

# College Sophomores in the Laboratory: Influences of a Narrow Data Base on Social Psychology's View of Human Nature

David O. Sears

University of California, Los Angeles

For the 2 decades prior to 1960, published research in social psychology was based on a wide variety of subjects and research sites. Content analyses show that since then such research has overwhelmingly been based on college students tested in academic laboratories on academiclike tasks. How might this heavy dependence on one narrow data base have biased the main substantive conclusions of sociopsychological research in this era? Research on the full life span suggests that, compared with older adults, college students are likely to have less-crystallized attitudes, less-formulated senses of self, stronger cognitive skills, stronger tendencies to comply with authority, and more unstable peer group relationships. The laboratory setting is likely to exaggerate all these differences. These peculiarities of social psychology's predominant data base may have contributed to central elements of its portrait of human nature. According to this view people (a) are quite compliant and their behavior is easily socially influenced, (b) readily change their attitudes and (c) behave inconsistently with them, and (d) do not rest their self-perceptions on introspection. The narrow data base may also contribute to this portrait of human nature's (e) strong emphasis on cognitive processes and to its lack of emphasis on (f) personality dispositions, (g) material self-interest, (h) emotionally based irrationalities, (i) group norms, and (j) stage-specific phenomena. The analysis implies the need both for more careful examination of sociopsychological propositions for systematic biases introduced by dependence on this narrow data base and for increased reliance on adults tested in their natural habitats with materials drawn from ordinary life.

Every science has its own methodological idiosyncracies. Pharmacological research relies heavily on the white rat, research on new birth control techniques is most commonly conducted on non-American women, astronomers use telescopes, and psychoanalysts depend on the self-reports of affluent self-confessed neurotics. Ordinarily, such researchers trust that they have a reasonably good grasp of the biases introduced by their own particular methodological proclivities and that they can correct their conclusions for whatever biases are present. But conclusions can be so corrected only if the direction and magnitude of bias can be estimated on the basis of reliable empirical

evidence. Such systematic evidence may not always exist, or it may be hard to find, or it may not even be sought. The danger then is that biases resulting from overreliance on a particular data base may be ignored, and the conclusions of the science may themselves be flawed.

This article suggests that social psychology has risked such biases because of its heavy dependence during the past 25 years on a very narrow data base: college student subjects tested in the academic laboratory with academiclike materials. My concern is that overdependence on this one narrow data base may have unwittingly led us to a portrait of human nature that describes rather accurately the behavior of American college students in an academic context but distorts human social behavior more generally.

This article begins by documenting the growth of social psychology's heavy reliance on this narrow data base. It then proceeds to describe the biases this reliance may have introduced into the central substantive conclusions of the field. These biases could in theory be assessed in two ways. One way is through systematic replication of empirical findings using other populations and situations. In practice, however, these data do not now exist, so this is not a practical approach. The second way involves estimating these biases both from the known differences between our data base and the general population in everyday life, and from the known effects of those differences. That will be my approach, using as examples research on several of the most important topics in the subfields of attitudes and social cognition. This part of the argument is frankly speculative. As a result it should not stimulate wholesale abandonment of our familiar, captive, and largely friendly data base. I would hope,

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Correspondence concerning this article should be addressed to David O. Sears, Department of Psychology, University of California, Los Angeles, California 90024.

however, that it might generate some serious thought about how this narrow data base has affected our major substantive conclusions. I doubt that they are flat out wrong. But taken together as a cumulative body of knowledge presented by the field of social psychology, they may give quite a distorted portrait of human nature.

### A Narrow Methodological Base

The first great burst of empirical research in social psychology, which occurred in the years surrounding World War II, used a wide variety of subject populations and research sites. Cantril (1940) and Lazarsfeld, Berelson, and Gaudet (1948), for example, investigated radio listeners and voters. Hovland, Lumsdaine, and Sheffield (1949), Merton and Kitt (1950), Shils and Janowitz (1948), and Stouffer, Suchman, DeVinney, Star, and Williams (1949) studied soldiers in training and combat, whereas Lewin (1947) and Cartwright (1949) looked at the civilian end of the war effort, and Bettelheim and Janowitz (1950) at returning veterans. Deutsch and Collins (1951) and Festinger, Schachter, and Back (1950) investigated residents of housing projects, and Coch and French (1948) studied industrial workers in factories. Adorno, Frenkel-Brunswick, Levinson, and Sanford (1950) investigated authoritarianism in a wide range of subjects that included merchant marine officers, veterans, as well as members of unions, the PTA, and the League of Women Voters. Even Leon Festinger, in some ways the godfather of laboratory-based experimental social psychology, based his best-known book, *A Theory of Cognitive Dissonance* (1957), on data bases ranging from the analysis of rumors in India and the participant-observation of a millennial group to carefully crafted laboratory experiments on college students. The conventional methodological wisdom of the era was that the researcher must travel back and forth between field and laboratory (and their differing indigenous populations) in order to bracket properly any sociopsychological phenomenon.

The subsequent generation of social psychologists created the experimental revolution. They were much more thoroughly committed to the laboratory experiment and, inevitably, as thoroughly committed to the use of undergraduate college students (the well-known "college sophomore") as research subjects. By the 1960s, this conjunction of college student subject, laboratory site, and experimental method, usually mixed with some deception, had become the dominant methodology in social psychology, as documented in several systematic content analyses of journal articles (Christie, 1965; Fried, Gumpfer, & Allen, 1973; Higbee & Wells, 1972).

Like all revolutions, this one immediately came under attack. There was concern about such internal biases as demand characteristics, experimenter bias, and evaluation apprehension. Others demanded more "relevant" and applied research that would more directly address "real world" problems. Both critiques encouraged broader methodological practice. But the 1970s also witnessed the rapid development of research modeled on work in cognitive psychology that used brief, emotionally neutral laboratory experiments on college students. Paper-and-pencil role-playing studies became especially common.

The net effects of these conflicting developments are best assessed with a systematic inventory of actual methodological

practice. Hence we coded, for subject population and research site, articles published during 1980 in the three mainstream outlets for sociopsychological research, *Journal of Personality and Social Psychology* (JPSP), *Personality and Social Psychology Bulletin* (PSPB), and the *Journal of Experimental Social Psychology* (JESP). Subject populations were coded into four categories: (a) recruited directly from a North American undergraduate psychology class; (b) other North American undergraduates; (c) other students (mainly primary and secondary school students or college students in other westernized societies); or (d) adults. The site of the research was coded as either (a) laboratory or (b) natural habitat. The latter was interpreted quite liberally to include either a physical site in the individual's ordinary life (such as college gymnasiums and dormitories, beaches, military barracks, a voter's living room, or airport waiting rooms) or even self-report questionnaires concerning the individual's daily life and activities (e.g., personality, political and social attitudes, or ongoing interpersonal relationships) no matter where they were administered.<sup>1</sup>

American college undergraduates were overwhelmingly the subject population of choice. In 1980, 75% of the articles in these journals relied solely on undergraduate subjects, almost all from the United States. Most (53%) stated that they used students recruited directly from undergraduate psychology classes, but this is probably an underestimate because many studies relying on undergraduates do not further specify their origin. All totaled, 82% used students of one kind or another. By far the majority (71%) were based on laboratory research. Considering these two dimensions jointly, 85% of the articles used undergraduates and/or a laboratory site; only 15% used adults in their natural habitats or dealt with content concerned with adults' normal lives. All of this is displayed in Table 1.

To provide more current data, all of the issues of these journals were again coded in 1985 (except for the personality section of JPSP, because of some dispute over its editorial policies). Table 2 shows that use of undergraduates in the laboratory had diminished only marginally; 83% of the articles coded used students, 74% American undergraduates, 78% the laboratory, and 67% undergraduates in the lab; the latter overwhelmingly remained the data base of choice. The one substantial change occurred in the Interpersonal Relations section of JPSP, which showed an increase in studies of adults in their natural habitats, from 14% to 26%. But even there, the majority (55%) still used undergraduates in the laboratory.<sup>2</sup>

The later discussion of the implications of this pattern will emphasize the areas of attitudes and social cognition, because they are the areas with which I am most familiar. Table 1 shows

<sup>1</sup> Articles relying on more than one study were given a summary rating on the basis of the majority of their studies. In general, ambiguous decisions were biased in the direction of underestimating the use of college students in the laboratory. A reliability check was made by having a second coder (the author) code three issues of JPSP. Both coders agreed on subject population and research site in 97% and 88% of the cases, respectively, with no particular pattern to the disagreements. Since reliability was acceptably high, the first coder's judgments were used in all cases.

