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ATTITUDES AS SOCIAL CATEGORIES: THE SCHEMATIC
PROPERTIES OF ATTITUDES AND BELIEFS

By

Robert W. Hymes

A DISSERTATION

Submitted to

Michigan State University

in partial fulfillment of the requirements
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DOCTOR OF PHILOSOPHY

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1984

ABSTRACT

ATTITUDES AS SOCIAL CATEGORIES: THE SCHEMATIC PROPERTIES OF ATTITUDES AND BELIEFS

by

Robert W. Hymes

A review of the general literature on attitudes suggests that researchers have focused almost entirely on the study of their consequences, rather than on describing their cognitive-structural aspects. Initial attempts to "map out" the cognitive system with respect to attitudes met with little success. While early research hypothesized that attitudes should bias the retention of information in a belief-confirming direction, a more recent re-evaluation of these biases suggests that attitudes are bipolar in nature, cognitively tuning individuals to both supportive and challenging information.

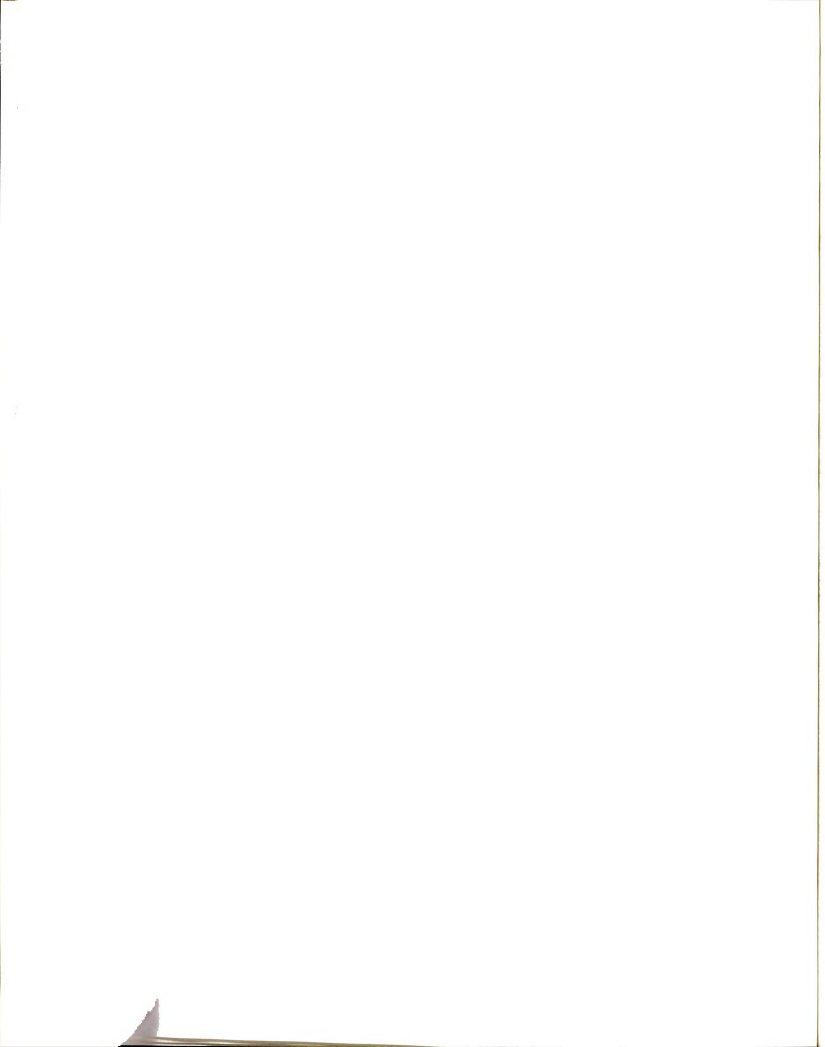
The present research offers several criticisms of the selective retention hypothesis and further probes the bipolar nature of attitudes. In terms of statements of belief about an issue, attitudes were first conceptualized as specific forms of general social categories such as gender or race. It was suggested that biases in the organization of attitude-relevant information could be demonstrated only if category members feel a sense of self-identification with the labels "pro-" or "anti-," in addition to advocating their position.

Study 1 re-examined the hypothesized memory biases by presenting attitude category and neutral, non-category members with information favorable, unfavorable, and neutral toward pro- and anti- target groups.

A signal detection analysis (cf. Swets, 1959) of item recognition indicated strong support for the bipolar organizational properties of attitudes. Attitude category members demonstrated a strong, but equivalent rate of sensitivity to the favorable and unfavorable items from both target groups. Significantly lower sensitivity rates toward the favorable and unfavorable items were found among neutral subjects, regardless of item valence. Further analyses revealed that the lower sensitivities were due, not to neutral subjects' inattention to the items, but rather to their confusion over the target categories in which the items were originally presented.

Studies 2 and 3 further explored the similarities and differences between attitudes and other social categories. As predicted, attitude category members perceived greater similarity to, and a higher cognitive complexity for other members of their own group relative to members of the outgroup. Results also indicated, however, that the categorical perceptions fostered by attitudes may be more complex than those found in minimal groups.

To my parents, Florence and Harry
who taught me how to handle the
difficult road of life.



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I am now convinced that graduate school is a challenge that can be met. Without help of the following people, however, my efforts might not have been so rewarding. To my wife and colleague, Janet, I will forever be in the greatest debt. Her unlimited patience and undying support were easily the greatest contributors to this research. I hope that someday she will know just how truly appreciative I am.

Of course, my graduate career would not have been the positive experience it was, without the help and friendship of my mentors, Bill Crano, Larry Messe, Linda Jackson and Norb Kerr. Together, they provided me with the comfortable environment and the scholarly advice I needed to overcome what Bill has called my "black thumb" for research. Special thanks to Bill and Larry for helping me to understand the word "colleague," and to forget my lowly status as a graduate student. Also deserving of special mention is Eileen Thompson, without whom I would never have had enoughchutzpah to leave the field of Political Science and join a profession I truly enjoy.

Finally, to Rob MacCoun who will always be my "best man." It was he alone who gave me the advice to lead me out of the "dissertation blues" by giving me the direction to channel my efforts and frustrations. If there is any reason that I regret finishing Grad school, it is that I will miss my day-to-day antics with Rob (alas, no one else seems to understand what it's like to be a "bozo on this bus").

Lest I forget, my undergraduate assistants played nothing less than a major role in this project. Special appreciation goes to the once and future lawyer, Steve LaKind. His friendship, support and organizational skills have been invaluable to this seemingly "never ending" project.

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INTRODUCTION

The Structural Aspects of Attitudes as Cognitions: An Overview of the Problem

The theories upon which much attitude research is based have assumed that individuals strive for consistency among elements of their cognitive system. Festinger (1957), for example, has argued that performance of a behavior which runs contrary to an individual's attitude can lead that person to change the attitude to become more congruent with the behavior. Similarly, Heider (1958) has suggested that individuals attempt to structure their relationships so as to maintain consistency between their own beliefs and the beliefs of significant others. Unfortunately, the emphasis of these perspectives has been on the consequences of these discrepant cognitions, while merely assuming the existence of certain properties of the attitudes involved.

McGuire (1968) argues that psychologists need to specify more clearly the structure of attitudes as cognitions. He contends that previous research accepted the notion of attitudes as a "given," and considered the search for attitude consistency as a goal. He suggests that psychologists should instead take the need for consistency as a "given" and use this tendency to "map out" the cognitive system and determine how attitudes are involved in meeting this need.

In an early attempt to map out this system, researchers hypothesized a relationship between attitudes and the retention of attitude relevant information. It was argued that individuals who held attitudes

should be more sensitive to information supporting their viewpoint while selectively forgetting information that would challenge their beliefs. Although this hypothesis made theoretical sense in light of the consistency theories developed by Heider and Festinger, the overall results of these studies proved inconclusive and contradictory.

Perhaps the failure of these studies to isolate the structural elements of attitudes stems from their lack of conceptual and theoretical rigor. For one thing, later research shows that attitude-oriented individuals have a need to retain the information from opposing sides of an issue so that they may "counterargue" a subsequent attack on their own position. This suggests that a failure to obtain memory differences between attitude groups may, in fact, be supportive of attitude as information processing tools.

More importantly, the early researchers did not attempt to refine their measures of attitudes. Perhaps attitudes cannot be measured as simple continuous linear phenomena. A "3" on a scale ranging from "Pro" to "Anti" may be more indicative of "neutrality" than a degree of "Pro-ness." That is, a response of "neutral" is not necessarily more "pro" than would be a response of "anti". Moreover, the same value on a scale may represent two different meanings to two different people. Thus, the categories used to define subjects in early research may not have been adequate.

In answer to this criticism, it is proposed that people use their attitudes to "categorize" themselves and others. In order to define these categories, however, the conventional Likert-type scales alone are not sufficient. As an alternative, it is suggested that individuals be grouped according to their responses on a traditional measure as well as a simple question that asks them to identify themselves as belonging to

one of three attitude categories: pro, anti and neutral. In this way, the structural properties of attitudes as cognitions can be studied in a manner similar to the study of other social categories such as race and sex.

The literature on social categorization literature provides evidence of an ingroup favorability bias where individuals tend to favor the members of their own social category and discriminate against the members of the other categories. Presumably, the tendency to perceive people as well as objects as a "Gestalt", leads individuals to view themselves and others as "we" and "they," respectively. Concomitant with biased perceptions is a tendency to express favorable behavior toward those who are similar to the self and share the group label. Howard and Rothbart (1980), for example, have shown that the ingroup favorability bias may result in differential retention of ingroup and outgroup information in minimal groups.

The purpose of Study 1 was to determine whether individuals use attitudes as social categories, and whether selective retention through the use of attitudes operates in the same manner as it does in other social categorization research. The structural properties of attitudes was also explored by comparing individuals who have attitudes against individuals who do not. In this way, I addressed the question of whether individuals who hold an attitude on some issue (regardless of its valence) process incoming information differently from those who are neutral on that issue. Such a difference would suggest certain organizational properties that attitudes might possess.

To further explore the attitude as social category hypothesis, studies 2 and 3 examined in greater detail whether other cognitive

aspects of general social categories are shared by attitude categories. Of major importance were concerning the perceptions of heterogeneity and homogeneity of the members of attitude groups and whether individuals have greater cognitive complexity for their own attitude group than for the opposing group. Finally, Study 3 also examined the expectations of others that may be fostered by membership in the attitude category.

The Study of Attitudes as Cognitive Structures:

A Critique

Past research on attitudes has placed greater emphasis on the outcome of a set of attitude related processes than on describing the structural aspects of the attitude itself. The popular theories on which much of this research has been based have suggested the presence of such cognitive mechanisms. Heider (1946, 1958), for example, has posited the existence of a P-O-X relationship that contains sentiment elements connecting each of its individual components. He argued that the valence of the sentiment bonds was the major determinant of attitudes toward objects and people. Festinger (1957), in his theory of Cognitive Dissonance, also noted the existence of cognitive structures which, if unbalanced or inconsistent, motivate the individual to change a structure in order to make them more consistent. Although much of the consistency research has at its core the assumption of attitudes as "actual" structures that reside within the individual's mind, there have been few attempts to demonstrate the validity of this assumption.

While earlier research centered on the question of attitude change as a consequence of dissonance or attitude inconsistency, McGuire

(1968), in his editorial on the state of cognitive consistency research, called for the study of consistency as a means to an end rather than as an end in itself. He argued that "the consistency tendency would be a highly useful tool in mapping the cognitive system, leading to new insights regarding its structure and functioning and providing a test of these hypotheses and thought processes ... (p. 140)."

Unfortunately, McGuire was disappointed in his search for research that would have provided these "insights." He contended that where cognitive consistency research has been done, support for the consistency hypothesis has been taken and received as a goal. "Where I would have taken the need for consistency for granted and used it to map the cognitive system, the subsequent work has largely taken the cognitive system for granted, and tried to clarify the need for consistency. It has sidestepped the cognitive structure question, the subtleties of what leads to what psychologically, by various methodological tactics... (p. 141)."

To find evidence for McGuire's contention is not difficult. One need only to look at consistency research to find that attitude consistency has been treated as an outcome rather than as evidence for the existence of underlying cognitive structures. Heider's Balance Theory, for example, has been tested not so much for the structural features of the hypothesized triad as it has for the effect of these features on interpersonal relations and attitudes. Previously researchers have concentrated their efforts on manipulation of the P-O bond (person's attitude toward other) to determine the subsequent effects on the P-X bond (person's attitude toward some object). This work has generated much controversy as to whether inconsistency in P-O-X associations can provoke attitude change (Aronson & Cope, 1968; Newcomb, 1963). The more

basic question as to whether the P-Q-X elements are organized in a triadic fashion has been overlooked.

The research on cognitive dissonance is no less a target of this criticism. When two opposing cognitions occur in the subject's mind, a force is hypothesized to generate consistency-restoring attitude change. While McGuire most certainly would want to obtain evidence that the observed change is a consequence of these particular discrepant structures, he points out that "the cognitive structure in a given situation might be determined on an ad hoc basis, by a preliminary procedure in which a subject is asked to indicate 'what goes with what,' without an explicit attempt at teasing out the general principles involved." Once again, it is the attitude change that has been given the greatest consideration with less concern shown for identifying the relevant underlying cognitive structure.

To summarize, past research has assumed the presence of attitudes and has examined their consequences, whereas little has been done to determine their structural properties. Without defining the cognitive-structural properties of attitudes, it cannot be determined whether the results obtained in attitude change research are due to a change in the cognitive or the affective components of attitudes. It is proposed that these structures need not be assumed and may, in fact, be empirically demonstrated under the appropriate circumstances.

Cognitive Structures and Attitudes-

Conceptual Definitions

Common to most, if not all definitions of "cognitive structure" is the notion of an interconnection between a multitude of elements. Zajonc (1968), for example, defines a cognitive structure as "any form of interdependence among cognitive elements, whatever their definitions, which has motivational, affective, attitudinal, behavioral or cognitive consequences." More recently, Wyer and Carlston (1979) discuss the representations of social stimuli in memory as a network connecting concepts by pathways of differing widths in which the activation of one concept leads to the activation of all connected concepts. Similarly, Lingle and Ostrom (1981) employ the concept of a "thematic framework" in which reference is made to a subset of existing knowledge "that people use as a framework to guide their observation, organization and retrieval from memory of perceived events."

Implicit in each of these definitions is the utility of these networks for the organization or assimilation of incoming information. According to Zajonc (1968), a most important unit of the structure is the category, "a rule for identifying the parts of one's world, physical and ideational and it always refers to a class of events, objects, ideas or whatever." For Zajonc, the major feature of a structure is to "invoke those attributes necessary for the identification of each member of the class to which the category refers."

It is important to note that the individual is not passive in the classification process. Rather, as Bruner and Postman (1949) point out, the individual confronts the perceptual world with "hypotheses" about

what there is to be perceived. That is, a cognitive category will not be applied to any or all information in the world. Certain environmental cues are necessary to excite this structure and its implicit categories. The stronger or more accessible the category is, the weaker a cue will need to be to activate it. Moreover, information inconsistent with the hypothesis is likely to be ignored or distorted to fit with it.

Once a particular element within a cognitive structure has been activated, many other elements within the structure will also become accessible. Wyer and Carlston (1979) note the presence of "pathways" between elements along which excitation travels. Having accessed the category "student," for example, may lead to the activation of a second category, "liberal." As a result, an individual presented with the information, "Mary is a student," may subsequently recall that "Mary is a liberal," even though Mary's ideology was never presented.

In a similar vein, Lingle and Ostrom (1981) speak of "implicational associates." Individuals when presented with novel sensory stimuli, compare this information with pre-existing knowledge and "generate abstractions, inferences or associated thoughts." Rather than passively assimilating new environmental cues into the existing cognitive structure, individuals actively associate initial knowledge in the structure with the new information. Upon recalling the information, they may remember not simply what was originally presented, but may also recall all that was inferred.

To summarize, a cognitive structure is a network of ideas or pieces of knowledge within an individual's mind. If activated by a relevant environmental cue, the structure may be used to categorize or classify events or objects in the external world. If the categories are acti-

vated but the environmental stimulus, for whatever reason, does not fit into the classification scheme, the cue may be either distorted to fit within it or, if this is not possible, may be ignored altogether. Finally, once categorized, it is not necessarily the original cues that will be remembered, but the "implicational associates" generated by the categories.

Rosenberg and others (Rosenberg, 1956; Rosenberg & Hovland, 1960) have defined an attitude as having an affective, a behavioral and a cognitive component. According to these theorists, the cognitive component, in addition to being a simple statement of belief also influences the perceptual responses of the individual. That is, attitudes should not be viewed merely as various statements of belief about the world, but should also be considered as structuring for the individual that which is perceived, particularly if the environmental cue is attitude-relevant.

The functionalists (see for example Katz, 1960) consider attitudes and their perceptual properties as serving both a motivational and a knowledge function. In his review of the functional approach to the study of attitudes, Katz (1960) claims that attitudes may serve an ego-defensive function in protecting the person "from acknowledging the basic truths about himself or the harsh realities in his external world." Even more relevant to the concept of cognitive structure, Katz argues that attitudes serve a knowledge function in the individual's search for "meaning, the need to understand and the trend toward better organization of perceptions and beliefs to provide clarity and consistency for the individual (p. 156)."

