingly aware that the pursuit of knowledge is not value free. Personal experience can sensitize people to different aspects of problems and leads some to question the assumptions taken as self-evident by others lacking such experience. Correspondingly, demographic variables—seen as biographical markers of differential experience—are significantly correlated with personal epistemology. Personal epistemology may serve as one of the mechanisms by which past circumstances influence present judgments. The relationship between personal epistemology and personal experience is probably a reflexive one. Although the past influences the present, the past may also be reconstructed by present experience and new social identities. Such changes are marked by changes in personal epistemology.

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Cognitive social psychologists have amassed a great deal of evidence demonstrating that cognitive biases are pervasive (cf. Hamilton, 1979). To present this evidence in brief: It has been shown that people use much less information than is available to them (Major, 1980), selectively seek information that confirms their naive hypotheses rather than that which disconfirms them (Hansen, 1980), and reconstruct memories based on stereotypic beliefs about members of groups other than their own (Snyder & Uranowitz, 1978). Any individual who is distinctive within a group is liable to receive extreme judgments (Taylor, Fiske, Close, Anderson, & Ruderman, 1977); so-called normal behavior will be attended to and labeled as deviant when it is engaged in by a person who has received a socially deviant label (Langer & Imber, 1980). Erroneous relationships may be inferred and the beliefs maintained even when the initial evidential base has been totally discredited (Anderson, Lepper, & Ross, 1980). All this work is noteworthy because it demonstrates the mechanisms by which sexist and racist biases may be perpetuated even after repeated scholarly demonstrations that no major differences between groups exist.

All of these studies, however, concern person perception. They do not deal with individual variability in socially relevant ideologies nor with factors that lead to the construction of these different ideologies. Questions about what we know and how we know it are considered epistemological and have remained largely within the domain of philosophy. Only recently have psychologists attempted to measure epistemological frameworks and relate them to other psychological variables.

The Connection Between Personal Experience and Ideology

Most of the evidence that shows a connection exists between personal experience and ideological orientation has focused on individuals with a great deal of professional competence within the social sciences. In an extensive analysis of the relationship between theoretical orientation within psychology and the personal characteristics of psychologists, Coan (1979) analyzed the responses of 866 members of APA on a scale that differentiated between persons who hold a primarily objectivist viewpoint and those whose views are more subjectivist. He found that subjectivists reported personal backgrounds involving class, religious, or ethnic differences from the majority that made it more likely they had experienced a lack of accord with American society.

Similarly, Sherwood and Nataupsky (1968) found that the conclusions investigators reached about whether blacks are innately inferior to whites in intelligence could be predicted from biographical data about the investigators. Those who did not conclude that differences were due to innate factors were likely to be later born, and to have had a higher number of foreign-born grandparents, parents with fewer years of education, and lower undergraduate scholastic standing than those who reached a more biologically deterministic conclusion.

Scholars appear relatively unaware of the possibility that their theoretical orientation is connected to other aspects of their personal experience. In a pioneering study in this area, Pastore (1949) analyzed the writings of 24 English and American scientists prominent in the nature–nurture controversy during 1900–1940. He found that 11 of the 12 in each group, classified as either hereditarian or environmentalist, could correspondingly be classified as either conservative or liberal-radical in their other attitudes. However, the scientists were largely unwilling to accept the evidence of a connection between their political loyalties and their scientific thinking when informed of Pastore's conclusions.

Kimble (1984) has suggested that differences in ideology and values within psychology partially reflect intragroup socialization by peers within the profession. Individuals with a strong divisional tie within APA appear to endorse more extreme views on a science-humanism dimension than those who do not have a strong divisional affiliation. Additionally, according to Kimble, divisional modes of thought tend to be quite different from one another.