<sup>2</sup> If the study, rather than the article, is used as the unit of analysis, the codeable *N* for Table 2 rises from 178 to 268, and the results only

Table 1

*Subject Population and Research Site in Social Psychologists' 1980 Journal Articles*

Code category	JPSP				JPSP authors' other articles					
	% Atts. & Soc. Cog.	% Interp. Rels. & Grp. Proc.	% Pers. Proc. & Individ. Diff.	Total %	% PSPB	% JESP	Total %	% in JPSP, PSPB, or JESP	% in other journals	Total %
Subject population										
American undergraduates	85	78	51	70	81	81	75	84	66	72
Psychology classes	56	56	39	52	53	57	53	50	43	46
Other	29	22	12	18	28	24	21	34	23	26
Other students	8	3	19	12	0	8	7	8	12	11
Adults	8	19	30	18	19	11	18	8	22	17
Research site										
Laboratory	88	69	44	64	75	95	71	97	78	85
Natural habitat	12	31	56	36	25	5	29	3	22	15
Combined										
Undergraduates/lab	83	64	32	58	73	78	64	84	59	68
Adults/natural habitat	8	14	28	17	16	3	15	3	11	9
Number of articles										
Total	53	36	59	198	93	42	333	75	162	237
Empirical and codeable	52	36	57	191	73	37	301	62	116	178

Note. JPSP = *Journal of Personality and Social Psychology*. The three sections of JPSP are Attitudes and Social Cognition, Interpersonal Relations and Group Processes, and Personality and Individual Differences. PSPB = *Personality and Social Psychology Bulletin*. JESP = *Journal of Experimental Social Psychology*. The base for all percentages includes only articles shown in the last row (empirical, codeable, and available in the library). Columns 4 and 5-7 include all such 1980 journal articles; columns 1-3 include all such journal articles for April through December 1980, the first 9 months of the tripartite division of the journal; and columns 8-10 are based on all such articles obtained from entries given in the 1980 *Psychological Abstracts*. Some articles could not be located (8%), others could not be coded (3%), and still others were nonempirical articles (15%). The percentages presented exclude all these from the base.

that articles in the Attitudes and Social Cognition section of JPSP relied as much if not more on college students in the lab than did the others. Similarly, Findley and Cooper (1981) reported that the attitude change chapters of social psychology texts were about at the median in use of college students. So research on attitudes and social cognition is as likely as any other area of social psychology to be vulnerable to whatever problems these methodological practices introduce.

#### *A Flight From Mainstream Journals?*

This reliance on laboratory studies of college students might, however, only describe these mainstream journals and not social psychologists' general research practice. Perhaps the editorial policies of these particular journals are dominated by a conformist in-group wedded to this "traditional" mode of research. Or, these journals are known to be the most selective, and so they might tend to reject the somewhat "softer" research that is done in real-world settings on less captive (and less compliant) subject populations. Or perhaps researchers wishing to communicate with colleagues who also conduct nonmainstream research might reach them more directly through more specialized journals; for example, it may be easier to reach public opinion researchers through *Public Opinion Quarterly* than through

JPSP. It is possible therefore that social psychologists' research published elsewhere actually uses a broader range of methodologies than is apparent from inspecting these three journals.

To check this, we canvassed articles written by social psychologists that had been published in other journals. We drew a representative sample of social psychologists who had published in JPSP, consisting of the one individual listed in each 1980 JPSP article as the person to be contacted for reprints (on the grounds that he or she would be the one most likely to have a research career). We then coded the methodological characteristics of all the articles these social psychologists had published elsewhere in a comparable time frame—specifically, all articles listed for each such 1980 JPSP "reprint author" in the 1980 *Psychological Abstracts*.

At first glance, these other articles seem to display social psychologists at work in quite a different manner, because JPSP authors also publish in a spectacular variety of other journals. In the 1980 *Psychological Abstracts*, they generated no fewer than 237 other entries that appeared in no fewer than 128 different journals. These ranged from such fraternal outlets as the *European Journal of Social Psychology* to distant relatives, arguably even of the same species, such as *Behavior and Neural Biology* or the *Journal of Altered States of Consciousness*. This variety alone might suggest that, once away from the staid scrutiny or narrow conformity pressures of their peers, social psychologists may be using strange and wonderfully different kinds of data bases.

In fact, however, even in their research published in these more distant outlets, social psychologists mainly used college student subjects in laboratory settings. The last column of Table

become stronger: 84% (rather than 83%) used students, 76% (rather than 74%) American undergraduates, 80% (rather than 78%) the lab, and 69% (rather than 67%) both; only 10% (rather than 13%) used adults in their natural habitats.

Table 2  
*Subject Population and Research Site in Social Psychologists' 1985 Journal Articles*

	<i>JPSP</i>				Total %
	% Atts. & Soc. Cog.	% Interp. Rels. & Grp. Proc.	% <i>PSPB</i>	% <i>JESP</i>	
Subject population					
American					
undergraduates	81	58	79	82	74
Psychology classes	55	40	61	53	51
Other	26	19	18	29	23
Other students	8	9	6	12	8
Adults	11	32	16	6	17
Research site					
Laboratory	75	66	84	91	78
Natural habitat	25	34	16	9	22
Combined					
Undergraduates/lab	70	55	71	76	67
Adults/natural habitat	8	26	11	3	13
Number of articles					
Total	58	54	40	35	187
Empirical and codeable	53	33	38	34	178

Note. *JPSP* = *Journal of Personality and Social Psychology*. The two sections of *JPSP* are Attitudes and Social Cognition and Interpersonal Relations and Group Processes. *PSPB* = *Personality and Social Psychology Bulletin*. *JESP* = *Journal of Experimental and Social Psychology*. The base for all percentages includes only articles shown in the last row.

1 shows that 72% of these other articles used North American undergraduates as subjects, a figure slightly higher than the 70% that held in the original sample of the same authors' articles in *JPSP* (column 4). Use of both college student subjects and the laboratory setting was more common in these social psychologists' other articles (68%) than in their original *JPSP* articles (58%). Viewed from the opposite perspective, only 9% of their other articles used adults in their natural habitat, whereas 17% of their *JPSP* articles had.

This continuity of methodological practice could simply reflect the fact that many of these other articles themselves had appeared in mainstream outlets. Indeed half of these other articles had appeared in the basic social-personality journals (mostly in *JPSP*, *JESP*, and *PSPB*, with the rest scattered through 11 other journals of similar focus). Another 21% appeared in basic psychological journals outside of the social-personality area (in experimental psychology, psychobiology, and developmental). Only 11% appeared in applied social psychology journals (on health, the environment, public opinion, women's issues, and politics), and 17% in other applied psychology journals (including educational and clinical psychology). But the other articles published outside of the basic social psychology journals also relied primarily on undergraduate subjects in the laboratory (78%); only 11% investigated adults in their natural habitat (Table 1, column 9).

In short, wherever they publish, social psychologists seem to publish laboratory research on college students. A dispositional, rather than a situational, attribution seems most appropriate for social psychologists' methodological proclivities.<sup>3</sup>

## Historical Trends

Content analyses show that articles published in mainstream social psychology journals during the immediate postwar years relied heavily on adults. But the proportion of articles published in the *Journal of Abnormal and Social Psychology* that relied on college student subjects more than doubled from 1949 to 1959 (Christie, 1965). And it has held steady ever since. American college students have been the primary subject population for at least 70% of the articles in *JPSP* in every sounding done since the early 1960s, without much variation: 73% in 1962–1964, 70% in 1966–1967, 76% in 1969, 77% in 1970–1972, 72% in 1979, 70% in 1980, and 70% in 1985 (see Higbee, Lott, & Graves, 1976; Higbee, Millard, & Folkman, 1982; Higbee & Wells, 1972; Schultz, 1969; Smart, 1966; and Tables 1 and 2). In *JESP*, 80% of the articles in 1969, 81% in 1980, and 82% in 1985 relied on American college students (see Higbee et al., 1976; and Tables 1 and 2).