From a functional-motivational perspective, attitudes can be viewed as cognitive structures that give individuals a means of organizing and

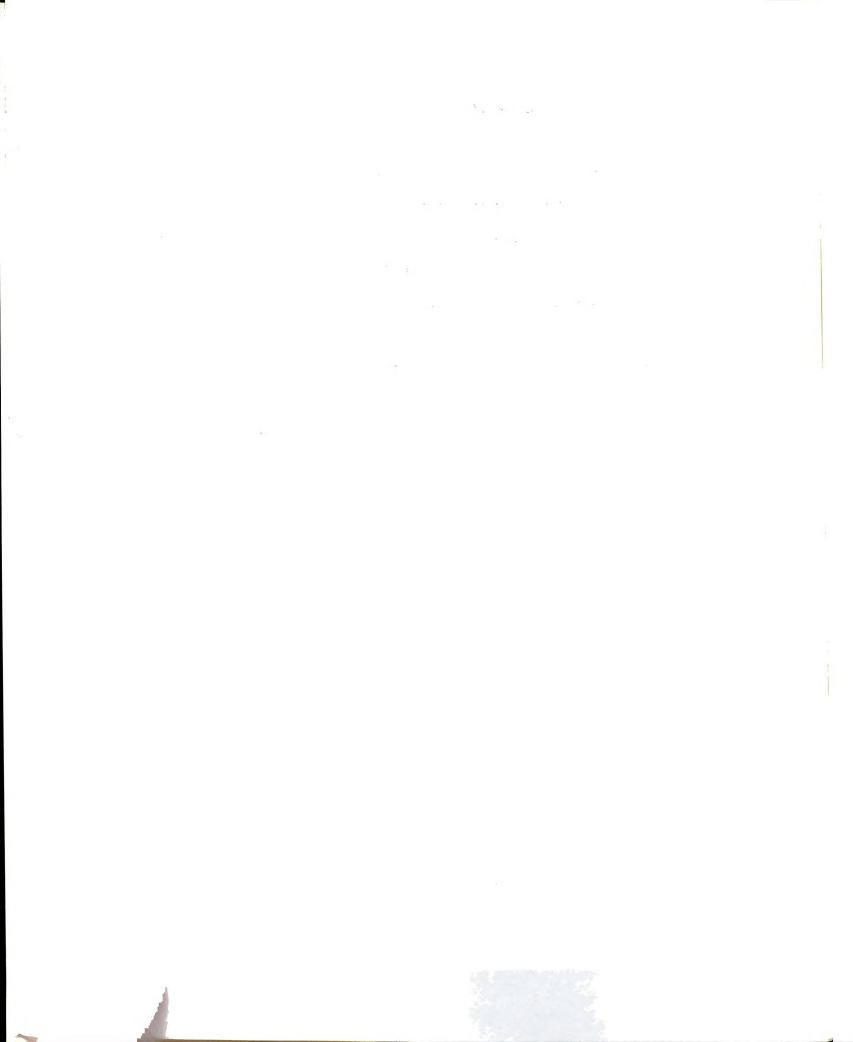
understanding the world around them. Using this operationalization the attitude-as-cognitive structure notion suggests that attitudes have structural properties specific to the learning and retention of attitude-relevant information. If attitudes have cognitive-structural properties, it is expected that they would be used to organize attitude-relevant information and possibly bias the individual's memory of this information in the direction favorable to the attitude. Early research attempted to demonstrate that attitudes do serve these functions, but met with mixed or little success.

Early Research on Attitudes as Cognitive Structures

The work of the early attitude researchers focused on the hypothesis that attitudes, if they met the criteria to be cognitive structures, should lead to biases in the search for confirming information. For the most part, attitudes were thought to act as "cognitive filters," selectively blocking out incoming counterattitudinal information, while allowing reception of information that supportive of the individual's attitude. The typical research paradigm presented information to subjects that either supported or refuted their belief on a political issue. Subjects would then attempt to recall the information.

Interestingly, the earliest research apparently did succeed in demonstrating a tendency for attitudes to lead to selective learning, albeit with questionable techniques. Watson and Hartmann (1939), for example, argued that attitudes serve as a frame of reference for the individual when encoding relevant information. They had subjects rank arguments for and against the existence of God according to their effectiveness. It was hypothesized that self-proclaimed Atheists would recall a greater number of statements arguing against the existence of God, while subjects selected from a Seminary would recall only arguments favoring existence. The authors found a consistent, although statistically nonsignificant tendency for subjects to recall "attitude" confirming statements.

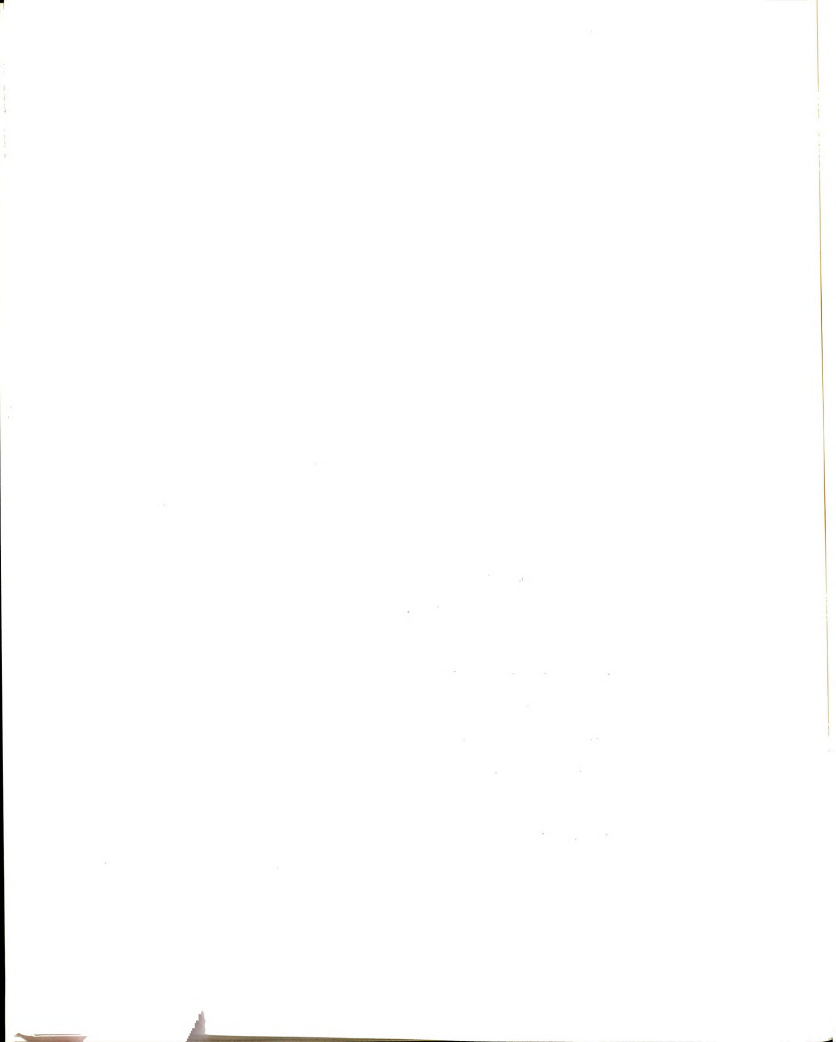
Arguing that this nonsignificant effect was in part, a function of Watson and Hartmann's poor manipulation of attitude, several other studies were undertaken in attempts to provide stronger evidence for the



attitude-as-cognitive structure hypothesis. Edwards (1941) divided subjects on the basis of their attitudes toward the New Deal and gave them pro-New Deal and anti-New Deal passages to read. Upon recalling these arguments, subjects demonstrated a statistically significant tendency for greater recall of attitude-consistent statements than for arguments that challenged their beliefs. Upon re-testing subjects three weeks later, Edwards found a "consistent, but statistically unreliable tendency" for subjects to forget information conflicting with their position. This forgetting differential was replicated by Levine and Murphy (1943), but again it was nonsignificant. Alper and Korchin (1952) employed different measures of recall in a similar experimental design and demonstrated different memory decay curves for the two measures. Only one measure showed evidence for the selective retention of attitudinal material.

It was not until Jones and Kohler (1958) posited their selective learning hypothesis that the attitude-as-cognitive structure would seem promising. The authors presented Anti-segregationist and Pro-segregationist subjects with plausible and implausible, opposing and supportive statements. It was proposed that individuals would learn best those statements that were plausible and supportive, and implausible and opposing. Presumably, the more useful the information in supporting one's own beliefs, the more likely that information would be recalled. Having "confirmed" their hypothesis, Jones and Kohler argued that subjects were performing a very "functional" task in that the manner in which they processed information served to protect their attitudinal positions.

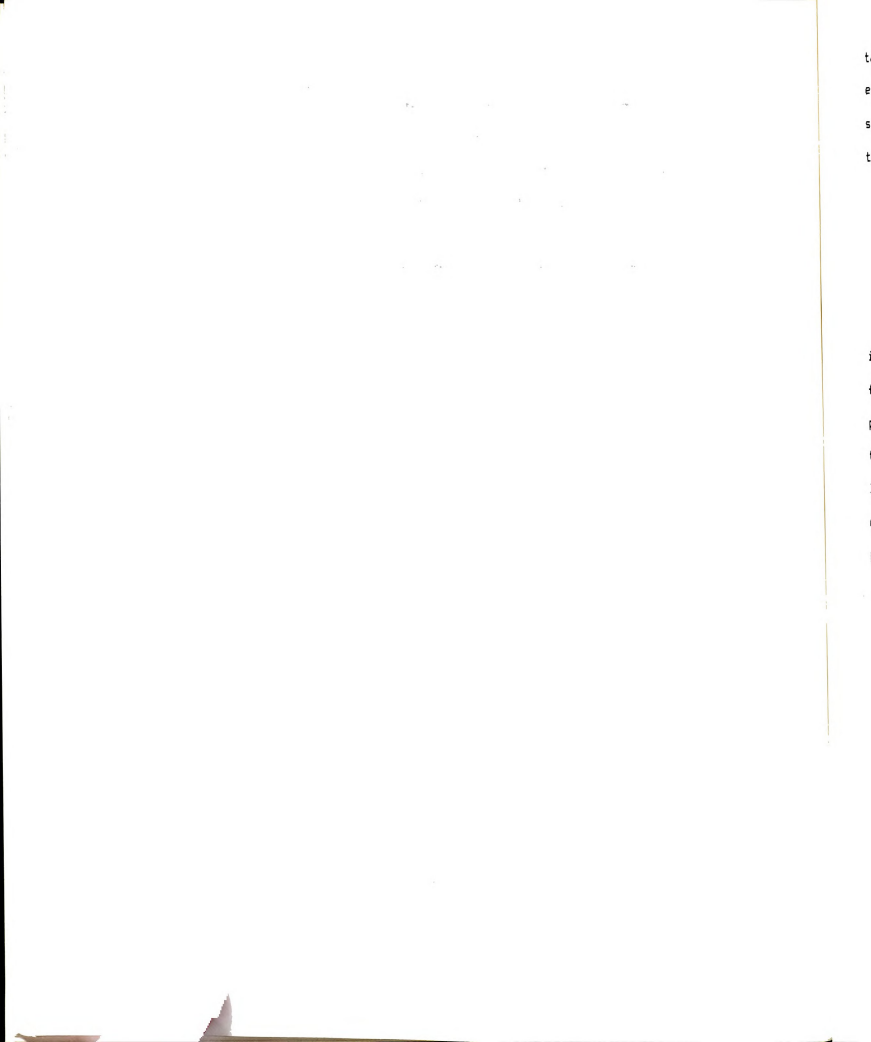
Unfortunately, validity of the attitude-as-cognitive structure hypothesis remained open to question. Waly and Cook (1966) attempted to



replicate of the Jones-Kohler study, but failed. In a cross-national study of northern and southern white students, again divided according to their favorability toward segregation, Waly and Cook did not confirm the Jones-Kohler hypothesis with regard to the plausibility of statements. Moreover, they also failed to find evidence for the selective retention hypothesis in two out of three studies.

In conclusion, Waly and Cook persuasively argued that subjects in previous research were differentially familiar with the arguments presented to them as a function of their initial attitudes. Thus, the Pro-segregationist, having had greater exposure to pro-segregationist arguments, could call on this familiarity in the recall of experimentally presented statements. What appeared to be differential memory then, might well have been differential familiarity. Waly and Cook further argued that in previous research (Jones & Kohler, 1958; Levine & Murphy, 1943), the issues relevant to the experiments were quite salient at the time the experiments were conducted. They point out that individuals may pay less attention to and as a consequence, may be less familiar with arguments about time-bound political issues when the controversy that surrounds them is resolved. Perhaps, in Waly and Cook's study the issue of segregation was no longer as important, and therefore, the apparent differential memory effect disappeared.

Moreover, differential familiarity does not seem to fully account for the failure of Waly and Cook (1966) to replicate past evidence supporting the biasing effects of attitudes. Greenwald and Sakamura (1967) also failed to obtain attitude selectivity effects in their study of the learning of confirming and disconfirming statements by college students classified as Hawks and Doves on the Vietnam war. More impor-



tantly, the authors failed to obtain any differential familiarity effects of the kind hypothesized by Waly and Cook. In essence, their study served to make the evidence for the attitude-as-cognitive structure hypothesis all the more obscure.

The Selective Retention Hypothesis:

Two Criticisms

The research reviewed above typically tested the hypothesis that an individual who takes a position on an issue should recall arguments favoring that position better than arguments that challenge it. This position appears untenable for two reasons. The first reason is conceptual, involving the utility of information that these studies had overlooked earlier. The second reason centers on the problem of measurement, since it is likely that subjects in the previous research were not properly selected into the different attitude groups, a flaw that might have seriously undermined the comparisons made between them.

It was a major premise of the early research on attitudes as well as the later cognitive dissonance literature that attitudes, if they are cognitive structures, are unipolar in nature. That is, one takes a stand on an issue and "fights to the death" to protect that stand. Thus, individuals should forget information that challenges their views because in some way it contradicts their supposedly well thought out position.

The selective exposure hypothesis derived from Festinger's theory of cognitive dissonance is even more extreme in viewing attitudes as unipolar structures. According to its proponents (Ehrlich, Guttman, Schonbach & Mills, 1957; Mills, Aronson, & Robinson, 1959), individuals

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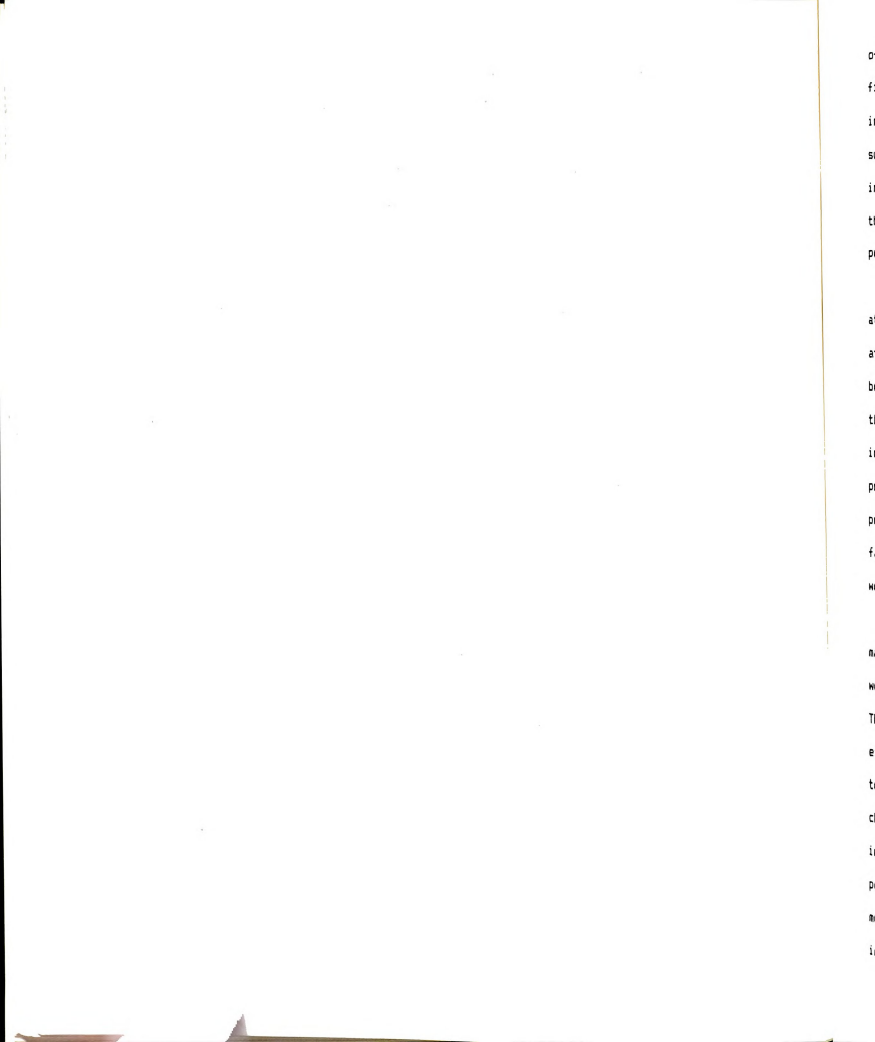
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are motivated to avoid information discrepant with their attitude, since to since such information could lead to dissonance, and possible attitude change. Thus, given a choice between supportive or challenging information, individuals will select to view only that which supports their position. In this way, cognitive dissonance may be avoided simply by choosing the correct argument to assimilate into one's own initial attitude without ever having seen the discrepant arguments. It appears that the evidence is even less convincing for selective exposure than it is for selective learning (cf. Sears, 1968).