It is likely, however, that individuals formulate their professional identities partly on the basis of early differences in their epistemological framework. Thus, King (1980) found that students in introductory psychology courses hold objectivist views similar to those found among professionals in the field. These views were not found to change following exposure to various courses in psychology nor throughout the college years. King has suggested that students come to the discipline with a consistent, firmly fixed system of values. These values appear founded upon a broader base than mere exposure to disciplinary concerns.

Such research suggests that the way people formulate questions about, and seek solutions to, social problems is influenced by their early personal experience. It is likely that certain personal experiences sensitize individuals to aspects of reality that are seen as unimportant by those lacking such experiences. Differences in epistemological models of reality would help explain why biologically determinist models of racial differences in intelligence began to be discarded by psychology as increasing numbers of members of ethnic minority groups entered the field (Samelson, 1978). Similarly, the increasing number of women researchers may have been partially responsible for altering paradigmatic conceptualizations about sex-related differences (Unger, 1983).

Psychology as a Dialectic

Buss (1975, 1978) has argued that psychology, as a discipline, has shifted back and forth between two basic world views involving the relationship between individuals and the forces that shape them. Buss defined "world view" as a set of implicit causal relationships shared across apparently disparate conceptual domains. This deep belief structure is largely nonconscious and unexamined.

Buss characterized the basic psychological paradigms in terms of two con-

trasting prototypic statements: (1) Reality constructs the person and (2) the person constructs reality. Buss argued that psychological revolutions represent a shift from one to the other paradigm. Buss sees the most recent shift in psychology as one from behaviorism to cognitivism. Behaviorism represented a conceptualization that stressed the ways in which various factors in a person's past or present determine his or her actions. The new "cognitivism" emphasizes the way in which the individual's motivations and belief structures influence what aspects of the psychological world are attended to, remembered, and used.

The "reality constructs the person" prototype is probably closely related conceptually to Coan's (1979) concept of objectivism and may also be related to a belief in biological and physical determinism. It appears akin to an epistemology based upon logical positivism—a view that "reality" is relatively fixed and objectively accessible. Logical positivism also states that meaning is operationally defined and therefore replicable across social contexts, and that reality will be increasingly uncovered by the use of more and more refined measurement techniques.

Conversely, "the person constructs reality" prototype is similar to Coan's subjectivism and indicates a more relativistic, reflexive view of causality. It is closely related to the social constructionist orientation as recently discussed by Gergen (1985). According to this view, meaning is defined by our linguistic and conceptual categories; these categories are the product of a social-consensus process that is neither predictable nor progressive in nature. This view "invites one to challenge the objective basis of conventional knowledge" (Gergen, 1985, p. 267) and to focus instead upon processes of negotiated understanding as the critical events through which to analyze reality as we know it. The degree to which a particular form of understanding prevails or is sustained across time is not seen as fundamentally dependent upon its empirical validity.

The Present Study

The purpose of the present study was to ascertain whether individuals who are not yet professionally socialized can be distinguished in their world views. A dialectic similar to that which Buss (1978) suggested for psychology as a whole was used as the conceptual basis for such a discrimination. For this study, a paper-and-pencil scale called the "Attitudes About Reality Scale" (AAR) was constructed.

Background

Conceptual structure of the scale. The scale was constructed in such a way that one end of the scale would indicate a belief in the social constructionist (SC)

position, and scores at the other end would indicate support for the logical positivist (LP) position. For example, people who support the LP position would:

1. show a predominant tendency to concur with statements that indicate reality is stable, irreversible, and deterministic;
2. concur with statements indicating biological or intrapsychic (rather than environmental or societal) causality,
3. believe in individualistic rather than societal determination of power and status,
4. demonstrate a general acceptance of the status quo, and
5. believe that science as an aspect of society works well and that success is a result of merit.

On the other hand, people who support the social constructionist (SC) position would:

1. show a predominant tendency to concur with statements that indicate reality is changeable and largely a matter of cultural and historical definition,
2. believe in environmental causality for many social problems,
3. see control by factors outside oneself as an important dynamic in the way society works,
4. be less content with the status quo and less likely to view negatively individual efforts toward social change, and
5. not be convinced that meritocracy works in science as well as in other aspects of society.