Also, there has not been any drop in the use of the other aspects of this now traditional methodology in social psychology. About three fourths of the articles in *JPSP* were using the laboratory by the late 1960s (Fried et al., 1973). As Tables 1 and 2 show, this remains true today: Of mainstream journal articles in 1980, 71% used the lab; also, 85% of *JPSP* authors' other articles and even 78% of their articles published in nonmainstream journals were laboratory-based. In 1985, 78% of the articles coded were laboratory-based. Potter (1981) reported the same constancy in laboratory use in British journal articles.

## Prestigious Research

These data only describe the subjects used in representative samples of social psychological research articles, not those used in the research generally regarded as most central to our accumulated knowledge. It could be that much of the research that really has a lasting impact is more likely to have been conducted on adults and/or in more realistic settings.

One index of prestigious research is that cited in social psychology textbooks. Findley and Cooper (1981) coded the articles cited in nine widely used textbooks in social psychology for reliance on college students; the median, across content areas, was 73%, very close to the field as a whole at the time (75% of the 1980 articles in mainstream journals and 72% of the other articles used college students, as shown in Table 1).

A second index of prestige is appearance in books of readings. In social psychology, the reader market was dominated from World War II through the early 1960s by the Society for the Psychological Study of Social Issues (SPSSI) series, originally titled *Readings in Social Psychology*. Subsequently the market, such as it was, was dispersed among other books. The articles reprinted in the pre-1960 readers used adult subjects considerably more often than they did college students, as shown in Table

<sup>3</sup> These data do not rule out the possibility that a wholly different set of social psychologists publishes research using more representative subject populations and more realistic settings outside of the mainstream journals. Hence these data should be understood as describing the behavior of social psychologists who publish at least some of the time in the mainstream journals.

Table 3  
*Subject Populations in Selected Books of Readings in Social Psychology*

Study	Title	Subjects			No. of codeable articles
		% college students	% other preadults	% adults	
Pre-1960 research					
Swanson, Newcomb, & Hartley (1952)	<i>Readings in Social Psychology</i> (2nd ed.)	28	23	49	61
Proshansky & Seidenberg (1965)	<i>Basic Studies in Social Psychology</i>	35	18	47	60
Post-1960 research					
Steiner & Fishbein (1965)	<i>Current Studies in Social Psychology</i>	64	12	24	42
Freedman, Carlsmith, & Sears (1971)	<i>Readings in Social Psychology</i>	69	13	18	39
Wrightsmen & Brigham (1973)	<i>Contemporary Issues in Social Psychology</i> (2nd ed.)	57	24	19	21
Brigham & Wrightsmen (1977)	<i>Contemporary Issues in Social Psychology</i> (3rd ed.)	73	0	27	15
Aronson (1981)	<i>Readings About the Social Animal</i> (3rd ed.)	55	16	29	31
Brigham & Wrightsmen (1982)	<i>Contemporary Issues in Social Psychology</i> (4th ed.)	59	6	35	17

3. After 1960, however, college student subjects took over, both in readers with a social problems focus (e.g., Brigham & Wrightsmen, 1982) and those focusing more on basic research (Aronson, 1981; Freedman et al., 1971).

This transition around 1960 to college student subjects is aptly illustrated within the SPSSI reader series itself. In 1965, in lieu of a fourth edition of a general reader, two volumes were issued. *Basic Studies in Social Psychology* was intended to emphasize the "classics" (Proshansky & Seidenberg, 1965) and consisted almost exclusively of articles published prior to 1958 (the median year was actually 1952). *Current Studies in Social Psychology* was intended to represent current research (Steiner & Fishbein, 1965) and consisted exclusively of post-1958 articles (the median publication year was actually 1962). As shown in Table 3, adult subjects predominated in the pre-1958 *Basic Studies*, whereas college students were by far the dominant subject population in the post-1958 *Current Studies*.

A third way to index the most prestigious research in the field is to select that done by the most frequent contributors to mainstream journals. And those who publish most regularly in the mainstream journals turn out also to be the most likely to use college students in the lab. The other articles of *JPS* authors that appear in mainstream social psychology journals relied heavily on undergraduate subjects (84%), were almost exclusively based on laboratory studies (97%), and so almost never considered adults in their natural habitats (3%). This is shown in column 8 of Table 1. Prestige in our field therefore seems to be linked closely to the use of college student subjects in laboratory settings.

### Summary

In short, (a) social psychologists during the late 1940s and 1950s commonly conducted research on adults in their natural habitats, but (b) since the early 1960s the great majority of social psychological studies have relied exclusively on college students tested in the laboratory, (c) at a level that has held quite steady over the past 25 years. Indeed, (d) in the current era, the most prestigious research, as indicated by textbook citations,

by inclusion in books of readings, or by having been conducted by the most prolific publishers in the most mainstream journals is, if anything, the most likely to be based on laboratory research with college students. This reliance on undergraduates in the lab (e) seems not to be a product of journal policy or peer review, because it emerges wherever social psychologists publish.

### What Difference Does It Make?

That sociopsychological research overwhelmingly uses one rather narrow subject population and artificial laboratory settings does not necessarily mean its results are invalid. Much biomedical research does the same, and few would question the cumulative value of that work. There should be little reason for concern unless it can be shown that such choices threaten the validity of the research.

### The Consensus: Little or None

The consensus of the field certainly appears to be that such a heavy reliance on college student subjects does not have major negative consequences. It has typically been assumed that the phenomena under investigation by social psychologists are so ubiquitous and universal that it does not matter much what subjects are used; one might as well use those cheapest and easiest to obtain. As a result, social psychologists have, by and large, ignored the question of subject population and thus have not discussed its possible consequences. Without going into detail, a careful perusal of the most widely used textbooks in the field, the major books and handbook chapters on methodology, the major handbook and review chapters on attitudes and social cognition, the most recent texts on attitude change or social cognition, and even the several articles in the 1970s expressing concern about a crisis in social psychology reveals that subject selection is generally not mentioned at all. Only a few mention it even in passing, and none express any particular concern about it.

A few critical articles have been published recording the par-

ticular characteristics of sociopsychological methodology, most of them cited above in the discussion of historical trends. In general, however, they have not attempted to specify the consequences of these patterns. And in any case they seem to me to have had little impact so far, either upon researchers' practices or on researchers' attitudes toward their practices.

### *The Potential Hazards of a Narrow Data Base*

What kinds of mischief might this narrow data base do? Presumably the principal goal of research in social psychology is to establish a body of causal propositions of the general form  $y = a + bx$ . Problems could arise when a narrow data base disturbs functional relationships and misrepresents them in some way. But some possibilities seem more threatening than others. Conceivably, the nature of the relationship may be wrongly described, in that either the sign or the shape of the  $b$  term may be wrong. However, I doubt that either of these is a major problem in social psychology. Incentives for discovering incorrect signs are quite lavish and usually motivate a great deal of research when they are suspected, as happened following the classic Festinger and Carlsmith (1959) study of forced compliance. And our propositions are usually too crude to invoke subtly shaped relationships.

More likely is that the strength of the relationship may be wrongly described. A test conducted under artificial circumstances is best at telling us whether or not  $x$  can cause  $y$  under favorable circumstances. Having established that it can, the criterion of success shifts to the validity of the proposition in everyday life: Is  $x$  in general a major cause of  $y$  in everyday life? And here, as Converse (1970) has pointed out, the absence of research on the general population in natural situations can leave the experimental social psychologist ignorant of the actuarial mainstream, unaware of what the critical sources of variation are, or are not, in "natural" social processes.