The major conceptual flaw in both of these hypotheses is a functional one. Specifically, there appears to be no reason why individuals should better retain those arguments that confirm their beliefs. To be sure, evidence suggests that individuals are motivated to protect and defend their beliefs (Hovland, Janis and Kelley, 1953). But, what better way to do so than to expose themselves to and learn the challenging information? In order to make choices between political candidates or to argue their own position, individuals not only, should not avoid discrepant information, but should readily seek out and learn the opposition's arguments in order to counterargue and strengthen their own stand.

The research on communication and persuasion, while not directly testing this explanation, is highly supportive of it. Hovland et al. (1953) have shown that persuasive attempts may be thwarted by the learning of opposing arguments and then finding the weaknesses and flaws inherent in them as a defensive measure. Moreover, McGuire and Papageorgis (1961) have shown that refutation and counterargumentation are greater immunizers against persuasion than the simple strengthening



of a belief by learning statements consistent with the position. This finding is inconsistent with the proposition that avoidance of opposing information is functionally protective. Indeed, if the selective exposure and selective learning proponents were correct in their view that individuals will attend more to those statements that are supportive, there would be great difficulty in arguing against the opposing position.

Therefore, from a functional point of view, it would appear that attitudes are not unipolar organizers of information, allowing only attitude consistent statements to filter in. Rather, attitudes seem to be bipolar in nature, attuning individuals to information that refutes their beliefs as well as to information that supports them. The manner in which attitude relevant statements are remembered may be more a product of the utility of information rather than a simple filtering process. It is not entirely surprising then, that the early research failed to find strong differences in selectivity between individuals who were opposed to one another on a political issue.

Hillis and Crano (1973) considered the effects of utility of information on selective exposure. Subjects divided on the issue of abortion were told to give either a pro-choice speech or an anti-abortion speech. They were then given the opportunity to view as many statements favoring either position as they liked. The authors found that usefulness affected the statements that were chosen. Subjects who were to give the pro-choice speech spent significantly greater time viewing arguments favoring the pro-choice position, independent of their own preferred position. Similarly, anti-abortion speech subjects viewed more statements favoring that position, regardless of their preference. Most importantly, subjects who did not have to give either speech demon-

strated equal preference for both sets of statements regardless of their own attitudes. Equal utility of statements as in the earlier research would seem to lead to bipolar selectivity in exposure to information.

More recently, the notion that attitudes can be bipolar organizers of information has been developed by Judd and Kulik (1980). In an attempt to demonstrate that the failure of early researchers to obtain differential retention effects was a consequence of defining attitudes as unipolar, Judd and Kulik redefined an attitude as "an expectancy associated with both sides of an issue." Learning was defined not only as recall of statements, but also as reaction time taken to agree or disagree with them. Presumably, a greater response latency was indicative of a lower predisposition to encode the statement into memory. Judd and Kulik hypothesized that very agreeable and very disagreeable statements would receive a quicker response than those on which the subjects were not as polarized. Moreover, statements receiving an extreme responses would also have a higher probability of being recalled later.

Their results confirmed both predictions. Items on which subjects were highly polarized received lower reaction times and better recall than items on which subjects were more neutral. Moreover, Judd and Kulik present evidence that suggests that these results were not artifacts due to the greater ambiguity of neutral items, a possibility considered by Osgood, Suci and Tannenbaum (1957). The authors conclude that attitudes, indeed, have cognitive properties that lead to a predisposition toward learning both sides of an issue. That there were no differences between subjects who agreed and disagreed on the same attitude-relevant statement strongly suggests that attitudes are bipolar.

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The second major criticism of the earlier work stems from its lack of methodological rigor. Typically, the early studies divided subjects into attitudinal groups on the basis of their responses to attitude questionnaires. With only a single exception (Alper & Korchin, 1952), subjects were selected from a larger initial pool only if their responses were at the extreme ends of the attitude pretest. Usually, this procedure entailed performing a median split on the larger sample and then selecting the subjects at either extreme.

There are several problems associated with this procedure. First, use of a single measure of an attitude is likely to be psychometrically inadequate. Common to almost all of the early studies (and several more recent ones), individuals simply gave responses on a single seven-point Likert type scale. Where more than one scale was used to divide subjects, scale reliabilities were not reported. Nunnally (1978) discusses the problem as one of a lack of multiple measures. Since attitude measures contain an error component as well as a true score component, multiple measures of the same concept can be used to "triangulate" on the true score component and cancel out the errors in measurement. A single measure will likely be a poor indicator of the underlying attitude. Thus, it seems likely that the single-item measures used in previous research were not sufficiently precise.

A related problem concerns the interface of the individual's subjective belief about an issue and the response measured "objectively" on the questionnaire. Recent research in the area of psychophysics and social scaling (Lodge, 1981) suggests that given a Likert type scale with seven-points, two individuals may have differing beliefs on an issue and yet mark the same scale value. For example, a value of "6" may mean "favorable" to one individual while suggesting "leaning toward

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favorability but somewhat neutral" to another. Thus, early researchers may have had rather heterogeneous groups of subjects in each of the attitude groups they had constructed, only some of whom may have identified themselves with the attitude indicated on their measure.

Although Judd and Kulik's findings suggest support for the organizational properties of attitudes, their measurement procedures did not specifically address these methodological criticisms. Rather, their techniques actually avoided these problems altogether. In a sense then, the Judd-Kulik methodology did not allow for a "fair" test of the selective retention hypothesis. It will be recalled that they did not categorize their subjects into attitude groups, but had them rate and recall only individual statements. While statements receiving agree and disagree responses were better recalled, it is possible that it was the extremity of response toward the statements that led them to "stick in the subject's mind" irrespective of the subject's attitude on the issue. Certainly, one indication of an attitude is an extreme response. However, given the authors' measurement techniques, the independent impact of the subject's attitude cannot be assessed, since they did not explore the extent to which recall or reaction time were related to the extremity of the subject's own attitude.

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Attitudes as Social Categories: A Rethinking of the Attitude Construct

It would seem that a straightforward demonstration of the selective retention hypothesis would need to first address the criticisms raised above. As noted, Katz (1960) argues that attitudes serve both a knowledge function, attuning individuals to both sides of an argument, and an ego-defensive function, protecting individuals from information that challenges their beliefs. Taken together with the evidence provided above, it seems reasonable to suggest that attitudes have both unipolar and bipolar properties. The question, then, involves determining the conditions under which each attitude mode is most likely to occur. For example, when are attitudes most likely to operate in a unipolar, and ego-defensive manner; and when are they more likely to exhibit a bipolar tendency in the organization of information?

If the functional argument is correct, attitudes should organize information in a manner that will be most useful for the individual at a given moment in time. If the person is faced with both challenging and supportive information, he or she may retain all such information in an effort to counterargue and defend the belief. On the other hand, information that is challenging to the attitude may be selectively forgotten if its utility value for counterargumentation is low and only tangentially relevant. Therefore, the first criticism is that, perhaps in an attempt to demonstrate the unipolar selectivity of attitudes, early researchers may have failed to recognize the impact of information utility and as a consequence of failing to control for it, obtained a bipolar organizational effect instead.

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If bipolar information processing is a consequence of equal utility of information, it would seem necessary to eliminate the knowledge-utility attitude function in order to demonstrate its ego-protective function. As a result of eliminating utility effects, the attitude bipolarity noted by Judd and Kulik (1980) should not mask any motivational tendencies that lead individuals toward differential retention of information as theorized by the early research. If, however, this line of thinking is not correct, and information utility is not the key to understanding attitude bipolarity/unipolarity, then attempts to control for the utility effects should continue to lead to bipolar rather than unipolar information organization.

Central to the concern of the measurement criticism is the problem of identifying individuals who share the same attitudinal position. Perhaps the null findings may be explained, in part, by a lack of subject identification with the category "anti" or the category "pro." Although individuals may select the extreme endpoint of a scale to indicate their beliefs, the issue used for subject selection may not have been particularly important to the subjects in terms of their self-identification. An individual who is against abortion, for example, may not perceive him or herself to be an "anti-abortionist" if he or she does not use the abortion issue as a means of defining people. Such a person could not be expected to demonstrate selective retention of abortion-belief confirming information since for him or her the issue is not very ego-involving (cf. Sherif & Hovland, 1961).

One means of remedying the ego-involvement problem, as well as addressing the psychometric difficulty concerning multiple measurement, would be to employ two measures of the individual's attitude on an

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issue. The first measure would consist of a scale similar to that used in previous research. Subjects whose responses fall at the end-points of the scale would then meet half of the criteria to be selected for the subsequent study. These responses alone, however, would be insufficient for selection purposes. The additional measure to be employed as a means of subject selection would consist of a simple one-item question that would ask individuals to place themselves in one of three categories: pro, anti, or neutral. This item would be intended to check the self identification of subjects with their attitude position. Individuals selected for the subsequent retention study would have to meet both criteria. "Pro-segregationist" subjects, for example, would need to make an set of extremely favorable responses on a set of "segregation" items and identify themselves as "Pro-segregationist." "Anti-segregationist" and "Neutral" subjects would then be selected in the same manner. In no case, could a selected subject fulfill only one of the requirements.

Such a procedure makes explicit the assumption of earlier research that individuals identify themselves by the political beliefs they hold. In a sense, the selective retention hypothesis advanced by Jones and Kohler (1958) and others was not concerned with attitudes as measured by continuous linear scales. Such a hypothesis would have argued that the stronger the belief on a political issue, the greater the retention of belief consistent statements. Although Judd and Kulik (1980) indirectly examined the this particular question by examining the relationship between belief extremity and statement retention on a statement-by-statement basis, the early researchers were more interested in the general effects of membership in a social category, as defined by extremity of attitude response. This point is supported by the fact that

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the early authors systematically selected out from the initial pool any subject who did not score near the end-points of the attitude scale. Individuals who were less "pro" and less "anti" were likely not the focus of the selective retention hypothesis.

Therefore, a better test of the selective retention hypothesis would involve a the use of the term "attitude category" rather than "attitude." While "attitude" refers to a combination of affective, cognitive and behavioral components, "attitude category" will refer to the label an individual would use to describe his or her social identity. For the present purposes an "attitude label" or a statement of one's belief, will be defined as a specific instance of a general "social category." It is hypothesized that individuals who identify with one of the attitude categories will exhibit characteristics similar to those demonstrated elsewhere in the more general social categorization literature. If it can be shown that selective retention of information operates when other categories are used, perhaps similar techniques will be appropriate to demonstrate the cognitive-structural properties of attitudes as social categories.

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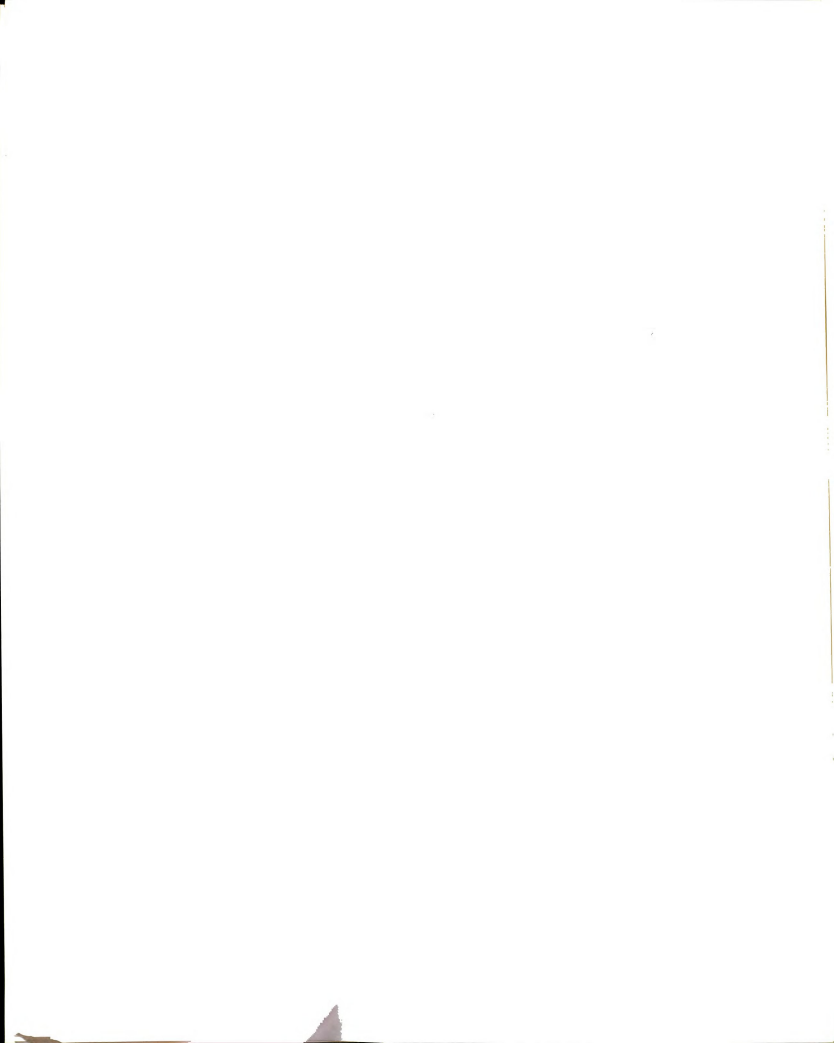
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The Heuristic Value of Social Categories in the Processing of Social Information

Recently, there has been an increased interest in the manner in which individuals make use of social information that they receive about themselves and others. Kelley (1973) describes the individual as an "intuitive scientist" who attempts to make sense of reality by making judgments about others, explaining their behavior and then predicting the behaviors that they will likely express in the future. Unlike the "real scientist" however, individuals often make many errors due to their incapacity to take in infinite amounts of social information that might lead to a correct judgment. As a result, there is strong reliance on available cues that will simplify the process.

It is important to note that while these cues are often present in the external world, individuals also possess heuristics that are internal to their cognitive system. Although they ease the process of encoding and storing social information, heuristics also tend to bias and color the information that is stored and later retrieved. Snyder (1981) notes that heuristics often take the form of expectations that an individual has formed about the way in which social phenomena occur.

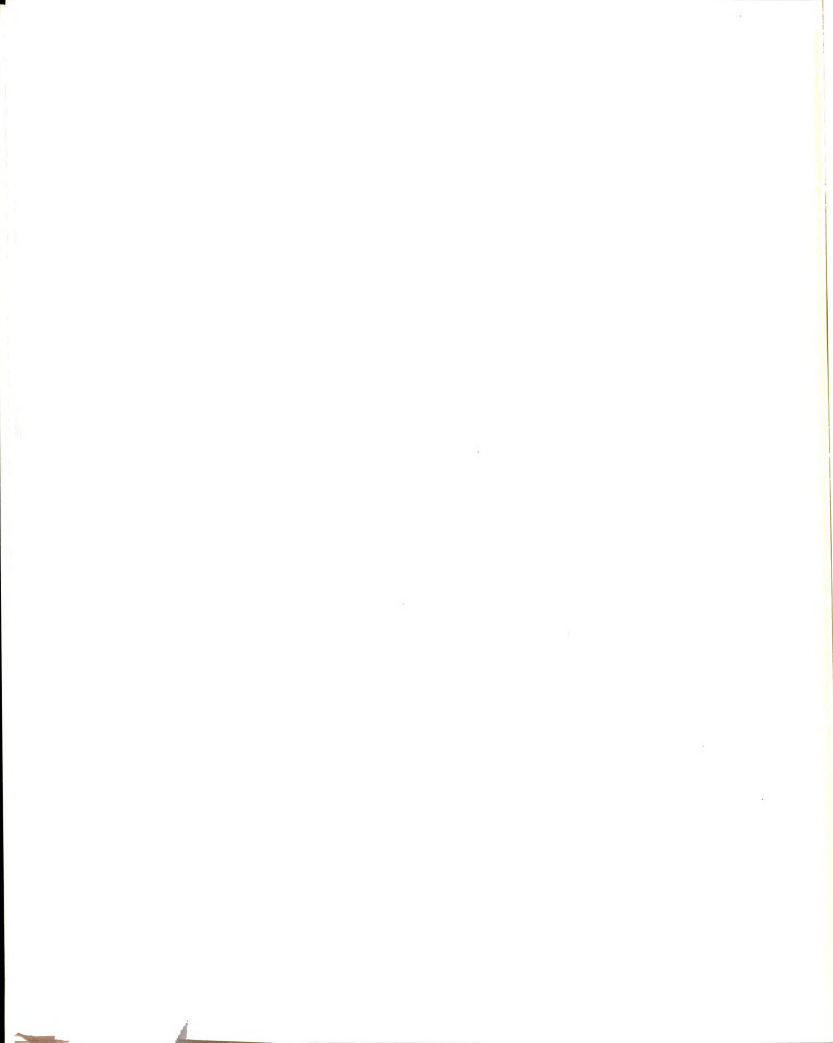
The need to simplify the social environment also has been found to affect the manner in which individuals organize their social world. Once again, limitations on the capacity to store infinite amounts of social information often lead people to classify and categorize objects or people according to some salient characteristic and to encode the classified representation, rather than the actual distinct features of the object.