Associations with demographic variables. A second component of this research was to determine whether attitudes about reality are meaningfully associated with demographic or background characteristics. In other words, does personal epistemology reflect experience as a member of certain social groups? If so, we may infer that early experiences help shape epistemology. The final component of the research was investigation of the extent to which a person's world view is changed by exposure to particular college courses.

Given the results from previous research (Coan, 1979; Sherwood & Nataupsky, 1968), one would expect that those who have experienced a relatively problem-free relationship with society would be more likely to hold the logical positivist viewpoint. Such people may see causality as running largely in one direction: responses to past and present stimuli direct present and future actions.

Members of groups who have encountered problems with society would be more likely to hold a social constructionist point of view. For these groups, there would have been a lack of relation between their actions and the outcomes of

those actions. However, the extent to which individuals alter their viewpoint about reality due to a lack of accord between output and outcome is probably related to whether they attribute personal or social responsibility for their experiences. Those who identify themselves as members of less privileged or more marginal groups should possess a personal epistemology that acknowledges the ability of individuals to renegotiate definitions of reality and, by so doing, change the extent to which circumstances control their behavior.

Gergen (1985), for example, has argued that feminists have been more ready than other groups within psychology to criticize its empiricist base and to construct models based upon a social constructionist viewpoint. We would expect, therefore, that individuals enrolled in courses on women's issues would, independent of sex, have initially more socially constructionist views than individuals enrolled in comparable-level psychology courses without a sociopolitical focus. A number of other demographic variables found to be important in previous studies (e.g.,Sherwood & Nataupsky, 1968) were also examined. These variables encompassed social class, familial structure, background variables, and present life values such as religious and political convictions.

Method

Subjects and procedure. Subjects were 307 students in various psychology classes at Montclair State College. The sample was 81% female. Students were asked to fill out the AAR during class time. One hundred and one students completed the scale twice: at the beginning of the term and at the end of the term.

Instrument. The AAR was developed to assess the range of attitudes on the SC and LP dialectic outlined in the Introduction. Items were developed through examination of the writings of, and through discussions with, social activist scholars who appeared to support the social constructionist viewpoint (Unger, 1984). The following areas were considered relevant content domains that would be affected by the SC-LP dimension and that served as the contextual sources for the initial item construction:

1. the source of power (whether conferred by society or resulting from personal characteristics),
2. causality of differences between groups (whether primarily environmental or primarily biological),
3. the relationship between the individual and society (the legitimacy and efficacy of individual efforts to produce social change as opposed to approval of the status quo), and
4. the role of science as a major force in today's society (whether science is subjective and relativistic, or objective and value-free).

Although the scale was constructed as a series of declarative statements with which individuals might agree or disagree, a number of items were phrased in a deliberately more ambiguous manner than is usually the case for Likert-type scales. Such items were designed to evoke different responses depending upon the epistemological framework individuals bring with them to the task. Thus, an item such as "The facts of science change over time" might be answered differently, depending upon whether a person believes "facts" are universal truths or consensual agreements. Similarly, an item such as "If one works hard at solving a problem, one can usually find the answer" may provoke differing responses, depending upon whether the individual believes problems always have one best solution.

An initial pool of 85 items was reduced to 40 items through examination of the pattern of responses of a pilot sample of 73 Montclair State College students. Items that did not correlate significantly with the scale as a whole were discarded. For the present study, respondents were asked to indicate their level of agreement or disagreements with each of the 40 items (see Appendix A). Each item was scored on a 7-point scale, with low scores indicating an endorsement of the SC position, and high scores indicating support for the LP position. The 40-item scale has a potential range of 40 (indicating an extreme SC position) to 280 (representing an extreme LP position). In addition to the 40-item scale, each survey requested information about the student's major, grade point average, year in school, age, marital status, birth position, mother's and father's occupations, religion, political identification, and whether or not the student was an active member of specified sociopolitical groups.