The strength of the relationship can be misestimated in at least three different ways. First, the size of  $b$  may be incorrectly estimated from the artificial data base:  $x$  may, in everyday life, not influence  $y$  much, and/or other variables may influence it more strongly. It would be a serious matter if some seemingly strong functional relationships were in fact limited only to college students in the laboratory or had very small (even if statistically significant) effects elsewhere. A vast amount of research and textbook space might be devoted to variables (or processes) that are simply not very important in general. Conversely, some relationships might hold with ordinary adults in everyday life but not to any visible degree among college students in the laboratory. Our research would fail to detect them, and some key aspects of human nature might thereby be omitted from theories in social psychology.

Second, the range of the  $x$  values used in our research may not map well onto their range in ordinary life. This seems to me a particular hazard. The  $x$  values in an artificial data base are likely to be set at some ecologically unrepresentative level. For example, laboratory research on media violence usually presents much higher and more concentrated doses of filmed violence than do the everyday mass media; for example, showing only an intensely violent segment of a prize fight as opposed to the occasional violent episode of a typical 1-hr TV show.

Finally, the effort to get pure laboratory conditions is likely to result in testing a narrow and/or atypical sample of possibly interacting conditions. For example, in most aggression experiments, the reigning authority either approves or actually encourages aggression (e.g., with the Buss shock machine), certainly an atypical condition for antisocial aggression in everyday life. Moreover, they do not even enter the range of the threatened punishments for antisocial aggression that in fact control much of its variance in everyday life.<sup>4</sup>

### *Assessment of Risk*

How can one assess the threat to the validity of research findings posed by heavy reliance on this one narrow data base? Two strategies seem evident. Most obviously, one could repeat tests of various cause-and-effect propositions on subject populations of various ages and social locations and in a representative sample of everyday situations. This is the *ecological validity* strategy advocated by Bronfenbrenner (1977) and Brunswik (1955). If some propositions prove to hold for college students in the laboratory but not for ordinary people in everyday life (or vice versa) there would be reason for concern. Although systematic comparisons across subject populations and research sites would provide the most certain evidence of external validity, they have not, to my knowledge, been attempted in any area of social psychology.<sup>5</sup>

Hence a more realistic (and less expensive) strategy would be to extrapolate from existing information. This would require several steps: identifying the ways in which college students in the laboratory differ from the general population in everyday life, estimating the effects of those factors on the basis of other research, and then making some informed guesses about how this biased data base might affect the resulting substantive generalizations. This was essentially Hovland's (1959) strategy in

<sup>4</sup> Berkowitz and Donnerstein (1982), and many others, argued that experimental, rather than mundane, realism is sufficient to test causal hypotheses. This seems less obvious to me than it does to them. Although usually intended to test causal hypotheses, experiments are frequently interpreted as making population estimates (e.g., the important studies by Asch, Bern, Milgram, and those on cognitive heuristics, attributional biases, and attitude-behavior inconsistency). Testing functional relationships may also require more ecological validity than is usually assumed, for the reasons given in the text above. And even experimental realism is rarely assessed in much detail beyond, at most, a relatively narrowly focused manipulation check.

<sup>5</sup> Some have replicated studies with nonstudent populations and/or in sites other than academic laboratories, of course. But the effects of subject characteristic and site variables have not been assessed systematically. For example, Crutchfield (1955) did use some adult subjects in his laboratory studies of conformity, though he made no explicit age comparisons. Similarly, Milgram (1974) took great pains to replicate his findings on obedience to authority with nonstudent subjects of varying age and social class and in a nonuniversity setting. I hope it will not seem churlish to point out that, nevertheless, the effects of age and class were not assessed; that the nonuniversity context did produce a significant reduction in obedience (though it remained at very high levels); and that Milgram felt the laboratory context was crucial in producing the phenomenon. The critical question here is one Milgram speculated extensively about: How common are such settings in ordinary people's natural habitats?

accounting for the differences between survey and experimental studies of attitude change. This second strategy appears to me to be the only feasible one at the present time, given the very limited amount of evidence available on ordinary people in ordinary life. Presumably if it gives cause for concern, it should be followed by more precisely focused replications using a broader range of subject populations, research sites, and research materials.

### *How Is the College Student in the Laboratory Unusual?*

How might American undergraduates, enrolled in introductory psychology classes and tested in academic laboratories on academiclike tasks, differ systematically from the general population in everyday life in ways that might lead us to mistaken conclusions about human nature in general?

Most obviously, undergraduates usually come from a very narrow age range and are concentrated at the upper levels of educational background. Those who work extensively with survey data on the general population are accustomed to finding that age and education are the two most powerful demographic factors influencing attitudes and attitudinal processes. This alone leads us to suspect that those at the tails of those distributions will be a shaky foundation upon which to generalize to the population as a whole. But it is possible to be more specific.

Introductory psychology tends to be one of the first classes taken by college freshmen: It is usually an easy, popular course that satisfies breadth requirements and has no prerequisites. Hence the students tend to be 17 to 19 years old and thus concentrated in a narrow band of late adolescence. Persons in this particular life stage tend to have a number of quite unique characteristics, as described in the standard texts on adolescence (see Atwater, 1983; Conger, 1977; and Douvan & Adelson, 1966; see also Rubenstein, 1983). At an intrapsychic level, they tend to have (a) a less than fully formulated sense of self, manifested variously in mercurial self-esteem, identity confusion and diffusion, inadequate integration of past, present, and future selves, feelings of insecurity, and depression. One important consequence is that (b) their social and political attitudes tend to be considerably less crystallized at this stage than later in life. They also tend to be (c) substantially more egocentric than older adults. They differ from adults in their interpersonal relationships, as well, having (d) a stronger need for peer approval, manifested in dependency, conformity, and overidentification with peers. However, this need tends to be mixed with (e) highly unstable peer relationships and especially highly unstable peer group relationships.

But college students also differ systematically from other late adolescents in general: (f) They have been carefully preselected for having unusually adept cognitive skills, and (g) they have also been selected for compliance to authority; few can successfully navigate 13 years of primary and secondary schooling and obtain good grades and positive letters of recommendation while fighting authority at every turn. (h) College students would also seem likely to have more unstable peer (and peer group) relationships than other later adolescents because of their greater geographical and social mobility and later entry into the work force and family life.<sup>6</sup>

The use of college students as a subject population cannot be

disentangled completely from the equally widespread reliance on the laboratory setting and the academiclike task. Laboratory studies in social psychology would seem likely to induce (i) a considerably more cognitive set than the other sites of ordinary life. They are usually conducted as part of a course requirement in an academic setting, such as a laboratory or classroom, and usually use paper-and-pencil materials that resemble academic tests. They would also seem likely to induce (j) a set to comply with authority, for some of the same reasons: the academic setting, the course requirement, the testlike materials, with an older authority—the experimenter—giving authoritative instructions and controlling the awarding of credit. Finally, most laboratory situations deliberately (k) sever students from whatever close peer (and peer group) relationships they have, in order to minimize contamination of individuals' responses.

The critical question is whether or not these unusual characteristics of college students tested in the laboratory are likely to produce misleading or mistaken substantive conclusions about social behavior. Unfortunately, one cannot extrapolate very well from research in experimental social psychology, because it provides very little direct evidence on these variables. For example, the excellent review of attitude change research by Petty and Cacioppo (1981) refers to age and intelligence only once each, and not at all to educational level or to Hovland's (1959) compelling paper on research site.

On the other hand, we may be able to make such informed guesses if we turn to evidence gathered within other disciplines that have researched persons from the full life span and from a wider variety of ecological locations. Using such sources of evidence and focusing especially on attitudes and social cognition, the remainder of this article attempts to identify major features of our account of human nature which may be misleading as a result of our narrow data base.