One result of the categorization process is the the loss of the unique features that define the people being classified. Rothbart, Fulero, Jensen, Howard and Birrell (1978) have shown that subjects will encode trait information about individual members in a group in a manner that tags the trait to all members of the group. In this study, subjects were given information about four members of a group called the "Dallonians." Each of the four members was paired with a favorable or an unfavorable trait. Subjects who saw the two unfavorable members twice as often as the favorable were more likely to make negative attributions to the "Dallonians" than were subjects who saw the favorable members twice as often as the unfavorable. Although the only difference between the subjects' conditions was the frequency with which they saw individual members, attributions to the group differed as a result.

The social categorization process is not limited to contrived categories. Much recent research suggests that categorization occurs on the basis of almost any visible physical characteristic (Granberg, Jefferson, Brent & King, 1981; Taylor, Fiske, Etcoff and Ruderman, 1978). Typically, subjects are given information about several individuals who are members of different races or genders. After viewing the information, they are asked to match the information to the target from whom it originated. Results demonstrate that subjects are very accurate in their recall of the social group membership of the target, but were inaccurate with respect to recalling the individual target. That is, subjects maintained distinctions between the groups but confused the members within each group.

Of major importance in the research on social categorization and intergroup behavior is the concept of "minimal groups." By arbitrarily



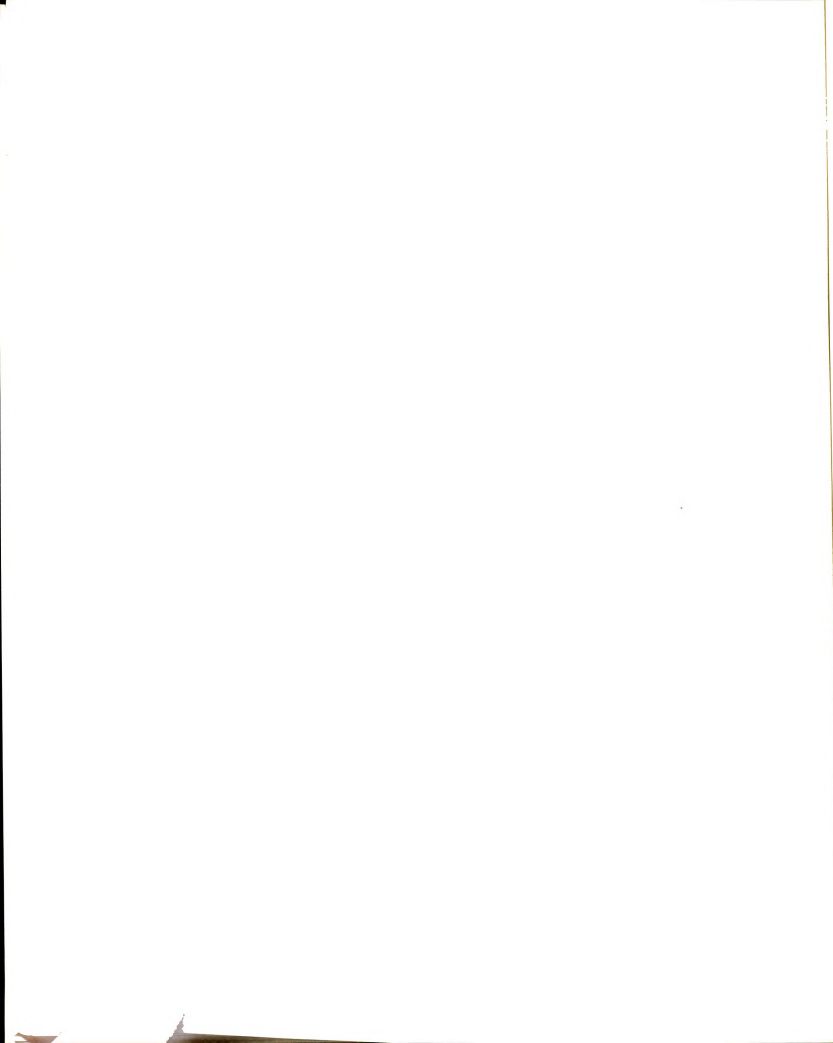
assigning individuals to one of two groups such that the group labels provide only nominal information, individual members tend toward rating their own group's members more favorably than those of the outgroup (Billig & Tajfel, 1973; Rabbie & Horowitz, 1969; and Tajfel, Billig, Bundy & Flament, 1971). What makes this phenomenon so interesting is the robustness of its effects in light of the meaninglessness of the group labels.

Very recently, the emphasis in the minimal groups research has moved from the study of the behaviors that are a consequence of the ingroup favorability bias (Tajfel & Billig, 1973; Turner, 1975) to the impact of minimal group membership on the cognitive organization of information. Wilder and Allen (1978), for example, randomly assigned subjects into two groups, allegedly on the basis of their preference for one of two paintings. After completing a subsequent attitude questionnaire, subjects were given the opportunity to view two types of information from four potentially informative arguments. The arguments suggested that the individual subject was either similar to the ingroup in attitudes, similar to the outgroup, dissimilar to the ingroup and dissimilar to the outgroup in attitudes.

By and large, subjects selected the arguments that suggested that they were similar to the ingroup and dissimilar to the outgroup in attitude preferences. Thus, by simply placing subjects into meaningless categories, Wilder and Allen obtained the "unipolar" selective exposure effect that had eluded attitude researchers only a decade before. Individuals, for whatever reason, once categorized, had an expectation that members of their own group were similar to them-selves. Most importantly, they acted on this expectation by selecting information that would support it.

Particularly relevant to the selective retention hypothesis in the early attitude research is a much discussed study by Howard and Rothbart (1980). Subjects were categorized into two groups, ostensibly based on their estimates of the number of dots on several slides. Members then sorted sets of favorable and unfavorable self-disclosure statements (supposedly collected from previous subjects who were similarly categorized) into two sets: those from their own group and those from the outgroup. Howard and Rothbart found that subjects tended to attribute more favorable statements to their own group while attributing more unfavorable statements to the other group. More importantly, these individuals demonstrated an even stronger tendency to incorrectly recognize more favorable and less unfavorable statements as originating from the ingroup members as compared to the outgroup, even when they were initially presented with an equal number of favorable and unfavorable statements as having come from both groups.

What appears to be most interesting is that whether the categories are real and meaningful, as in the case of race, or arbitrary and meaningless, as with painting preference, the outcome seems to be the same. Between group differences and within group similarities are overestimated. Moreover, individuals appear to minimize the psychological distance between themselves and group members who share their label, while maximizing the distance between themselves and outgroup members.



Attitude Categories as Cognitive Structures

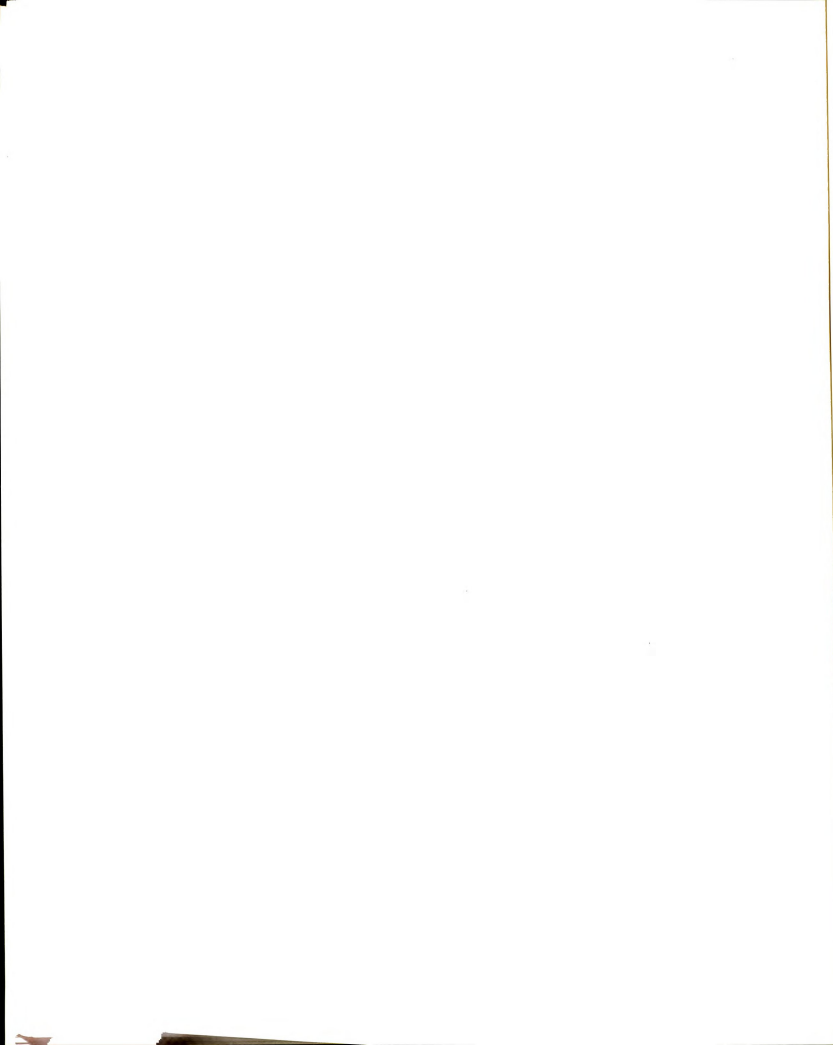
A review of the literature on selective retention of attitudes and on social categories suggests that there are many similarities between the predictions made for each. It has been shown that membership in a social category can lead to both selective exposure and selective retention effects. Given these biases, it appears warranted to state that social categories probably help structure the social world for the individual. They seem to have heuristic properties that bias the individual in the search for and encoding of information. To this extent, social categories are likely to be specific forms of cognitive structures. In many respects, social categories demonstrate many of the properties mentioned by Zajonc (1968) and Lingle and Ostrom (1981) in their definitions of the term.

It is important to note that in each case where selectivity biases were found, the individual felt a strong attraction and social identification with the ingroup. It may be the case that cognitive structures that have motivational consequences for the self (i.e., protecting the ingroup and oneself) will lead to selectivity to a greater degree than those that do not. If the failure of the previous attitude research to get selectivity effects was due, in part, to a lack of social identification with the scale position, then attitude categories, as conceptualized above, should lead to effects similar to those found by Wilder and Allen, and Howard and Rothbart. Recall that in the present study, subjects had to respond at the extreme of the attitude scale and also identify with the groups, "Pro" or "Anti." In other words, members of

an attitude category should demonstrate selectivity biases toward information in a manner similar to subjects in the minimal groups research.

Heider's balance theory serves to illustrate how selectivity would operate in attitude categories. If two individuals, P and O, agree that abortion is a favorable concept (insofar as women should be permitted to have one), the P-X and O-X bonds are positive in valence. Heider's theory would predict then, that they should see each other in a favorable light, that is, a positive P-O bond. This bond, if sufficient in magnitude, could conceivably lead to an identification or unit bond between the two individuals. In contrast, if P and O disagree on the same issue (i.e., a positive P-X and a negative O-X bond), a negative P-O relation would be expected.

Therefore, individuals in agreement with person P would tend to see him or her in a favorable light. In contrast, individuals in disagreement with P should tend to see him or her as much more unfavorable. Conceivably, as a result of identification with the attitude category of person P (e.g., pro-choice abortion), ingroup members' favorable evaluations of person P would likely lead them to expect that P is capable of more favorable and fewer unfavorable behaviors than someone with whom they disagree, a member of the outgroup. Since the selectivity biases in minimal group categories, demonstrated by Howard and Rothbart (1980), were due to an expectancy on the part of subjects that the ingroup is better than the outgroup, it seems likely that the expectations generated by Heider's theory would have the same consequences for attitude-categories as well.



Study 1: A Test of the Attitude-as-Social

Category Hypothesis

With attitude categories conceptualized as specific instances of more general social categories, it is possible to determine whether they share the cognitive properties demonstrated in minimal group research. If individuals categorize themselves on the basis of such meaningless labels as "overestimator/underestimator" or "Klee/Kandinsky," it would seem that categories like "Pro-gun control" and "Anti-gun control," whose meanings presumably carry more weight, could also be used in the organization and storage of incoming social information. Moreover, these attitude labels should generate expectancies about those who share the label (i.e., agree) versus those whose label differs (i.e., disagree).

Behaviorally, individuals divided according to their attitudinal positions demonstrate the same tendencies as subjects in minimal groups research. Tajfel, Billig, Bundy and Flament (1971) found that members of minimal groups selected a payoff ratio that would maximize the payoff of the ingroup to the outgroup. In a similar manner, Farina, Chapnick, Chapnick and Misti (1972) have shown that individuals behave in a manner more favorable toward others who share their ideological beliefs, while behaving antagonistically toward individuals whose beliefs oppose their own. Greater levels and durations of shock were used by subjects to "teach" a confederate when they believed that he was of the opposing political ideology than when he shared their beliefs.

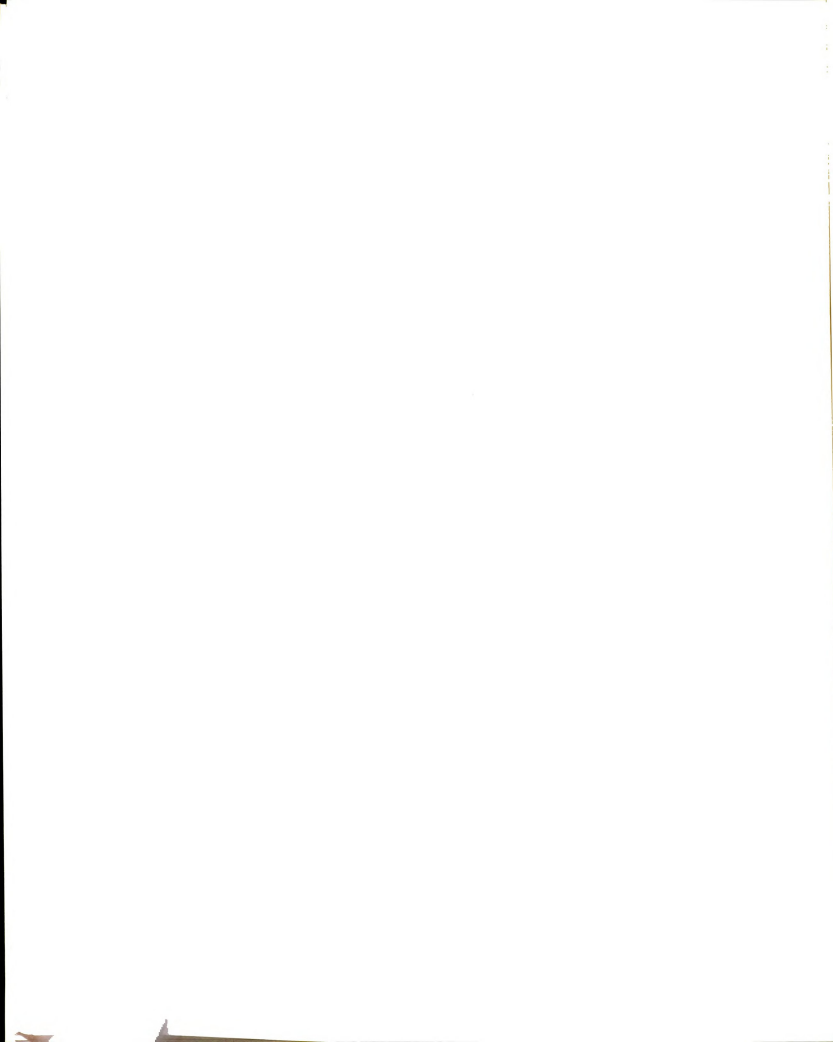
If attitude categories lead to differential behavior toward ingroup



and outgroup members in a manner similar to that found for minimal group categories, then the cognitive-organizational biases in the processing of information about attitude category membership would seem also to parallel the biases found in minimal groups research. It is predicted that individuals can and will, under the appropriate circumstances, demonstrate the use of attitude labels as a means of cognitively organizing social information relevant to the category. In order to support this contention, it will be necessary to show that membership in an attitude category will lead to differential memory for information that confirms or disconfirms the expectations that are generated.

Specifically, it must be demonstrated that individuals actually process social information in a manner consistent with the predictions of Heider (1958). Individuals should remember information that suggests characteristics favorable toward their own attitude category and unfavorable toward the opposing category. By the same token, categorized individuals should also show poor retention of information that would imply characteristics either favorable to the opposing category or unfavorable to their own. Sentis and Burnstein (1979) have found that balanced cognitive structures are more easily encoded and accessed than imbalanced ones. The question to be considered is whether the cognitive bias toward balanced structures may be found when the individual is directly included in the balance relationship.