Results

Psychometrics of the scale. The distribution of total scale scores for the full sample was basically normal, with a mean of 141.4, a standard deviation of 16.6, and a range from 78 to 179. The test–retest reliability for a subsample of 105 respondents over a three-month period for the 40-item scale was .73. The scale had an internal consistency (coefficient alpha) of .72 for the entire sample. Subsamples of respondents determined a priori did not show significantly different patterns of internal consistency.

The scale was examined to determine whether or not there was a unitary SC-LP dimension. A factor analysis based on alpha-imaging and using a Kaiser normalization criterion resulted in four factors accounting for 30% of the variance. Results of this factor analysis may be found in Appendix B. However, scales formed on the four-factor solution did not have acceptable internal consistencies (alphas between .18 and .62), and their use as individual scales could not be justified. Investigation of factor solutions for various identifiable sub-

groups did not provide solutions that were more interpretable than that for the entire sample.

An item analysis of the 40-item scale indicated that a reduced scale of 28 items had an internal consistency of .80, compared to a .72 internal consistency for the full scale. The 28 items of the reduced scale are indicated by asterisks in Appendix A.

In sum, these analyses indicate the scale should be used as a unitary scale. For the analyses reported below, the full 40-item scale was utilized, although future research might investigate the possibility of using the reduced scale.

Feminism and AAR score. Of the sample, 155 students were enrolled in courses that have a "feminist ideology"—either the psychology of women, or in a course titled "Today's Woman." The remaining students were enrolled in comparable-level psychology courses. An analysis of variance of the scale scores showed that there was a significant difference in the scale scores between the groups in the feminist courses and the other students. [$F(1,301) = 22.05$, $p < .001$, $\bar{X}_{\text{fem}} = 136.7$, $\bar{X}_{\text{nonfem}} = 146.4$]. Nine students who identified themselves as active members of a feminist group had much lower scores than others in these courses ($\bar{X} = 127.8$).

Approximately 30% of the students had data available on the scale at two points in time: the beginning of the course and the end of the course (all of these courses were taught by the same faculty member). It was hypothesized that a feminist ideology would be associated with the social constructionist position. Thus, a course that imparts a feminist ideology should bring about a corresponding decrease in AAR scores. Average scores decreased between the beginning and end of all courses; scores in the feminist courses decreased significantly. The degree of change was 6.9 points in the feminist courses ($n = 47$, $p < .05$), and only 3.0 points in the nonfeminist courses ($n = 54$, $p > .05$).

Other social attitudes and AAR score. An ANOVA between indicated political party preference was significant [$F(5,289) = 5.32$, $p < .001$]. Multiple comparisons showed a significant difference between those identifying themselves as Republican/Conservative ($\bar{X} = 148$), and Liberal ($\bar{X} = 130$). Religious beliefs also mattered. An ANOVA using religious affiliation showed a difference among the groups on total scale scores [$F(3,276) = 7.05$, $p > .001$]. The only multiple comparison that was significant was between Catholics ($\bar{X} = 144$) and those indicating no religious affiliation ($\bar{X} = 128$). An ANOVA using the indicated strength of religious conviction also showed a significant difference [$F(3,299) = 2.72$, $p < .05$). Multiple comparisons showed no significant differences based on strength of conviction between any two groups; the tendency was for a higher degree of conviction to be associated with a higher scale score.

Demographic variables. Grade point average, age, and birth order also related significantly to AAR scores. Sex, parental occupation, number of foreign-born grandparents, and educational level did not. More specifically, grade point average and AAR scores correlated ($r = -.31, p < .001$): The higher the grade point average, the more constructionist the person.