### Weak Self-Definition

There is much current research on the self. One of its major themes is that people have a rather wobbly definition or sense of the self. For example, the central observation of the social comparison literature (Festinger, 1954) is that people arrive at perceptions of their own attitudes and abilities not through introspection but by comparing themselves with others. The extensive literature on the self-perception of attitudes (Bem, 1972), preferences (Nisbett & Wilson, 1977), and emotions (Schachter & Singer, 1962) also argues that people have relatively impoverished introspective access to their own subjective states. In commonsense language, people do not know their own minds. In a related vein, research on *objective self-awareness* (Duval & Wicklund, 1972) asserts that self-esteem is highly fragile. It can be significantly lowered by minimal levels of self-reflection, which, it is argued, confronts the individual with the discrepancy between internal standards and reality.

The consensus among developmental psychologists is that ad-

<sup>6</sup> The fact that these college students almost all are from the American middle class or other westernized middle-classes and educational systems no doubt has other ramifications, but thorough consideration of such cultural factors would take this article too far afield (see Miller, 1984, for a recent foray into that territory).



olescents do not have as firm a sense of self, or self-definition, as do older adults. As Erikson (1963) and many others have noted, they frequently do not have a clearly crystallized identity. They are quite uncertain about many of their values, preferences, abilities, and emotions, and for good reason. Many of these dispositions are still developing, many are quite volatile as yet, and the stability that may ultimately come to internal dispositions simply has not yet had time or experience to develop.

It is possible that people of all ages are in fact rather uncertain about their own true attitudes, emotions, and abilities. But research in the areas of social comparison, self-perception, and objective self-awareness has relied almost exclusively on college student subjects. The reliance for empirical data on a subpopulation that is particularly uncertain about its own dispositions could quite naturally, but possibly misleadingly, lead to a view of the whole species as equally uncertain about its own internal states.

### Uncrystallized Attitudes

One important consequence of this wobbly sense of self is that late adolescents and young adults tend to have less-crystallized social and political attitudes than do older people. This has been demonstrated with at least four different methodologies (see Glenn, 1980; Sears, 1983). Panel studies have consistently shown that older adults have more stable social and political attitudes than do late adolescents or young adults (Jennings & Niemi, 1981; also see Jennings & Markus, 1984). Second, young people change attitudes more than older persons in response to political events. In Mueller's (1973) terms, "the public swerves to follow" sudden switches in official foreign policy (such as that concerning the Korean and Vietnam Wars), and the young swerve most (also see Sears, 1969, pp. 351–353). The racial conflicts of the 1960s and the Vietnam War influenced basic party preferences more for young adults than for their parents (Markus, 1979). Similarly, the young were the first to jump on the bandwagons of such right wing extremists as Adolf Hitler and George Wallace (see Lipset & Raab, 1978; Loewenberg, 1971), as well as on those of the radical leftist movements that swept the campuses in the late 1960s and early 1970s. Third, cohort analyses have generally shown younger cohorts to be more responsive to strong long-term period pressures, such as those of the late 1960s and 1970s toward more distrust of government and weaker party identification (Glenn, 1980) and those of the early 1980s toward Reagan and the Republican party (Shanks & Miller, 1985). Converse's (1976) cohort analyses also showed party identification to strengthen with age, especially in "steady state" eras with only weak period effects. Fourth, Kirkpatrick (1976) has shown that older cohorts in the late 1950s and 1960s had more consistent attitudes on social welfare issues than did younger ones, and consistency increased within cohorts as they aged.

In short, four quite different lines of research have shown late adolescents and young adults to have more unstable, changeable, weak, and inconsistent attitudes than older adults. This lesser crystallization of their attitudes may be partially responsible for three important conclusions that social psychologists

have generally drawn about human nature primarily on the basis of their research on college students in the laboratory.

### *Easily Influenced*

One core conclusion of modern social psychology is that people are easily influenced. Almost every textbook has chapters on attitudes and attitude change. Almost always the message is that judgments and attitudes are readily changed and that social psychology provides an extensive roster of successful change techniques. Similarly, most textbooks have chapters on conformity and compliance, which are illustrated by the well-known studies by Asch, Milgram, and many others, that document the many ways in which psychologists have shown behavior to be easily controlled through social influence. At this very general level, social psychologists stand somewhat apart from social scientists in some other disciplines who have often found human preferences and behavior to be quite refractory. According to these individuals, mass communications frequently are found to have minimal effects, racial prejudice resists the most painstaking interventions, expensive desegregation programs and other educational reforms do not substantially improve minority children's performance, neuroses fail to succumb to elaborate psychological therapies, and alcohol and other drug dependencies are resistant to all but the most draconian treatments.

The conclusion of relatively easy influence may stem from the unusual data base from which it emerges. Attitude change research generally involves exposing captive college student subjects, with their relatively uncrystallized attitudes, to authoritative communications in an academic atmosphere. Moreover, college students are probably unusually compliant to authority, inasmuch as they are sufficiently well socialized (or conformist) to have successfully followed the arcane directions of dozens, if not hundreds, of teachers, school administrators, parents, and test-givers over the prior 2 decades of their lives.<sup>7</sup> Use of such subjects and research sites, perhaps not surprisingly, thus produces data indicating that attitudes are easily changed and that the independent variables of the laboratory experience are powerful levers on that influence.<sup>8</sup>

Similarly, studies of conformity and obedience conducted with college students in the laboratory may give the false impression that behavior is also generally easily influenced. But their subject population is predisposed to be more compliant, and their atmosphere more authoritative, than is usually true for the general population in its many natural habitats. Distortions here might be of even more consequence inasmuch as the conformity studies of Asch, Milgram, Zimbardo, and others

<sup>7</sup> A most useful earlier review of research on "the subject role" in psychological experiments, by Weber and Cook (1972), similarly singles out the *faithful subject* and *apprehensive subject* roles as threats to the validity of laboratory experiments. Their discussion touches on subject selection biases only in passing.

<sup>8</sup> Hovland (1959) earlier noted a number of features of laboratory situations that made attitude change much easier to accomplish there than in the field. The present article should be viewed as following in the same vein, developing certain implications of his argument in greater detail, and adding the focus on subject selection in particular.



have been among the most widely publicized of all sociopsychological findings.<sup>9</sup>

### *Attitude-Behavior Inconsistency*

Another widely accepted contention is that attitudes only weakly control behavior. However, much evidence indicates that attitude-behavior consistency is substantially enhanced when attitudinal preferences are strong or nonconflicted (Kelley & Mirer, 1974; Norman, 1975), when the attitude is based on relatively more information (Davidson, Yantis, Norwood, & Montano, 1985) or direct experience with the attitude object (Fazio & Zanna, 1981), or when the subject has a vested interest in the issue (Sivacek & Crano, 1982).

Focusing research attention on students, whose attitudinal dispositions, among other things, are not yet at full strength because they are still developing and are based in relatively poor information and little direct experience, is bound therefore to underestimate the general level of consistency between attitudes and behavior. Moreover, for the reasons given earlier, the environmental press may be stronger in an academic laboratory situation than in most natural habitats, further diminishing the role of such predispositions as attitudes. This is not to argue that attitudes and behavior are invariably highly consistent. But the conventional wisdom has been, I think, that attitudes and behavior are generally not consistent, which is probably overdrawn because of unrepresentative subject populations and research settings (among others, see Schuman & Johnson, 1976).

### *Self-Perception*

Self-perception research has suggested that people frequently arrive at judgments about their own attitudes on the basis of external cues (the situation and their overt behavior), rather than on the basis of introspective access to their true internal attitudes. Sometimes this conclusion has been tempered by suggesting that this process may occur primarily when internal cues are weak (e.g., Bem, 1972). This qualification has, however, received much less attention than assertions that the self-perception process is quite general. As anyone who has lectured on this material knows, the strong form of the assertion is usually received as quite startlingly fresh and original, probably because it so completely violates our own subjective experience of acting on the basis of our introspection.

There is now substantial evidence, however, that these self-perception effects may occur only when the subject has very weak prior attitudes. Chaiken and Baldwin (1981) found that significant self-perception effects occurred only among subjects with poorly defined prior attitudes; Wood (1982) found the same among those who had engaged in relatively few prior relevant behaviors; and Taylor (1975) found the same when the behavior had no important consequences. According to this research, then, the self-perception phenomenon may occur mainly when people have relatively uncrystallized prior attitudes on the issue in question. Its ubiquity in everyday life may not be as great as it might seem from social psychological experiments, then. These are conducted almost exclusively on students who have generally rather uncrystallized attitudes. They also ordinarily use attitude objects that elicit only mild prefer-

ences, presenting alternatives that are novel, artificial, or quite similar.