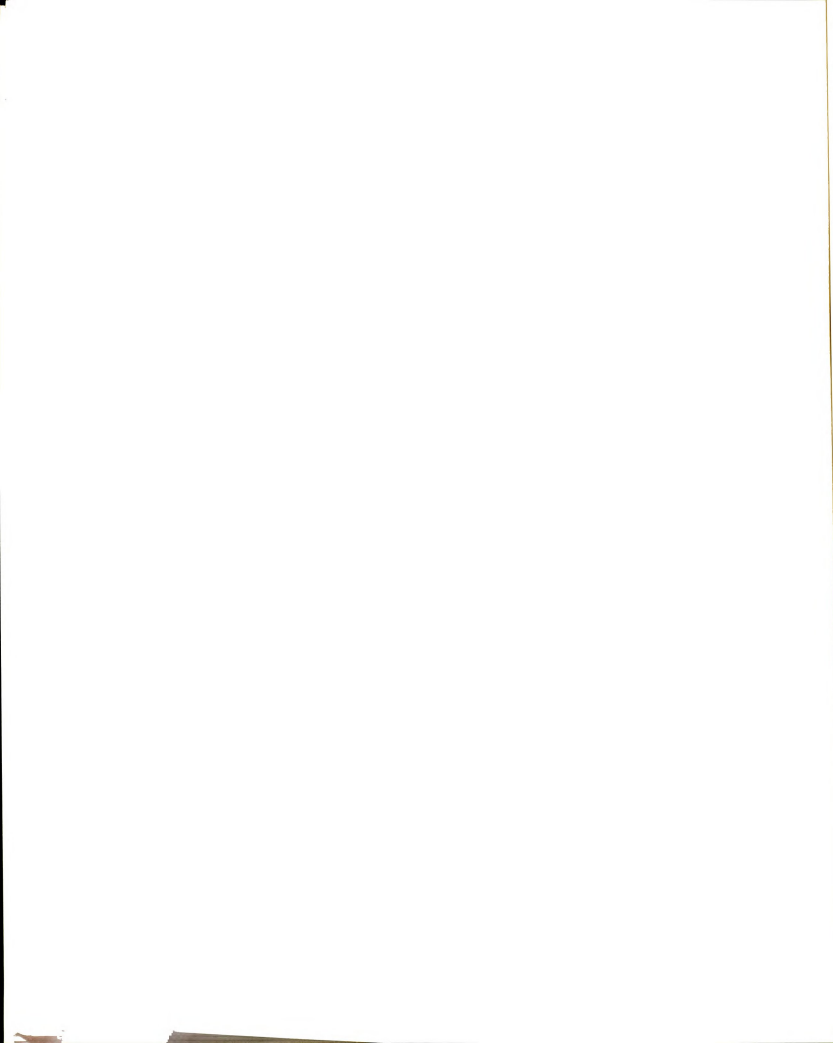
It should be emphasized that the predictions made in the present study are not identical to those made in earlier research on the selective retention hypothesis. Whereas the early studies focused on the retention of information that possibly could have been useful to subjects in the sense of counterargumentation and bolstering of their position, the information in the present study will bear only on the



personal qualities of the individuals in the attitude groups. It does not seem likely that learning of favorable qualities about people sharing one's attitude category would help substantiate the attitude itself. Given the control of information-utility, it will be possible to conduct a fair test of selective retention due to the unipolar "ego-defense" property of attitudes suggested by Katz (1960), without invoking the bipolar "knowledge" function based on utility.

Furthermore, the earlier attitude researchers did not consider the question of whether subjects who were neutral on an issue would demonstrate a lower retention of attitude-relevant information than either of their attitudinal counterparts. With the noted exception of Edwards (1941), the early selective retention proponents typically compared only the memory scores of subjects who polarized at the extremes of a political issue. It would seem that if attitudes do demonstrate cognitive-structural properties, neutral individuals, presumably lacking a position on a political issue would demonstrate no selectivity bias in the retention of issue-relevant information. In the language of Markus (1977), neutral individuals should be "aschematic" on the attitude dimension, and will therefore, lack any means by which to process incoming attitude information.

This contention would seem likely regardless of the utility of the information for attitude holders. The presentation of statements supportive of either side of a political issue may be useful to subjects who may be looking to counterargue and defend their position. However, the retention of any such argument is probably of little use to individuals who do not have any feelings about the issue one way or another. Although Edwards (1941) found only non-significant differences in reten-



tion of New Deal arguments by pro-New Deal and anti-New Deal subjects, he did note that neutral-New Deal subjects retained fewer total arguments than either attitude group.

If retention of actual attitude-relevant arguments is lowest for neutral subjects, then it seems plausible that their retention of information about the members of attitude categories could be no higher. By definition, neutral individuals do not fit into either of the attitude categories, and therefore, should exhibit a lack of bias toward either category's membership. Wilder (1981) has found that, relative to subjects categorized into one of two minimal groups, non-categorized subjects did not differ in their expectations of targets identified as members of one group or the other. If the concept of "neutrality" on an issue parallels "non-categorization" in minimal groups, neutral individuals would be expected to demonstrate little bias toward retention of information favorable or unfavorable to either attitude category. The lack of a cognitive structure necessary to processing category relevant information should result in poorer retention altogether.

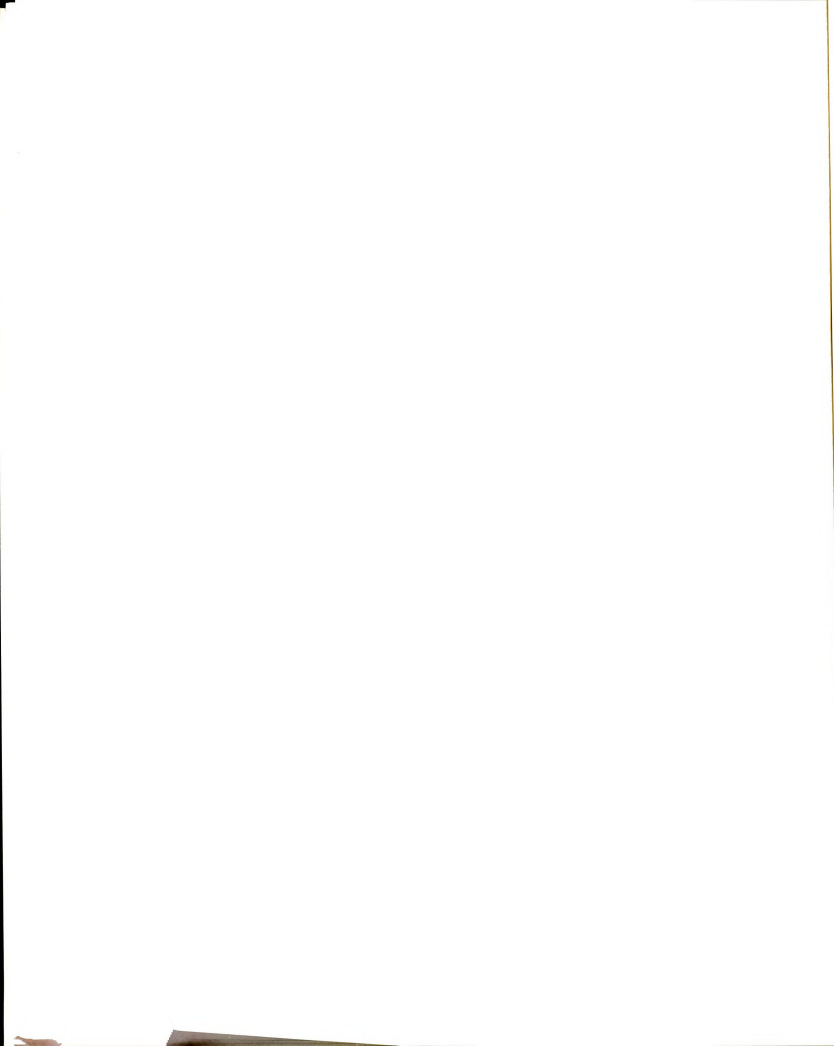
To summarize Study 1, subjects will be categorized into three distinct groups: Pro, Anti, and Neutral. Using an attitude questionnaire, it will be possible to identify the members of the groups on the basis of their scale responses and a measure of their self-identification with one of the "attitude categories." It is expected that due to the cognitive-structural properties of the categories and the low utility of information, the members of the two attitude groups will demonstrate a bias toward retention of information that confirms expectations generated by their membership. Neutral subjects, lacking any expectations about the category members will display little bias and a lower retention of information.



The Measurement of Memory

Typically, the research on memory has employed one of two methods for measuring the retention of information. One technique involves the simple recall of information presented. Subjects review various amounts of stimuli and then are asked to list all the different things that they can remember in any order. Srull (1984) suggests that while the recall technique is valuable for investigating the organizational properties of information, two problems make its use inappropriate for a variety of situations. The first difficulty associated with using free recall is that it is very insensitive to all but the largest of memory effects. So, for example, if one is investigating the difference in memory of information between relatively small intervals of time, differences in recall may be too small to be statistically reliable. Thus, the probability of Type II error, the likelihood of rejecting an alternative hypothesis when it is true, is increased dramatically using a free recall measure.

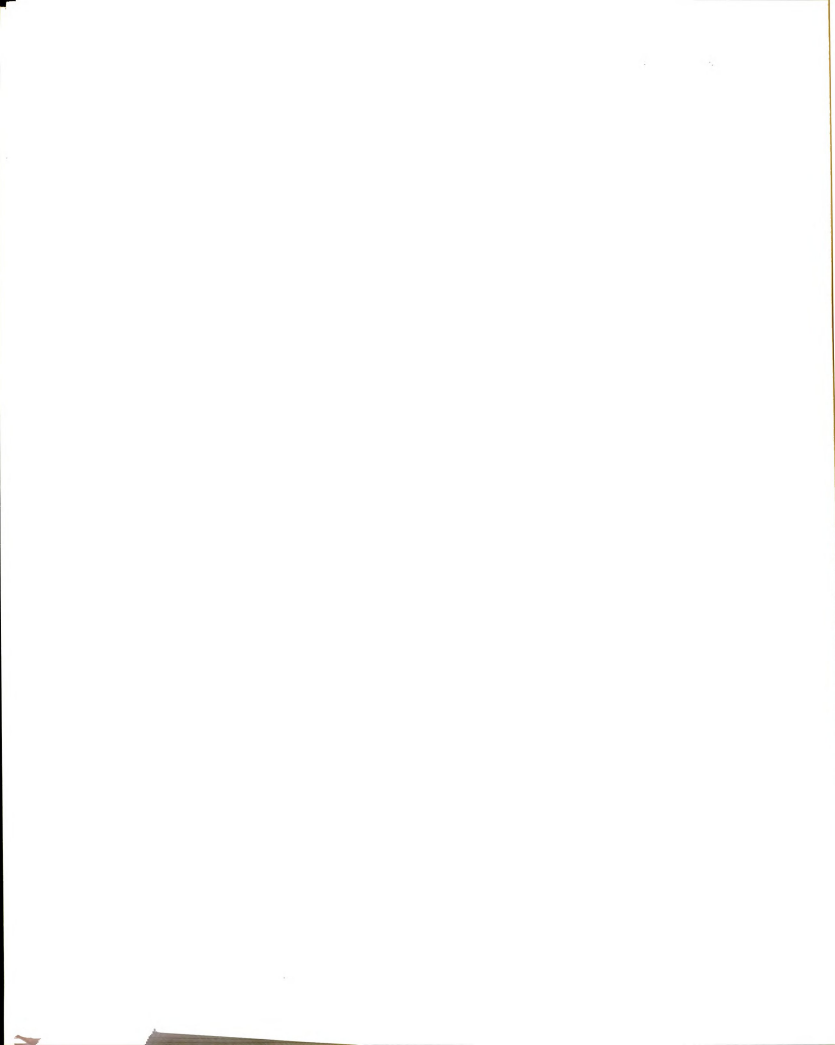
The second problem with the use of the recall technique involves an ambiguity in measurement. According to Srull (1984), there is no clear means of operationalizing a "correct response" made by the subject. This problem stems from the fact that the unit of analysis in a recall measure may consist of a sentence, a phrase, a word, or a syllable. If, for example, a subject read a paragraph that argued in favor of a political position and was then asked to recall the statements made, it is unclear whether the dependent measure should be equal to the number of complete sentences, or the number of phrases written. The measure



used could conceivably make for a large difference in the conclusions to be drawn since the number of correct recalls per subject could be counted in a very stringent or a very liberal manner.

As a consequence of the problems associated with recall, Srull (1984) advocated an alternative measure of memory, the recognition task. Investigators employing this procedure generally give the subject the same stimuli as those who use the recall technique. However, the recognition task differs from recall in that the subject is not required to reproduce any of the stimuli. Instead, subsequent to viewing the information, the subject is given a list containing the items previously seen plus additional items called "distractors." The task, then, asks the subject to discriminate between the original items and the new items. The major advantage of the recognition task is that differences in memory due to an experimental manipulation have a higher probability of detection than would be the case with free recall (cf. Crowder, 1976). In contrast to recall responses, the recognition responses are much easier for the subject to make. Srull (1984) warns, however, that while the recognition task has been extremely popular in social cognition research, it often has been used improperly and with an inadequate understanding of the mathematics involved.

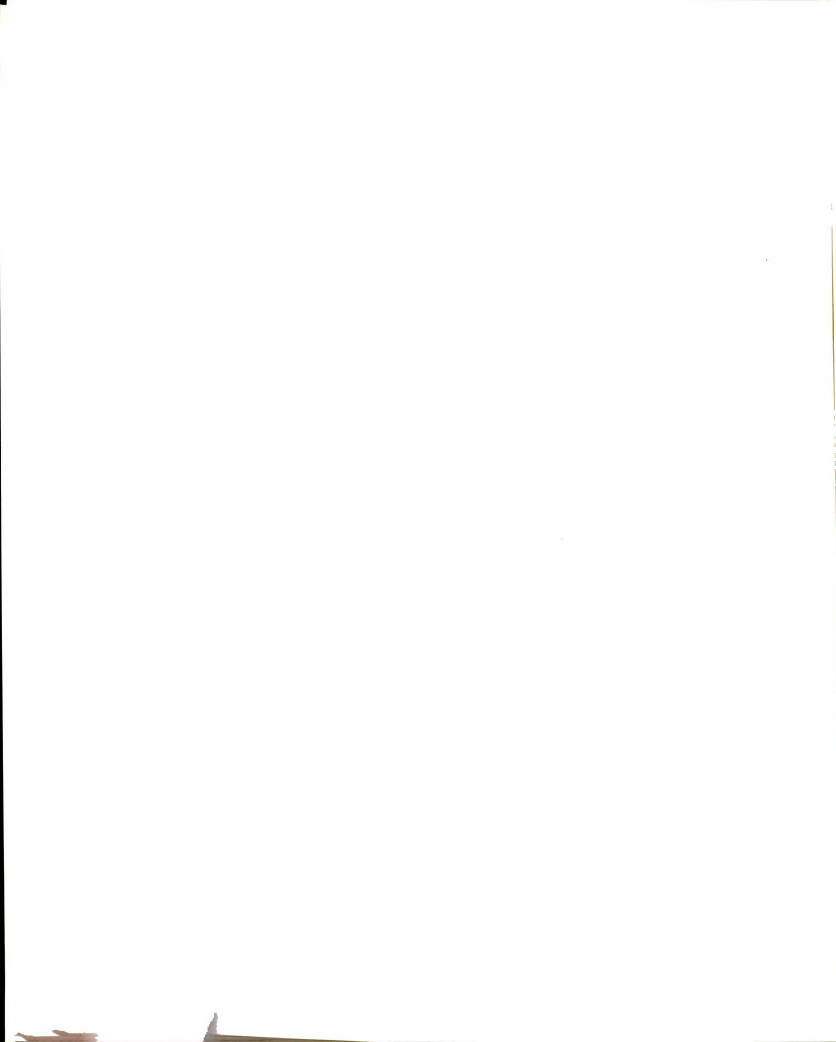
The memory measure employed by Howard and Rothbart is a good illustration of how misunderstandings of the recognition task may lead to erroneous conclusions. It will be recalled that the authors divided subjects into minimal groups and presented them with favorable and unfavorable statements made by members of each group. Subjects were then given a list of the statements plus distractors and were asked to identify which statements they saw with the group that made them. Subjects were initially presented with 24 statements from each group: 16



favorable and 8 unfavorable. Although no explanation was given for the difference in number of each type of statement, one may guess that the authors were aware that unfavorable or negative information is more easily remembered (using either recall or recognition measures) regardless of the context of presentation (see Kanouse & Hanson, 1971). To control for this difference in their study, the Howard and Rothbart simply doubled the number of unfavorable statements recognized by each subject.

Although this correction makes the data appropriate for analysis, it does not make theoretical sense. In fact, it may actually "stack the cards" in the authors' favor. Howard and Rothbart found that subjects recognized a significantly greater number of unfavorable statements having come from the outgroup than from the ingroup, supposedly demonstrating a "bias" in memory for confirming information. It should be pointed out, however, that the recognition for favorable statement from either group did not differ. Perhaps, if the number of unfavorable statements presented to subjects was increased so as to be equal to the number of favorable statements, the "bias" demonstrated might look different. Hymes and MacCoun (1982) have attempted to replicate the bias using an equal number of favorable and unfavorable statements with little success.