There was a statistically significant negative correlation between AAR score and age for five age categories ($r = -.40, p < .001$). Older students scored in a more socially constructionist direction. It is not clear from the nature of this sample the extent to which age is the directly relevant variable, because people who return to school in middle age may be nontraditional in a variety of ways. Concerning birth order, first-born children tended to score in a more logical positivist direction than did later-born individuals ($r = .11, p < .05$). Concerning sex, male subjects ($n = 55$) had a mean score of 146.9 and females ($n = 262$) had a mean score of 140.2. This sex difference is not statistically significant when the course in which the student was enrolled is taken into account.

The apparent difference may be a function of the differential distribution of males and females in the two kinds of course—many fewer men took feminist courses. There was no significant difference between males and females within each type of course; men enrolled in women's studies courses had lower scores than men in comparable-level psychology courses.

Implications

Our data on the Attitudes about Reality Scale indicate that college students possess a rather consistent, coherent, and stable epistemological structure that extends across a number of apparently diverse conceptual domains. It also appears that this underlying structure may be characterized in terms of two philosophies involving the nature of the relationship between the person and reality—logical positivism and social constructionism.

Our findings about undergraduates agree with those of investigations that focus on the theoretical concerns of professional scholars. The dimensions that emerged using the AAR parallel epistemological positions identified, using other means, among social scientists (Coan, 1979; Kimble, 1984; Krasner & Houts, 1984; Pastore, 1949). Our findings also agree with those of King (1980), who used Coan's more complex Theoretical Orientation Scale. King discovered that differences in epistemological framework exist before individuals are exposed to disciplinary socialization.

Individuals may place themselves in particular intellectual arenas because of their preexisting causal ideology. We found that undergraduates enrolled in courses on women's issues appear more predisposed to a socially constructionist world view than are undergraduates enrolled in comparable-level courses with less emphasis on social issues. Students change still further in the direction of

social constructionism following courses with a feminist orientation, although the change is not great. A similar result at a different college has been reported by Howe (1985).

Recognition of personal epistemologies can help explain why scientific paradigms take so long to change (Kuhn, 1962). Scientific paradigms reflect shared personal epistemologies, and personal realities resist change. Controversies about "facts" may be more sociological than scientific. They may be more a matter of interpretation than of conflicting evidence (Pastore, 1949). For example, the assumption of whether a racial or sexual entity is mainly a biological or a social group is fundamental both politically and scientifically. Thus the shift from a biological position (the study of individual differences) to a social position (sex or race as stimulus variables) was a necessary first step in the establishment of new paradigms dealing with these issues (Samelson, 1978; Unger, 1983).

Our investigation of personal epistemologies in "ordinary people" extends the existing literature. Students, no less than their professors, selectively expose themselves to knowledge about the world. In general, our results support the conclusion that individuals who identify themselves with groups that have experienced a problematic relationship with American society are more likely to develop a world view that holds that multiple interpretations of a single reality are equally valid. These data are consistent with findings on the relationship between biographical markers of marginal social status and subjectivist environmentalist positions among professional psychologists (Coan, 1979; Sherwood & Nataupsky, 1968).

Our study further indicates that the effect of group membership on epistemological position is probably mediated by the degree to which one identifies oneself as a member of a social group. Thus feminists, who identify with women as a deprived group, appear to have a particularly strong disposition to endorse the view that reality is socially constructed. Feminist students are similar to women actively engaged in feminist scholarship in their low scores on the Attitudes about Reality Scale (Unger, 1984/1985).

The present study suggests that individual differences in epistemological position among ordinary people can be measured. And it further suggests that personal epistemology may predispose individuals to seek courses with a content that is consonant with their preexistent ideology. Although such courses may further alter a person's world view, the amount of change produced is small in comparison to the epistemological consistency that persists over time.

People do not often appear aware of the extent to which they create the reality with which they deal. An important area for exploration remains. We need to learn more about the extent to which covert ideology impedes the acquisition of information that is seen as self-evident by others with a different epistemological perspective.