Drawing subjects from such a narrow age range also prevents our investigating the determinants of life stage differences in attitude crystallization. For example, informational mass, information-processing skills, and social support all are likely to vary systematically with life stage (see Sears, 1981, 1983), but assessing their effects would require sampling quite different life stages.

### *Unintegrated Attitudes*

If late adolescents' attitudes tend to be relatively uncrystallized and if they have a less than fully formulated self in other respects as well, it is also likely that these attitudes will not be as integrated into other aspects of their personalities as they will prove to be later in life. Early postwar research on anti-Semitism, racial prejudice, and attitude change, heavily influenced by psychoanalytic theory, often viewed these as firmly rooted in chronic personality predispositions (Adorno et al., 1950; Allport, 1954; Sarnoff, 1960). Data for the most extensive work, on authoritarianism and anti-Semitism, came from adults who were given depth interviews in the psychoanalytic mode, both in treatment itself (Ackerman & Jahoda, 1950) and in extended research interviews (Adorno et al., 1950; Bettelheim & Janowitz, 1950; also see Lane, 1962; Smith, Bruner, & White, 1956). The psychodynamic insights thus generated led to the development of questionnaire measures of personality, which were initially administered to college students, because they were, as Adorno et al. (1950, pp. 21-22) explicitly acknowledged, the most available, cooperative, and easily retested of possible subjects. However, their research soon moved on to a wide variety of adult subject populations, including veterans, union members, professional women, and so on.

This research received several damaging critiques. Some criticized even this modest pilot use of college student subjects as part of a broader uneasiness about unexamined confounds of educational level with the supposed measures of personality and ethnocentrism (Hyman & Sheatsley, 1954). However, complaints that the research had neglected response sets and authoritarianism of the left demanded more controlled research. This, not surprisingly, led to a virtual avalanche of research on college students, which soon evolved into rather arid and esoteric methodological debates and, as Kirscht and Dillehay pointed out in their excellent review, simply exacerbated the sampling inadequacies of the original work: "that problem is still with us. Its crux is the use of college students for research samples . . . the results are no closer to proper generalization than ten years ago" (1967, pp. 31-32).

The same psychodynamic reasoning led also to intervention programs. Brief insight-therapy experiences were administered, mainly to student subjects, to break down ego-defensive support for their prejudice (e.g., Katz, Sarnoff, & McClintock, 1956). These studies generated rather mixed findings, along with more complaints about lack of rigor (see Kiesler, Collins, & Miller, 1969).

Today personality predispositions are no longer portrayed as

<sup>9</sup> Replications by Crutchfield (1955) and Milgram (1974) put some boundaries on this point. See Footnote 5.

central determinants of social and political attitudes, either in social psychology or in neighboring disciplines (see Kinder & Sears, 1985; McGuire, 1985). There are clearly several reasons for this. Whatever the merits of other considerations, it seems to me that both research and intervention on personality determinants of attitudes were doomed to failure once the move to students in the laboratory took place. Most late adolescents focus on the world of public affairs only in passing if at all. Their personalities, like their attitudes and other aspects of their selves, have not yet fully crystallized. And if passionately held social attitudes are to become imbedded in the individual's deepest personality needs, it seems most unlikely that that time-consuming and complex psychological task will ordinarily have been completed by the age of 18 or 19. Special cultural and historical circumstances may speed it up, as in Berkeley in the 1960s or in Beirut in the 1980s. But most American college sophomores, in most eras, are far from Berkeley and Beirut.

Are we content with an account of the origins of political and social attitudes that omits the role of personality dynamics? If we believe that they do play a role, is it likely that we could discover it with research on American college students in a laboratory setting?

### The Absence of Self-Interest

Some potentially powerful determinants of attitudes are nearly absent in late adolescence. Limiting research to that life stage risks omitting those processes from our accounts of human nature. For example, material self-interest has been a dominant factor in many social scientists' theories of attitude formation and change, from Smith, Bentham, and Marx to today's public choice crowd. But it is even touched on by only the most comprehensively taxonomic social psychologists (see Katz, 1960) and almost never researched. Why not? Both the mean and variability of the independent variable, material self-interest, are generally very low in a college student population. Very few social and political issues bear directly on college students' lives, with the occasional exceptions of military issues or the costs and funding of higher education (e.g., Sears, Steck, Lau, & Gahart, 1983). A process that usually cannot be studied with college students probably will not prove very central to social psychologists' theories of human nature. Among adults, self-interest may not have the universal importance some claim, but it is crucial at certain important junctures (e.g., Sears & Allen, 1984; Sears & Citrin, 1985).

### Group Norms and Social Support

Much early empirical research in social psychology demonstrated the great power of group norms over the individual's judgments and attitudes. Sherif's early work on social norms (1936), Newcomb's Bennington study (1943), Kurt Lewin's discussion of group decision (1947), Shils and Janowitz' (1948) research on military morale, Festinger's (1950) and associates' work on small group influence, Berelson, Lazarsfeld, and McPhee (1954) and Converse and Campbell's (1960) treatments of voting behavior, and Kelley's fine work (e.g., 1955) on the role of group loyalties in influence by mass communications, all underlined the powerful effects of primary group loyalties in ev-

erything from novel laboratory tasks to the most important political decisions.

Certainly groups remain powerful determinants of sociopolitical attitudes, as witnessed by passionate ethnic and religious rivalries in Northern Ireland and throughout the Mideast, the response of the Afghans to Russian domination and the resistance of Afrikaners to black demands, and black bloc voting in the United States. But social psychologists' accounts of attitude change today generally ignore the role of groups in attitudinal processes and, indeed, rarely even cite the important early studies just mentioned (for examples, see the excellent reviews by Petty and Cacioppo, 1981; McGuire, 1985). Even the numerous accounts of extensive direct interpersonal influence among college students alluded to earlier, such as laboratory studies of conformity, tend to describe influence by unaffiliated strangers rather than by fellow members of ongoing groups. The image of the human being is of a socially isolated, atomized individual—an odd portrayal by a “social” psychology.

One reason may be that groups are peculiarly unimportant to an individual undergraduate filling out a questionnaire in an artificial laboratory situation. Partly, life stage plays a role here. Adolescents' dependency on their peer groups is well known, but their group affiliations are in fact notoriously unstable and changeable and provide very little of the long-term social support and anchorage for their judgments and attitudes that they do for more mature individuals. Disruptive changes in primary groups are more common in late adolescence and early adulthood than at any other stage of life, owing to high rates of geographical mobility, entering and/or changing work environments, status mobility, higher education, beginning a marriage or other intimate relationships, and military service (Brown, 1981; Carlsson & Karlsson, 1970). Moreover, since attitude similarity is a powerful determinant of interpersonal attraction (Byrne, 1971), people prove to be increasingly able, as they get older, to assemble attitudinally supportive family, work, and friendship groups (Newcomb, Koenig, Flacks, & Warwick, 1967; Berelson et al., 1954). Thus groups should, with age, become increasingly important sources of social support and resistance to change.

College students may be even less thoroughly tied to stable primary groups than are other late adolescents because they are more likely to have become detached from the groups of their earlier life, and they have not yet become fully embedded in the group relationships of their adulthood, such as in marriage, the workplace, neighborhood, or in recreational, fraternal, and solidarity groups. Further, the laboratory setting usually deliberately severs college students from their close friends and other group ties in order to avoid any contamination as a result of influence by them. They are usually tested individually, or at least individuated (by being given individual questionnaires in a mass testing situation), and on artificial tasks that are irrelevant to peer-group norms, again to minimize group-based resistance.

In short, group norms are very powerful influences on individuals' attitudes but probably considerably more for mature adults in their natural habitats than for college students in the laboratory. Moreover, the nature of that impact most likely also varies systematically across the life span, probably increasingly supporting resistance to change with age. So laboratory re-

search on college students is bound to underemphasize the role of the group, in terms of both influence and social support, and overemphasize the role of purely individual factors.