A more crucial flaw in the Howard and Rothbart (1980) study stems from the calculation of recognition scores of the subjects. The authors define the notion of an "accuracy" score as the "conditional probability that an item was correctly assigned, given that it was recognized as having been presented." The subject's task was to decide first whether each item had been presented and then, if it had, identify the group



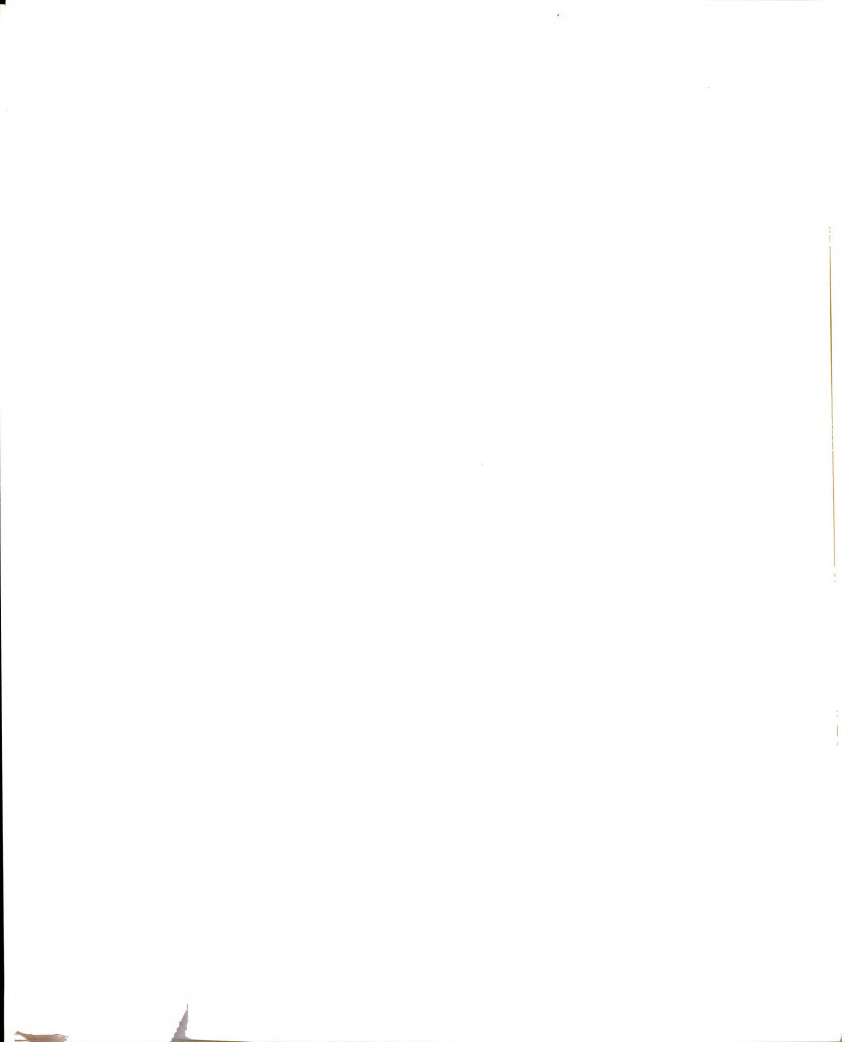
with which it had been presented. In numerical terms, the formula for accuracy is computed for each subject four times: ingroup-favorable, ingroup-unfavorable, outgroup-favorable, and outgroup-unfavorable. For each one of these four recognition scores, then, the formula is as follows:

$$\text{Accuracy} = \frac{\text{number of statements correctly placed}}{\text{total number of statements recognized correctly or incorrectly (assigned by subject to either group)}}$$

It should become immediately clear that the authors' formula involves only items that the subject recognized. Items that, for whatever reason, were lost in memory are not considered. This is a potentially dangerous loss of information in data analysis. It cannot be determined the extent to which information that was "forgotten" in memory was theoretically important.

A subtle but even more problematic situation arises when comparing accuracy scores across subjects. By their very nature, conditional probabilities involve denominators that might not be equal across subjects or conditions. To the extent that denominators in a comparison of two values are not equivalent, problems in interpretation of those values are likely to arise. Two subjects whose correct placement of statements differs substantially from each other could conceivably obtain identical accuracy scores.

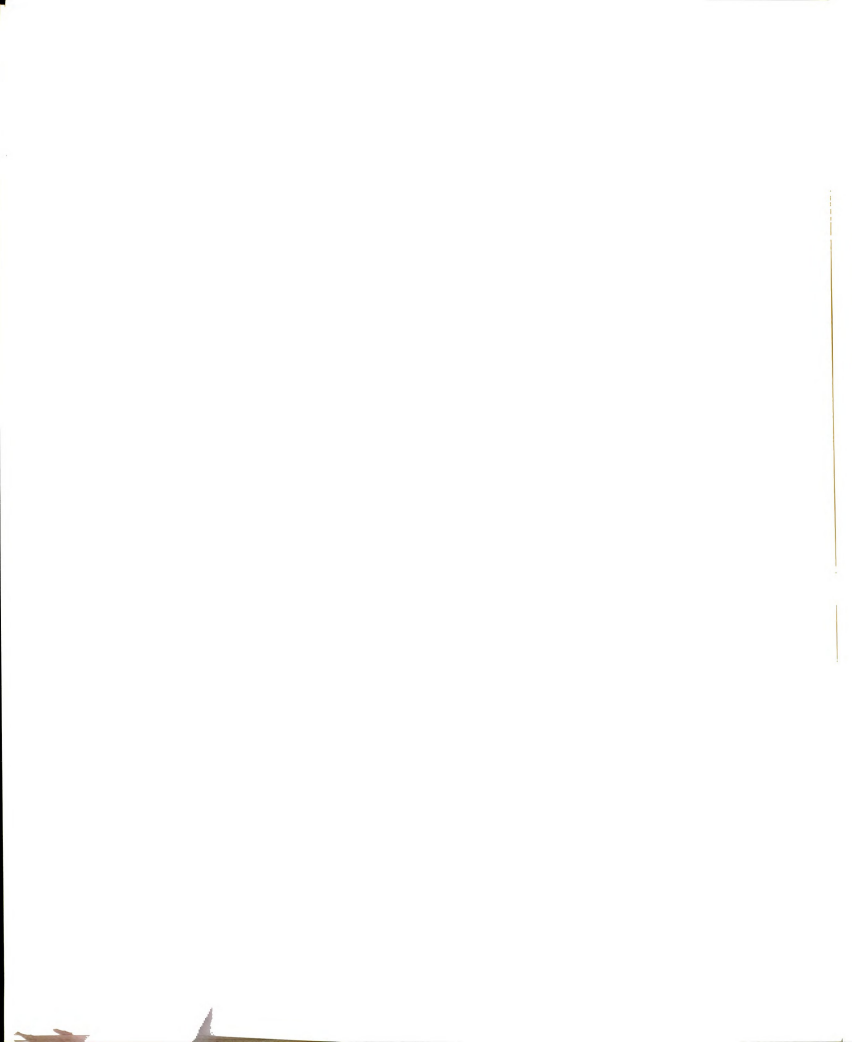
Take, for example, an extreme case in which a subject recognizes only a single unfavorable statement as having been presented. By chance alone, the subject places this statement correctly with the outgroup. The score for this subject would 1/1, or 100% accuracy. Moreover, this



individual's score would be equal to a subject who recognized and correctly placed eight unfavorable statements in the outgroup (eight is the maximum to be recognized). The worst scenario, however, could occur when a subject correctly places seven unfavorable statements in the outgroup, having recognized the eight possible. This person would receive a lower accuracy score (accuracy = .875) than the subject who recognized only one item, but placed it correctly!

Perhaps, the Howard and Rothbart measure is an adequate indicator of accurate placement of statements. However, their formula falls short as a reasonable measure of recognition memory. For one thing, there is no means of correcting for subjects' guessing the correct statement placement, a factor that Srull (1984) argues is most important in using recognition tests. Moreover, the accuracy values themselves represent only "correct" responses, given subjects' recognition of the statements. They are not direct measures of subjects' ability to discriminate between statements that were actually presented and statements that were not.

In brief, the measurement techniques discussed above are seemingly questionable and may have led the authors to fallaciously conclude that membership in social categories can lead to selective retention of confirming information. It should be pointed out that while Howard and Rothbart's specific procedures may have been flawed, their overall experimental design was a reasonable means by which to examine differences in recognition memory for social information. However, future use of the design will require a different statistical procedures to validly test the hypotheses of particular relevance to recognition memory.

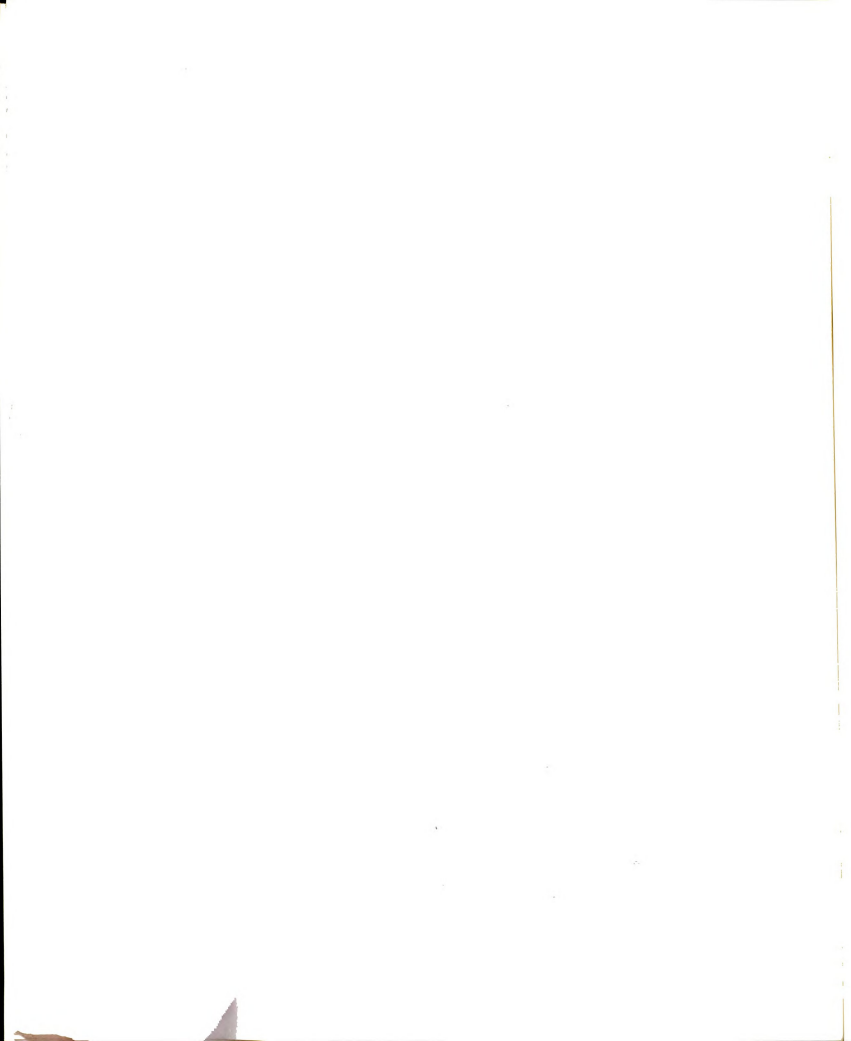


The Theory of Signal Detection

Although several methods have been advanced for the analysis of experiments involving recognition data (cf. Murdock, 1982), Srull (1984) argues most strongly in favor of the theory of signal detection (TSD). He notes that unlike other techniques, TSD is a most versatile tool for many different kinds of data, while remaining robust with respect to the violation of statistical assumptions. Originally developed by psychologists interested in the area of auditory and visual perception (Swets, 1959), TSD has become increasingly popular in the study of social-cognitive processes (Cohen, 1981; Hartwick, 1979).

The most simple experimental approach to the use of TSD is the Yes-No recognition task. A subject is given a large set of items to learn, read or simply view. After a specified interval of time spent performing another task, the subject is then given a list containing the original items plus an additional set of "distractors," items not previously seen in the initial set. He or she is then asked to decide whether the items on the present list are "old" (previously seen) or "new" (distractor items). It has been found that this technique is most effective when the distractors are conceptually equivalent to the original items, and are probably drawn from the same item pool (Bahrick & Bahrick, 1964).

If the original items are defined as "signal" and the distractor items are defined as "noise," the recognition task can generate four possible outcomes. A decision matrix illustrating these outcomes is presented in Table 1. Note that the item that was originally presented



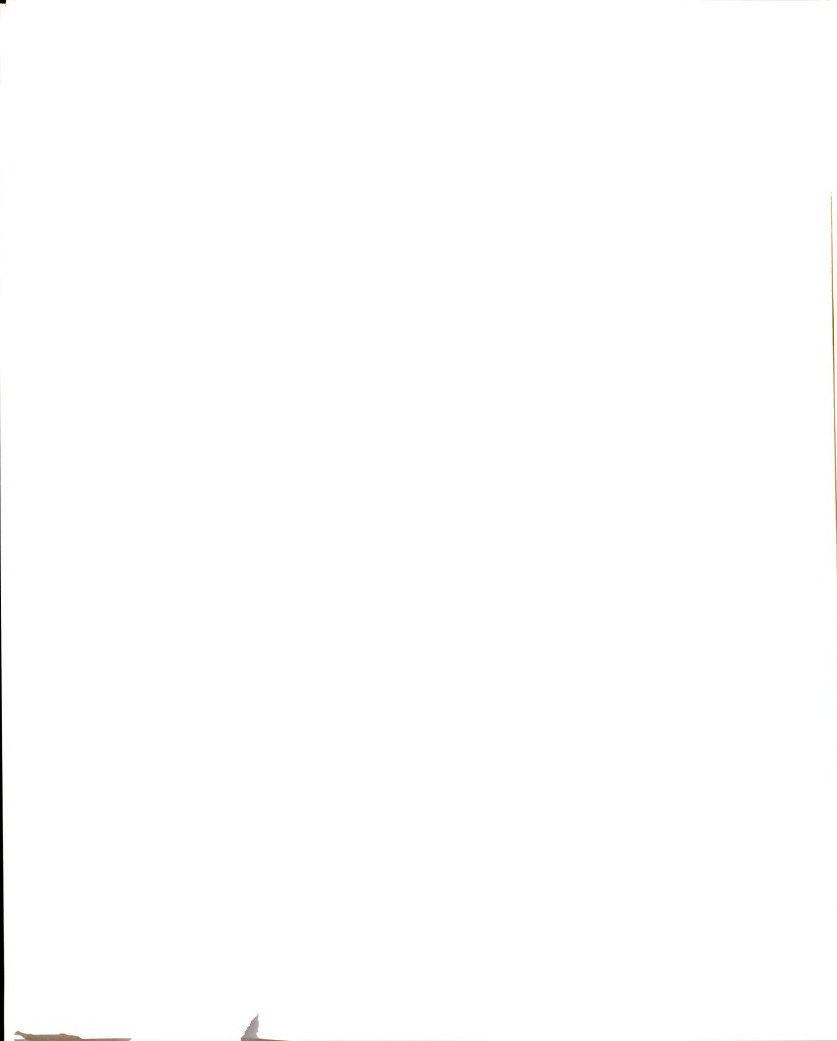
is denoted by an "S" and a distractor is denoted by an "N." Similarly, a response by the subject that the item was "present" is denoted by an "s" while a "not presented" response is denoted by "n."

Table 1. A Decision Matrix of Possible Outcomes in the Yes-No Recognition Task

Stimulus Item Event	Subject's Response on Recognition Task	
	"s" (old item)	"n" (new item)
"S" (old item)	HIT	MISS
	$P(s S)$	$P(n S)$
"N" (new item)	FALSE ALARM	CORRECT REJECTION
	$P(s N)$	$P(n N)$

As may be seen from the Table, the subject may make two types of correct responses: hits and correct rejections. A "hit" is made when the subject gives the response that the item was originally presented when, it actually was. In a sense, the subject is giving a "signal" response, given that a "signal" was presented. Alternatively, a "correct rejection" is made when the subject accurately responds that the item was a distractor. This is equivalent to giving a "noise" response to an item that was not presented, or was part of the "noise" set.