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Appendix A. Attitudes about Reality Scale (@ Unger, 1983)[a]

*1. Who has power is a central issue in understanding how society works. (RS)
*2. It is maladaptive to refuse to conform to the demands of society.
3. Science has underestimated the extent to which genes affect human behavior.
4. Some noncomformity is necessary for social change to occur. (RS)
5. The way scientists choose to investigate problems is influenced by the values of their society. (RS)
*6. If one works hard at solving a problem, one can usually find the answer.
*7. If everyone learns what is important to them, the world would take care of itself.
*8. Most sex differences have an evolutionary purpose.
*9. People who achieve success usually deserve it.
*10. The saying "You shall know the truth and the truth shall make you free" is still valid today.
*11. The more technology we develop the better our science will be.
*12. Accidental solutions to problems are very rare.
*13. At the present time, people are recognized for their achievements regardless of their race, sex, or social class.
*14. People cannot be trained to be creative—they are either born that way or not.
*15. People who demand social change are usually those who have been ineffectual in present society.
16. The facts of science change over time. (RS)
*17. The United States has the most egalitarian society in the world.
*18. Once a scientific fact is discovered it remains part of that science from then on.
*19. We communicate much more information to each other than we are aware of doing. (RS)
*20. Personality characteristics account for most differences in human behavior.
*21. Important ideas are most likely to originate from prestigious institutions.
22. Effort can often make up for an absence of talent in an area.
*23. It is more important to be liked than to be powerful.
*24. Biological sex, sex role, and sexual preference are highly related to each other in normal people.
*25. The mother–infant relationship is a key to understanding adult behavior.
*26. People who are part of minority groups should not have to worry about other people in these groups who are less successful than they are.
27. Unconscious motivations are very important for understanding human behavior. (RS)
28. Deviance is not a particular kind of behavior, but a perception by others that that behavior is socially unacceptable. (RS)
*29. Society must protect itself from those who do not accept its rules.
30. Famous people's research is frequently cited in order to lend prestige to the findings of less renowned researchers. (RS)
*31. Most people would cooperate with each other if only they understood that everyone would benefit by such actions.
*32. Scientific merit is determined by the excellence of the work done.
33. It is important to decrease the distance between the "real world" and the scientific laboratory. (RS)
34. A great deal can be learned about human behavior by studying animals.
*35. Those who are nonconformists during one period of history are often found to be innovators by future eras. (RS)
36. The acceptability of evidence is related to the importance of the person who discovers it. (RS)
*37. It is better not to know too much about things that cannot be changed.
*38. Physiological differences limit the degree to which males and females can learn to be similar to each other.
39. People who have the least to lose in a relationship will be more likely to get their way in that relationship. (RS)
*40. Most social problems are solved by a few very qualified individuals.

[a]Each item is answered on a 7-point scale, from *Agree almost completely* (7) to *Disagree almost completely* (1). Items marked by (RS) are scored in the reverse direction. Items marked with an asterisk (*) comprise the shorter 28-item scale.

Appendix B. Alpha Factoring of Attitude about Reality Scale[a]

Item	Factor loading			
	I	II	III	IV
20	.57	−.02	.07	.18
32	.54	.00	.23	.03
18	.50	−.01	.05	.12
6	.39	.03	.04	−.16
11	.37	.18	.34	.12
29	.35	.05	.03	.21
25	−.34	.10	−.07	.05
35	.09	.55	.13	.18
19	.01	.44	−.12	.10
28	.04	.39	−.06	.08
5	.09	.39	.01	−.04
27	−.03	.38	−.20	.13
10	−.05	−.08	.68	.03
9	.29	−.08	.56	−.07
38	−.01	.05	−.07	.56
37	.05	.23	.11	.41
14	−.03	.04	.11	.34
24	.24	−.12	.30	.32

[a]Only items that loaded significantly on one of the four factors are listed.