### Stage-Specific Attitudes

Reliance on this data base may also lead to problems concerning dispositions or processes that vary substantially with life stage. For instance, life-stage or life-cycle theories of attitudes suggest that people tend to adopt certain specific attitudes at specific life stages and to reject them at other stages. The aged are thought to be especially attracted to conservatism because of their material and cognitive stake in maintaining the status quo. The middle-aged are thought to be especially self-interested, because they have hard-earned "stakes" to protect. And late adolescents are thought to be especially attracted to political radicalism, because it serves their stage-specific needs for autonomy and/or rebellion against parents and parent-surrogates, their youthful idealism, or their lack of economic responsibilities (see Glenn, 1980; Sears, 1975).

These stage-specific theories of attitudes simply cannot be assessed in a student population because of its narrow age range. Hence such life-stage theories are rarely mentioned in the standard sociopsychological treatments of attitudes, even though they are fairly common in other social sciences. To be sure, many cohort analyses have found that age differences in attitudes are more likely to be caused by generational than stage-specific factors (see Glenn, 1980; Sears, 1975). Nevertheless, these are potentially important determinants of attitude formation and change and cannot be investigated in a college student population.

### Cognitive Processes and Rationality

The oldest and most recurrent debates about attitudes and decision making revolve around the normative question: How good are they? This in turn usually breaks down into two separate questions, about the rationality of attitudes and decisions and about the relative roles of cognitive, as opposed to affective, processes. Both provoke endless definitional controversies. At a commonsensical level, though, there is probably general agreement that rationality is marked by scanning all available relevant information in an unbiased manner and combining it according to some logical decision rule. Similarly, most would probably agree that emphasizing cognitive processes leads us to focus on perception, memory, and thinking, whereas emphasizing affective processes leads us to focus on emotion, motivation (or need or drive), value, and preference.

### *Changing Theoretical Emphases*

In my view (and certainly to oversimplify), theory and research in social psychology have shifted from a rather strong emphasis on affectively based irrationality in the immediate postwar years to today's emphasis on cognitive processes, though in both rational and irrational forms. In the social psychology of the 1940s and 1950s, attitudes were blindly learned in childhood from parents and schoolmates (Hyman, 1959;

Proshansky, 1966) or were driven by powerful psychodynamic forces (Adorno et al., 1950), and they could be changed by such emotions as fear, aggression, and sexual arousal (Hovland, Janis, & Kelley, 1953; Sarnoff, 1960).

During the 1960s, as psychoanalytic and conditioning theories were losing favor, theories based on "rational" processing became more popular, but it still had a strong affective emphasis. Congruity theory (Osgood & Tannenbaum, 1955), Abelson and Rosenberg's (1958) "psycho-logic," Anderson's integration theory (1971), and linear decision-making models (Slovic, Fischhoff, & Lichtenstein, 1977) all described the decision-maker as combining a broad and unbiased sample of informational inputs into a decision (or attitude) using a simple and straightforward decision rule, usually a linear model. At the same time, they all described the inputs as coded in evaluative terms and did not invoke configural combinatorial principles or intervening perceptual or cognitive variables. In these senses they depicted rational decision making on the basis of affective, rather than cognitive, processes.

Today social psychology generally portrays people as dominated by cognitive processes. In some cases they process rationally as well. In the pure form of Kelley's covariance model of attribution (1967), the individual thoroughly scans available information and uses a statistical algorithm to arrive at a logical attribution. Cognitive response theory (Petty, Ostrom, & Brock, 1981) views attitude change as a simple function of the number of favorable or unfavorable cognitive responses the individual has to a persuasive communication. Ajzen and Fishbein's (1980) theory of reasoned action holds that behavior follows in a straightforward, rational way from its perceived costs and benefits. Expectancy-value or subjective expected utility theories (e.g., Feather, 1982) view the individual as scanning different possible utilities and, using a simple statistical rule, combining them according to their probabilities of occurrence to produce a rational decision. In each case, thoughtful, deliberate, self-conscious, and thus rational processing is assumed along with such cognitive variables as expectancies or subjective probabilities.

Other contemporary work is equally cognitive, but it emphasizes "irrational" errors and biases, using such concepts as salience, availability, illusory correlation, misattribution, categorization, schemas, and mindlessness (see Fiske & Taylor, 1984; Kahneman, Slovic, & Tversky, 1982; Nisbett & Ross, 1980). This approach shares a focus on judgments that are erroneous from a normative standpoint and biased as a result of cognitive processes; hence, it emphasizes both cognitive and irrational processes.

In short, I would argue that the emphasis in social psychology has shifted from irrational, affective, evaluative processes to cognitive processing with a renewed interest in rational models. To be sure, there remains a lively debate within the cognitive camp, pitting rational theories against biases in information processing. Some approaches encompass both (e.g., Kelley, 1967; Taylor & Fiske, 1978). But this very controversy yields a net shift away from the irrational. In all, social psychology's portrait of the human being has changed quite markedly: no longer driven by primary drives, unconscious motives, stale repetition of childhood learning, and blind conformity, but think-

ing, perceiving, remembering, aware, reasoning, and often reasonable.<sup>10</sup>

### *The Role of the Data Base*

Why did these changes occur? In part, no doubt, for several reasons that have nothing at all to do with social psychology's unique data base. In recent years the pendulum of intellectual fashion throughout all the behavioral sciences has cycled away from emotion-laden theories of human irrationality, such as psychoanalytic theory and behaviorism, toward more cognitive and economically rational theories. Also, because of heightened ethical sensibilities and more extensive ethical monitoring systems, many investigators have no doubt shied away from research on emotion-laden, upsetting, "hot" processes and have been encouraged to do research on safer, less controversial and troublesome, "cool" cognitive processes.

Nevertheless, I would argue that the shift to more cognitive theories has been at least abetted by the increased dependence upon college students tested in the laboratory. Here the students' life stage is probably less relevant than their unusual cognitive skills. They have been carefully preselected for these, usually by some combination of prior performance at the cognitive tasks in high school courses and cognitive tests like the Scholastic Aptitude Test (SAT). As a result, information-processing skills of the kind emphasized on academiclike tests are considerably stronger among those attending college. Similarly, the complex cognitive structures that are relevant to sociopolitical attitudes are much more common among persons with a college education (Converse, 1964).

Moreover, customary procedures in laboratory studies should produce a strongly cognitive set. Almost all studies are conducted in an actual classroom or in a rather artificial, sterile, official-seeming laboratory on a college campus. The student usually participates as a requirement for some college course. And the studies themselves resemble standard college tests, with paper-and-pencil question-and-answer formats and complex, authoritative directions. A college student in a testlike situation knows not to respond with simple evaluative preferences; rather, what is called for is paying close attention, dispassionate judgment, a search for the "right" answer, critical thinking, and close attention. Many studies use artificial or novel content, or role-playing techniques. Others have cover stories presenting them as studies of perception or learning, not of prejudice or idiosyncratic emotion. Social psychology's use of relatively well-educated subjects, selected for their superior cognitive skills, along with research sites, procedures, and tasks that promote dispassionate, academiclike information-processing, should help produce empirical evidence that portrays humans as dominated by cognitive processes, rather than by strong evaluative predispositions.

These same conditions seem to me likely to allow the cognitively oriented researcher to make a fairly strong case for either rational or biased processing, depending on theoretical proclivity. On the one hand, the conditions of most psychology experiments encourage "cognitive miser"-like behavior. The incentives for participating in experiments are minimal, and students generally try to get through the task as quickly and painlessly as possible. Haste and meager incentive are likely to produce

shortcuts of all kinds, among them presumably cognitive errors and biases.

On the other hand, college students are selected for their ability to be rational. They are taught the habits of rational thought quite explicitly, to treat evidence objectively and to develop conclusions from it in a logical fashion. Rational thinking is a prerequisite for success in the academic, grade-oriented world. So it should not be difficult to set up conditions in which students process information in a logical, rational way.