In a similar vein, subjects may also make two types of error responses: misses and false alarms. A "miss" is made when the subject gives a response that the item was "not presented," when in reality it was. Such a response is analogous to stating the originally presented item was a "distractor" or "noise." Finally, a "false alarm" occurs

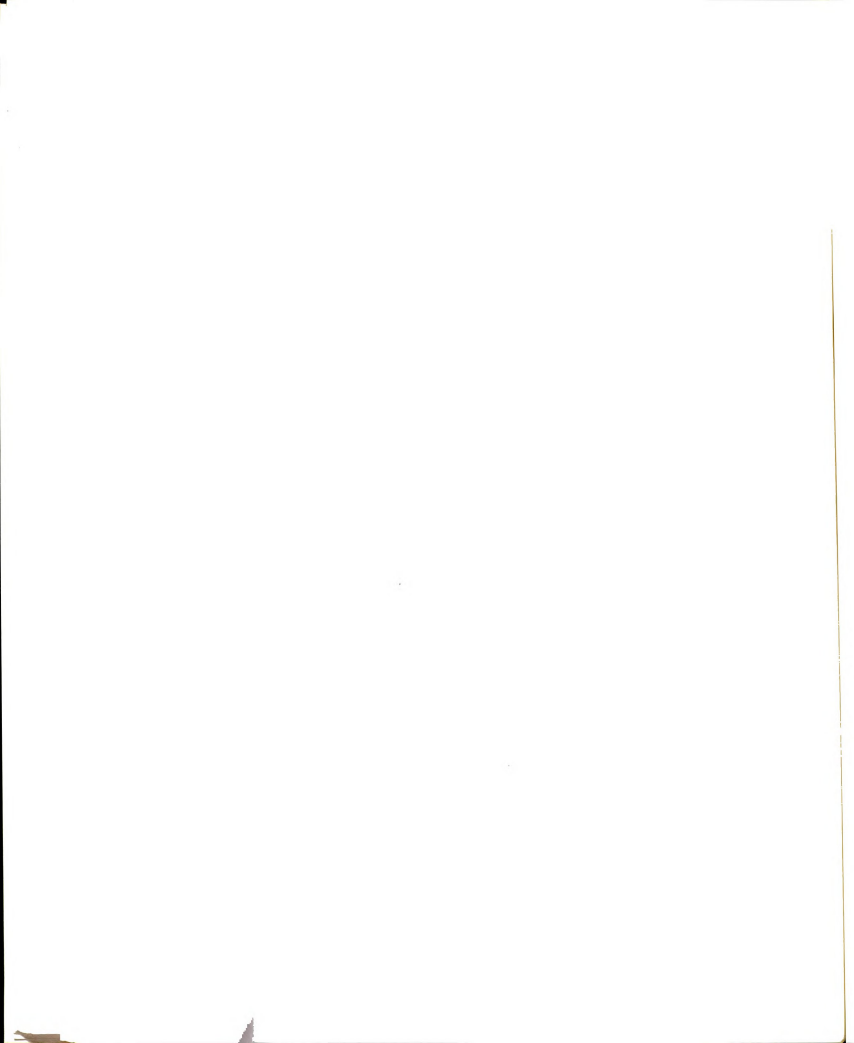


when the subject responds that an item was "presented," when in fact it is a "distractor," or "noise."

A statistically useful property of the recognition matrix is that the four responses may be expressed as conditional probabilities. As presented in Table 1, for example, a subject's "hit rate" may be defined as the likelihood that he or she will say "signal," given that the item was indeed an item that was originally presented. Since conditional probabilities must always sum to unity, the entire matrix may be summarized as two values. If a given item is, in reality, a "signal", the subject can respond only with "s" or "n". Thus, a summation of the probabilities $P(s|S)$ and $P(n|S)$ is equal to "1." As a consequence, the values $P(s|S)$ and $P(s|N)$ alone are sufficient to represent the results of the recognition task (i.e., the "hit" and "false alarm" rates).

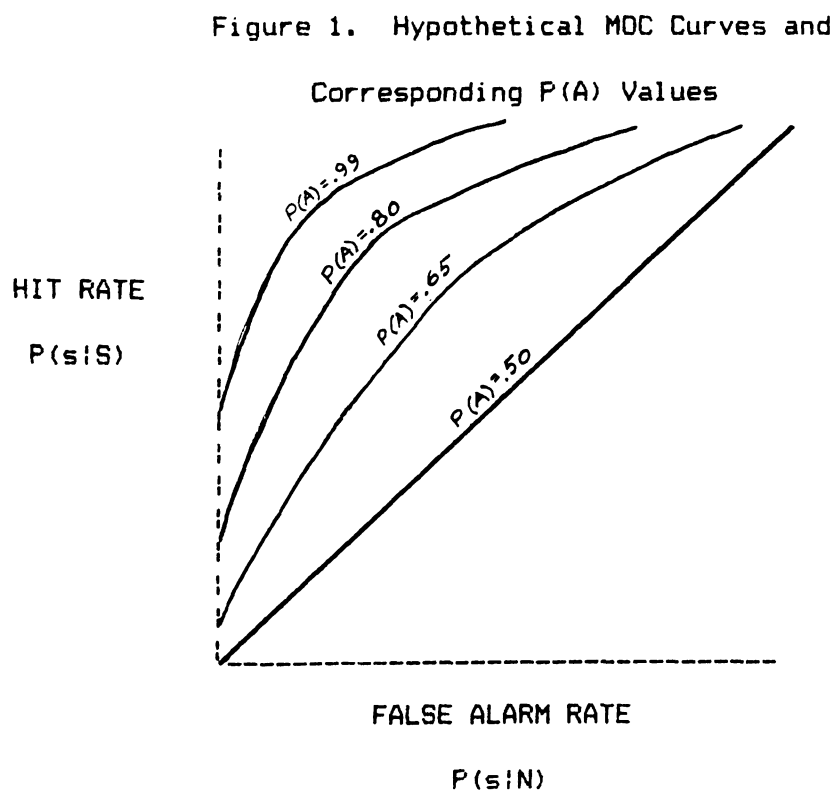
One measure of memory associated with the recognition task is called the memory operating characteristic curve (MOC). Put simply, the MOC curve is a graph of the ratio of "hit" to "false alarm" rates over many separate recognition trials where each trial involves a different criterion toward signal. McNicol (1972) points out that while the number of trials needed to graph the MOC curves varies across studies, the minimum usually approximates 500 to 1000 or more! For this reason, he discusses the use of an approximation to the MOC curve which requires only a pair of "hit" and "false alarm" rates.

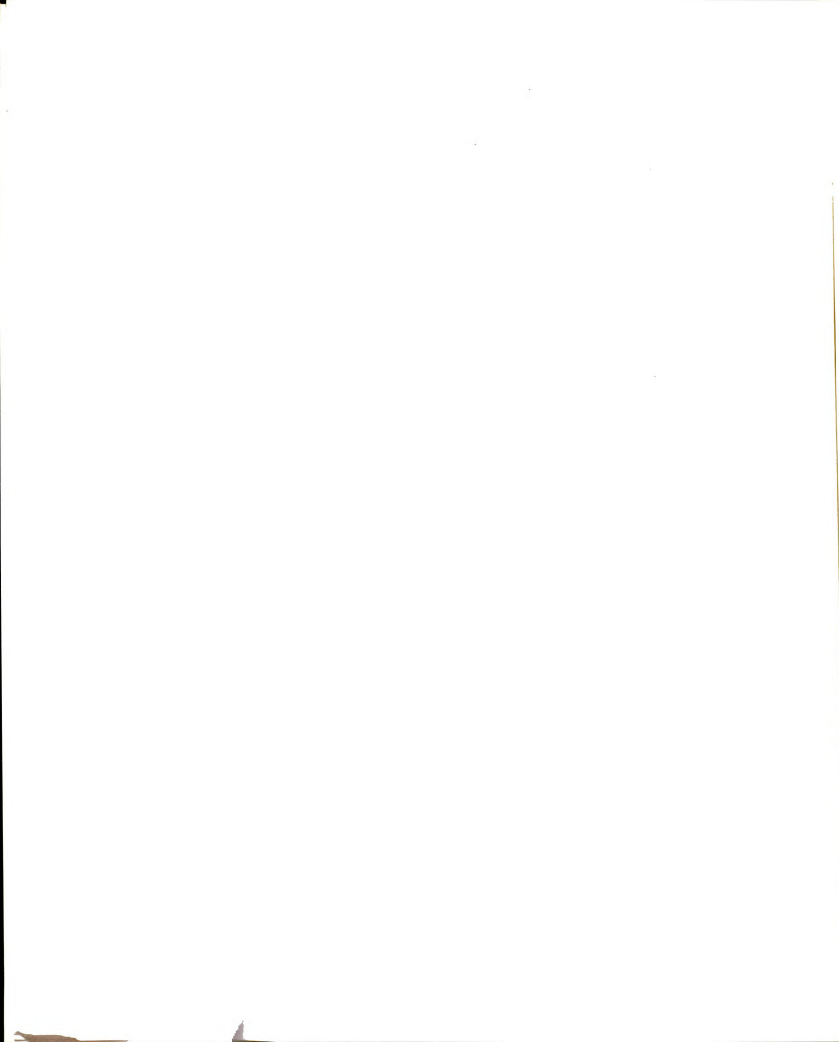
In terms of TSD, the MOC curve and its approximation are useful for evaluating the "strength" of an item or items in long term memory. The greater the area density under the MOC curve, the greater the subject's recognition of items presented. "Strength" may vary as a function of the "type" of item being considered (e.g., negative items are usually stronger than positive items), whether or not it has been previously



seen (i.e., items previously seen are assumed to have a greater strength), the memory capacity of the particular subject, or some interaction of any or all of these variables.

There are two methods of evaluating the MOC curve for each subject. The first method, denoted as $P(A)$ is a single value equal to the entire area below the MOC curve. $P(A)$ is expressed as a probability in a manner analogous to the probabilities associated with the "normal curve" used in statistical tests of hypotheses. Figure 1 presents a hypothetical set of MOC curves and their corresponding $P(A)$ values. Note that the "Y" axis is the "hit" rate, $P(s|S)$ and the "X" axis depicts the "false alarm" rate, $P(s|N)$. A straight line drawn from the origin represents the value $P(A) = .50$. Points plotted along this line

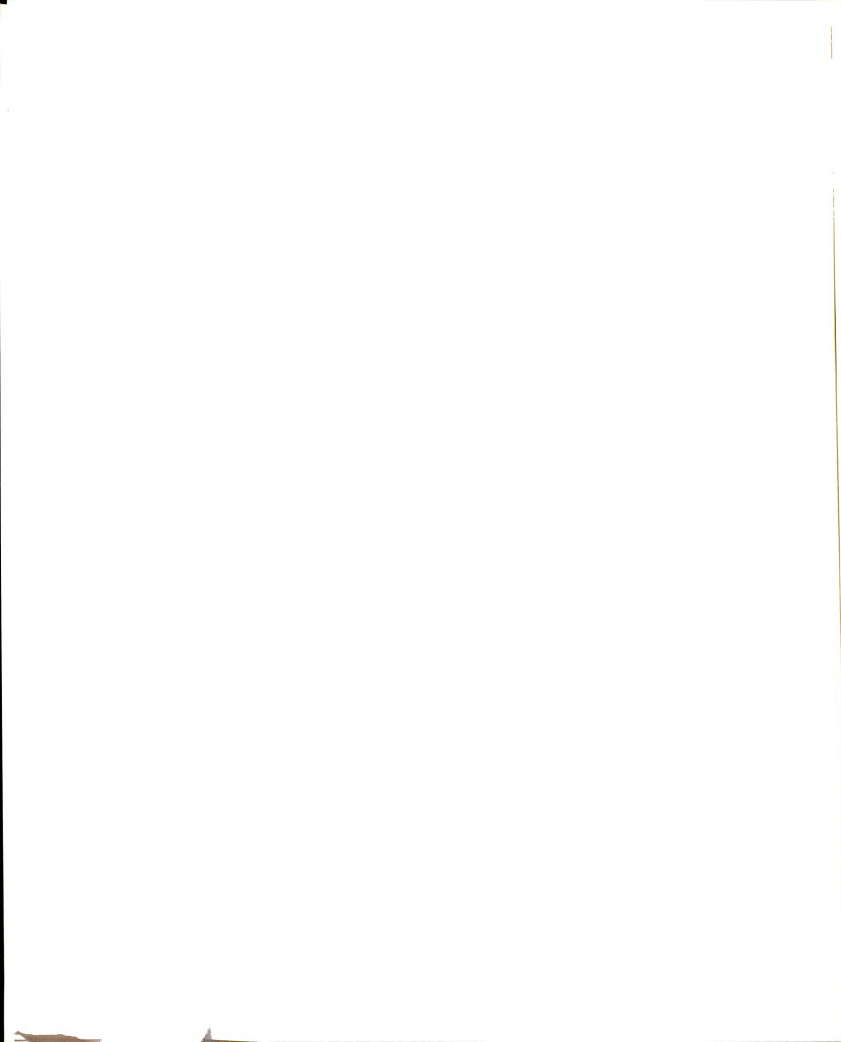




indicate that the subject is making an equal number of "hits" to "false alarms," or operating at chance level. Subjects who operate at $P(A) = .50$ are said to be unable to discriminate between old items and new items. As the height of the MOC curve moves upward from the line, $P(A)$ increases and, as can be seen from the Figure, the ratio of "hits" to "false alarms" increases, indicating that the subject is making many more "hits" without increasing the number of "false alarms."

Thus, the value $P(A)$ represents the "sensitivity" of the subject to the items presented. The larger the value of $P(A)$, the more "hits" the subject is making relative to the number of "false alarms," and therefore, the greater his or her ability to discriminate items presented from items not presented. Likewise, the smaller the value of $P(A)$, the number of "hits" being made are fewer relative to "false alarms," suggesting the person is operating at a worse than chance level in discrimination.

In an intuitive sense, $P(A)$ is an assessment of the "memory" component involved in the recognition process. Srull (1984) suggests that $P(A)$ and its parametric counterpart " d' ," discussed below, "may be influenced by such factors as meaningfulness of the items, interest value in the new information, processing strategies and goals of the subject, and length of the delay between the time in which the new information is acquired and the time at which it is tested." Thus, the ability to discriminate between the items presented and the distractors not presented is dependent upon the the strength of the memory trace of the items. Since item strength in part, will be a function of whether the subject is "cognitively tuned" to the particular items, a higher item sensitivity will be indicative of the attention given to the item.



A popular alternative to $P(A)$ involves the estimation of various population parameters on the basis of theoretical distributions of "signal" and "noise." McNicol (1972) defines the value " d' " as the difference between the means of the distributions of signal and noise, denoted as " $P(S)$ " and " $P(N)$," respectively. As a measure of sensitivity, " d' " is interpreted in precisely the same way as $P(A)$. Statistically, however, its meaning is somewhat different. Put simply, the value " d' " represents the standardized distance between the signal and noise distributions in standard deviation units of noise. The larger the " d' " value, the greater the distance between the two distributions and the more discriminable is the signal from the noise.

Figure 2 displays the hypothetical distributions for various values of " d' ." When the signal and noise distributions overlap, the value d' is equal to 0.0, meaning that the subject cannot distinguish the signal-old items from the noise-distractors. As can be seen from the figure, when the value of d' grows larger, the "strength" of the signal distribution increases, pushing it farther apart from the noise distribution. It is important to remember that it is not the signal distribution alone that determines sensitivity (i.e., the mean of the signal distribution), rather it is the distribution of signal relative to the distribution of noise that determines the subject's " d' " value.

Although both $P(A)$ and d' measure a subject's sensitivity to the items on a recognition task, they have very different purposes. If a researcher has reason to suspect that the assumptions of normality and homogeneity of variance have been violated, conclusions based on d' become tenuous. However, since $P(A)$ is not based on the distributive