Some tests of the cognitive response, reasoned action, and expectancy-value theories adduce evidence of rationality from the reasons subjects give for their actions, before or after the behavior itself. But college students in particular have been exquisitely trained to rationalize conclusions when they can recall little or no real information. One of their most common tasks is to make up and write down plausible-sounding reasons for something they know they are supposed to believe but usually cannot remember in detail the reasons why. Indeed Nisbett and Wilson (1977) suggested that asking a person to give "reasons" may lead to a falsely rational portrait of the determinants of the decision because people provide the most available plausible causal schema for their behavior rather than the *real* reasons. Such highly trained confabulators would seem to provide a particularly apt subject population from which to gather data that demonstrate rational decision-making processes, or at least reasonable-sounding reasons for decisions.

### *Egocentric Biases*

Finally, late adolescents are considerably more egocentric and preoccupied with their own needs and desires, often overwhelmed by their own emotions, and less empathic with others than they are likely to be later in life. In parallel fashion, recent research has dramatically underlined the egocentricity of social perception. It is given to egocentric biases, such that both members of a dyad claim most responsibility for joint activities (Ross & Sicoly, 1979; Thompson & Kelley, 1981), and to self-based consensus or false consensus effects in which one's own behavior or attitudes are seen as typical of everyone else's (Ross, Greene, & House, 1977). It is possible that indeed these should be explained as cognitive biases on the grounds that the self is most salient and/or available in memory. On the other hand, virtually all this research has been done on college students (see Mullen et al., 1985). Again, humans in general are described in terms that particularly characterize the late adolescent life stage.

### *Conclusions*

The questions raised here are twofold: How heavily has research in social psychology relied on American college students

<sup>10</sup> Perlman (1984) has presented data documenting these shifts, based on the Social Science Citation Index and research citations in textbooks. There is a recent renewal of interest in affect (e.g., Clark & Fiske, 1982; Roseman, Abelson, & Ewing, 1986; Ross & Sicoly, 1979; Smith & Ellsworth, 1985; Weiner, 1982; Zajonc, 1980). Some of these are genuine exceptions to the dominant focus on cognition, whereas others analyze affect from a cognitive point of view.

tested in artificial laboratory settings during the past 25 years? And, to what extent might primary reliance on this particular data base have led to biased substantive conclusions about human social behavior? Does social psychology's portrait of human nature match American college students' behavior in a laboratory better than the general population's behavior in its natural habitats?

Social psychology has indeed, since about 1960, relied primarily on a very narrow data base: young American college students tested in the academic laboratory. This data base is unusual in a number of respects. Such students tend, among other things, to have incompletely formulated senses of self, rather uncrystallized sociopolitical attitudes, unusually strong cognitive skills, strong needs for peer approval, tendencies to be compliant to authority, quite unstable group relationships, little material self-interest in public affairs, and unusual egocentricity. The sociopsychological laboratory also has its idiosyncracies, being a rather authoritative, academic, test-oriented setting that isolates subjects from their normal interpersonal relationships.

Some of the main emphases and conclusions of contemporary social psychology parallel these unusual features of its data base. Four examples have been presented above. First, modern social psychology tends, in a variety of respects, to view people in general as having a weak sense of their own preferences, emotions, and abilities: They have easily damaged self-esteem; they are quite compliant behaviorally; their attitudes and judgments are easily changed; their attitudes have a minor effect on their behavior; they are ignorant of or insensitive to their own true attitudes; and their long-standing personality predispositions are not important determinants of their sociopolitical attitudes. Second, material self-interest, group norms, reference group identification, and social support play little role in current research on attitudes and social cognition. Nor do stage-specific theories of attitudes, which assert that the individual's particular life stage may powerfully affect attitude formation and change. Third, contemporary social psychology views humans as dominated by cognitive rather than affective processes, especially emotionally based irrationalities. And, finally, sociopsychological theories tend to treat people as highly egocentric.

In all these respects, the idiosyncracies of social psychology's rather narrow data base parallel the portrait of human nature with which it emerges. To caricature the point, contemporary social psychology, on the basis of young students preselected for special cognitive skills and tested in isolation in an academic setting on academic tasks, presents the human race as composed of lone, bland, compliant wimps who specialize in paper-and-pencil tests. The human being of strong and irrational passions, of intractable prejudices, who is solidly embedded in tightly knit family and ethnic groups, who develops and matures with age, is not that of contemporary social psychology; it does not provide much room for such as Palestinian guerrillas, southern Italian peasants, Winston Churchill, Idi Amin, Florence Nightingale, Archie Bunker, Ma Joad, Clarence Darrow, or Martin Luther King.

The effects of this narrow data base on our portrait of human nature is nicely illustrated by Steele and Southwick's (1985) meta-analysis of the effects of alcohol consumption. They predicted, and found, that higher blood alcohol levels produced more impulsive social behavior (aggression, gambling, sexual-

ity, etc.) when inhibitory conflict was strongest, presumably because intoxication's disinhibiting effect has its most potent effects when the individual is most conflicted about the behavior in question. But the strongest predictor of extremely impulsive behavior, after conflict and blood alcohol level, was subject type: Noncollege student populations produced larger alcohol effects. The difference was a major one: Conflict and blood alcohol level (and their interaction) accounted for 20% of the variance; subject type accounted for 9% (the equivalent of a partial correlation of .30). This study reveals that subject effects are of the nature suggested above: College students in laboratory studies behave less emotionally and impulsively than the general population. And it indicates that the effects are potentially of major importance.

What is the recommendation? We have developed an impressive corpus of scientific knowledge and, indeed, have learned a great deal from studying college sophomores in the laboratory. But it may be appropriate to be somewhat more tentative about the portrait of human nature we have developed from this data base. The specific examples given in this article perhaps will serve to illustrate the point and raise the larger question and, in that way, point to a research agenda that might examine the question more directly.

Most obviously, a greater effort must be made to conduct research on persons from life stages other than late adolescence. But simply testing samples of a broader age range, in my view, would not by itself be sufficient. Other changes in our conventional methodologies would have to be made. Everyone has been to school, and I suspect that even middle-aged people, separated from family and friends and confronted with testlike materials on novel and artificial topics in an academic laboratory, would often behave like college students do. Any parents who have sat at their child's desk in a third-grade classroom on Parents-Back-to-School Night can testify to the power of that situation. However, that is not how a truck driver and his cronies behave at a Teamsters meeting. Even "genuine" courtroom judges behave in an artificially rational and normative manner when tested with artificial paper-and-pencil materials by a student doing a class project, as Ebbsen and Konecni (1975) have compellingly demonstrated. My suspicion is that the biases introduced by reliance on the college sophomore in the laboratory reflect a genuine interaction of subject characteristics with the many unusual features of the academic laboratory method. Very different people, in very different behavioral settings, would need to be studied.

On a cost-benefit basis, it would not pay to convert all sociopsychological research to adult populations in more representative settings or to replicate all past findings on them. Rather, selective conversion and replication is called for, when there is reason to believe that the findings might be biased by our peculiar data base. Much is already known about the life-span trajectory of social processes, and knowledge is rapidly accumulating as various disciplines recognize the value of a life-span perspective. The question of the ecological representativeness of research behavior settings has been raised explicitly in developmental psychology, and analogous questions have been raised in cross-cultural and comparative psychology. Enough is known to allow some good guesses about where the laboratory study of college students is likely to mislead us and where it is likely not

to. This article has offered a few examples, but a wider canvass, both of the life span and the full breadth of social psychology, would surely present a more complete picture.

This would require more vigilance to the possible limitations of student and/or laboratory-based data than most social psychologists have practiced in recent years. My guess, as developed above, is that such a strategy would open some of the more interesting developments of recent years to question, perhaps partly because their interest value is due to their contradicting our everyday experience (and perhaps, therefore, valid only within some rather narrow conditions). At the very least, it would lead to more complete and ecologically valid substantive conclusions. And, for the future, it might bring back into the purview of social psychology a broad range of important human phenomena, presently largely ignored, whose inclusion would allow social psychologists to speak with more authority to the full range of human social experience.

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