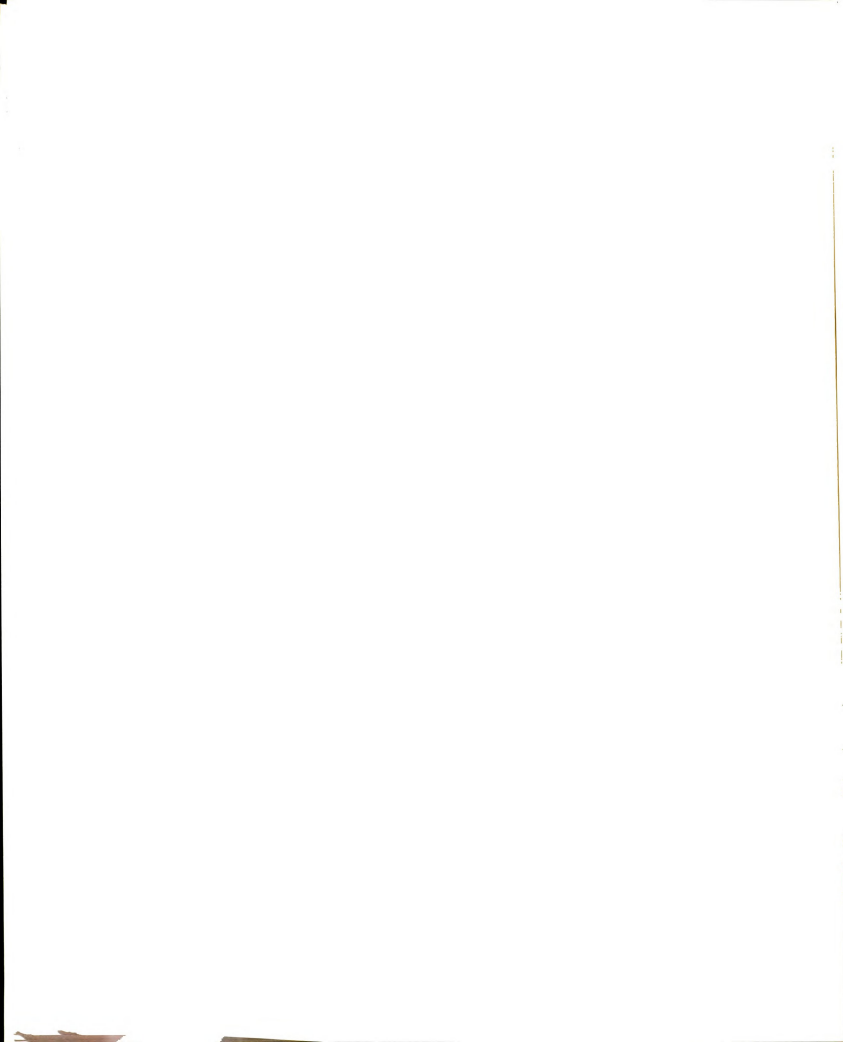
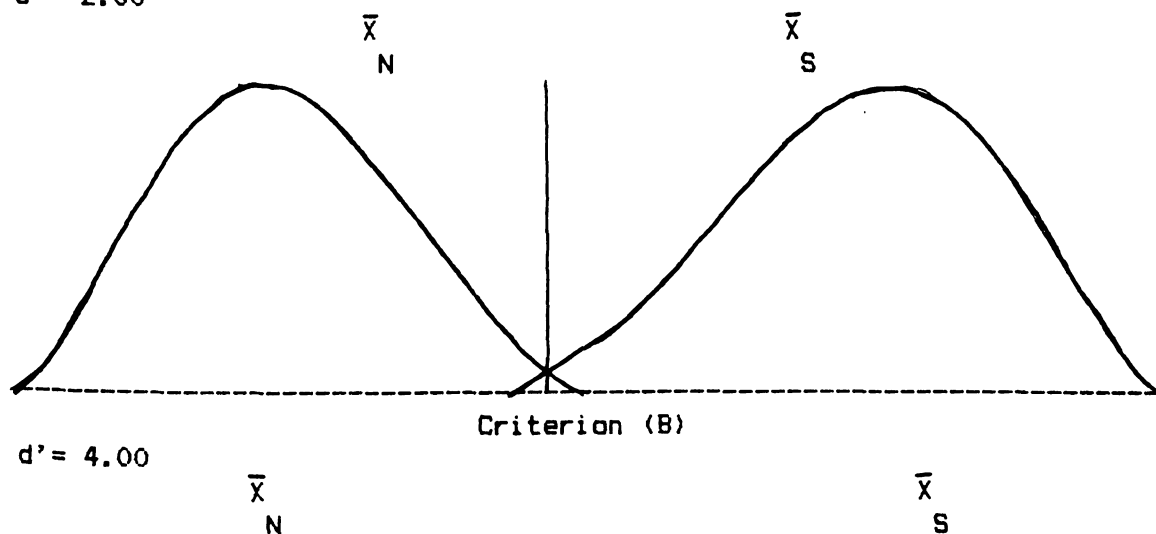
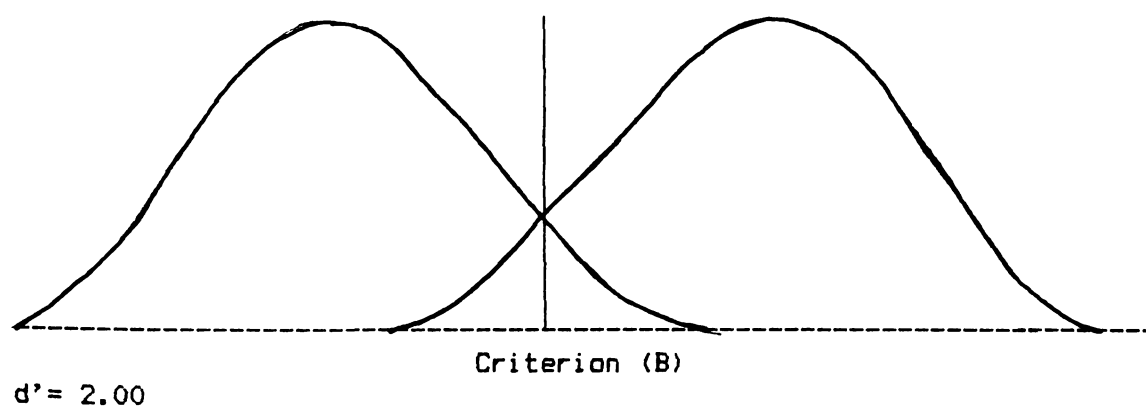
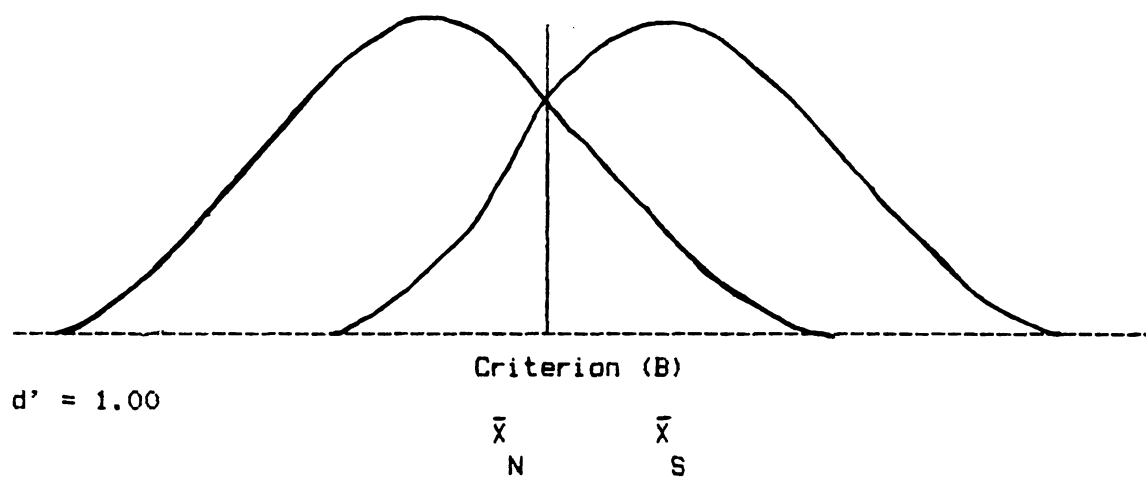
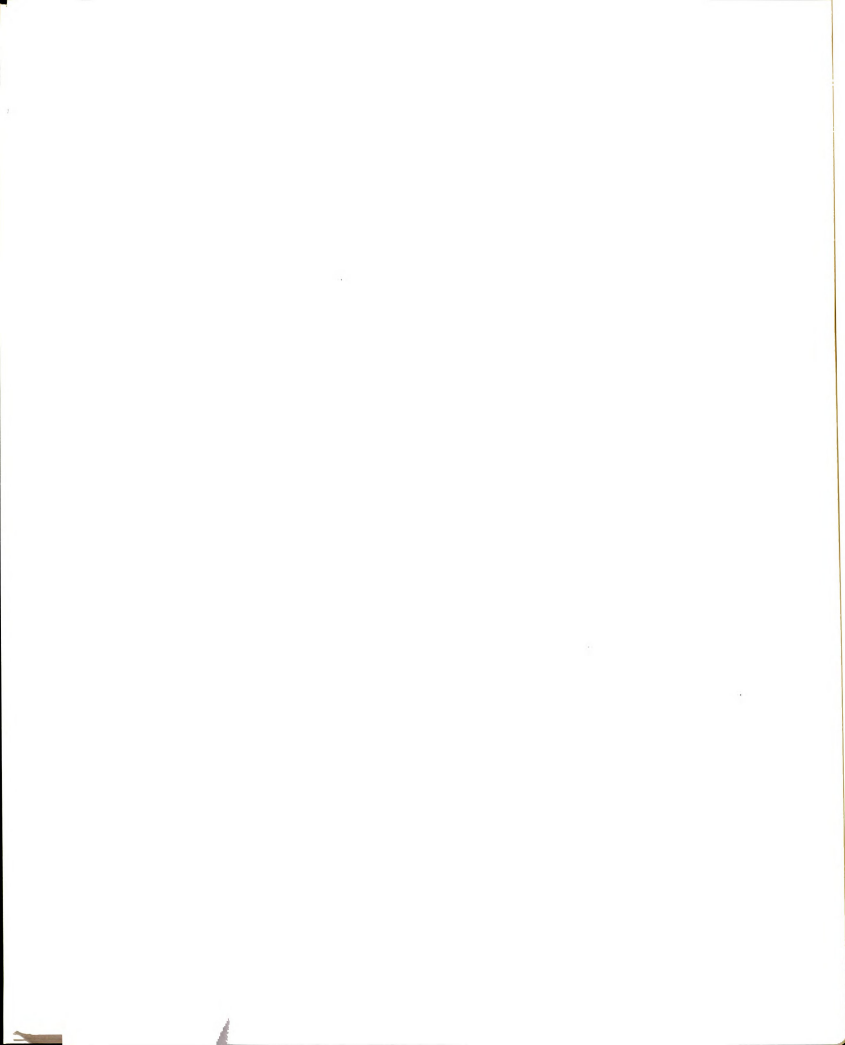


Figure 2. Hypothetical Distributions of Signal and Noise
By Varying Degrees of Sensitivity

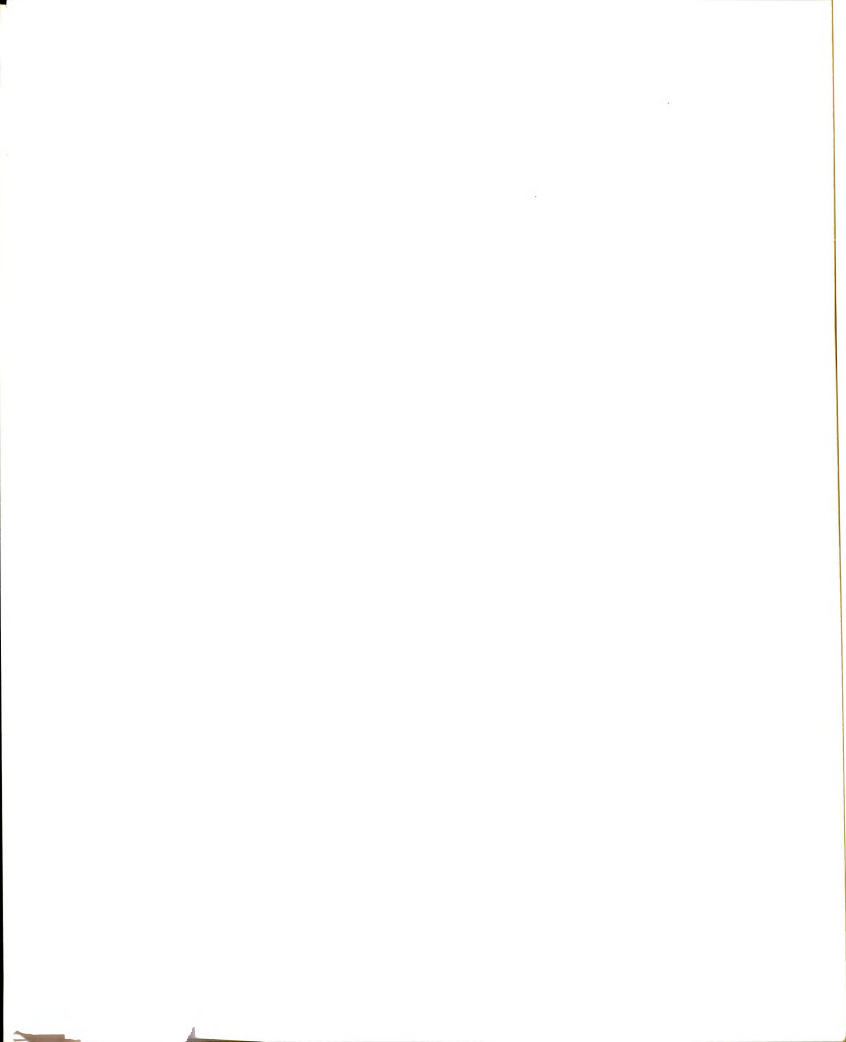




properties of signal and noise but on the ratio of $P(s|S)$ to $P(s|N)$, is insensitive to these violations and may be used in any and all cases (McNicol, 1972; Srull, 1984).

If the assumptions are met, however, the use of d' as a measure of sensitivity also allows the researcher to calculate "B," a measure of the decision component in the recognition task. Sometimes responses made by the subject are not due entirely to discrimination ability. There often is a correspondence between the number of "hits" and "false alarms made." For example, subjects who desire to commit few false alarms may do so by rarely giving a "signal" response. In doing so, however, they will also make few hits. Conversely, subjects who want to maximize their hit rate can do so by giving many "signal" responses. In doing so, however, they also raise the probability of committing false alarms. Since the sensitivity measures are based on the conjunction of hits and false alarms, both types of subjects will receive approximately equal $P(A)$ and d' values. They will differ, however, in the criterion they use for giving a response of "signal."

According to McNicol, the criterion chosen by a subject is determined by his or her prior expectation that the item was presented. Thus, it might be anticipated that subjects who were presented with 40 "friendly" and 10 "intelligent" traits associated with a target would demonstrate a lower criterion toward "signal" responses to "friendly" items than toward "intelligent" items on a recognition test, regardless of sensitivity. Figure 2 shows the hypothetical criterion for each of the relative signal and noise distributions. Note that although the d' value differs across the distributions, the criterion P_A value "B" is equal. Thus, B as a measure of the subject's response bias, is

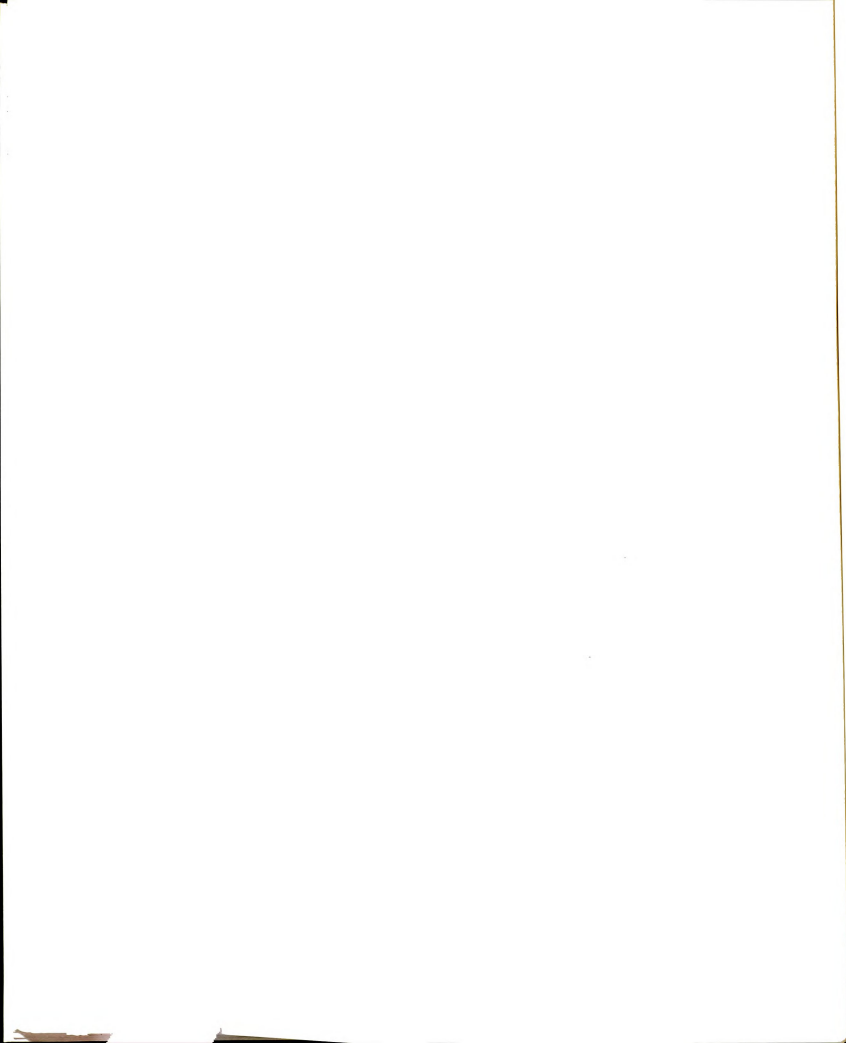


statistically independent of the measure of d' .

Although there exists no perfect measure of response bias when $P(A)$ is the measure used, McNicol (1972) notes that $P(S)$ may be interpreted in approximately the same fashion. Simply put, $P(S)$ is the probability for a given subject that the "signal" response will be given. Mathematically, it is equivalent to the sum of $P(s|S)$ and $P(s|N)$, the hit and false alarm rates, respectively.

Given their parametric properties and distributive qualities, most researchers would probably want to employ the measures of d' and B , rather than the nonparametric $P(A)$ and $P(S)$. However, unless one has the means by which to conduct the many trials necessary to calculate the parametric measures, he or she will find it necessary to use the approximation $P(A^*)$. It has been established by Norman and his associates (Norman, 1964; Pollack, Norman & Galanter, 1964) that a single pair of hit and false alarm rates provide adequate information to determine approximately the path of the entire MOC curve and its corresponding probability area. Briefly, the procedure involves the assumption that the "true" $P(s|N)$ can be no greater and the "true" $P(s|S)$ can be no lower than that achieved on the single recognition task. Computer simulations to test the validity of this assumption have shown that $P(A^*)$ is indeed a very good approximation to $P(A)$ and may be interpreted in exactly the same way (Norman, 1964).

Given the theoretical rigor of TSD and the precision of its measures for interpretation, Study 1 will utilize the TSD recognition measures as a means to assess the impact of attitudes on recognition sensitivities and biases toward attitude-relevant information. As a measure of "signal" discriminability, $P(A^*)$ will be computed as the approximation to $P(A)$. Also considered will be $P(S)$, the measure of

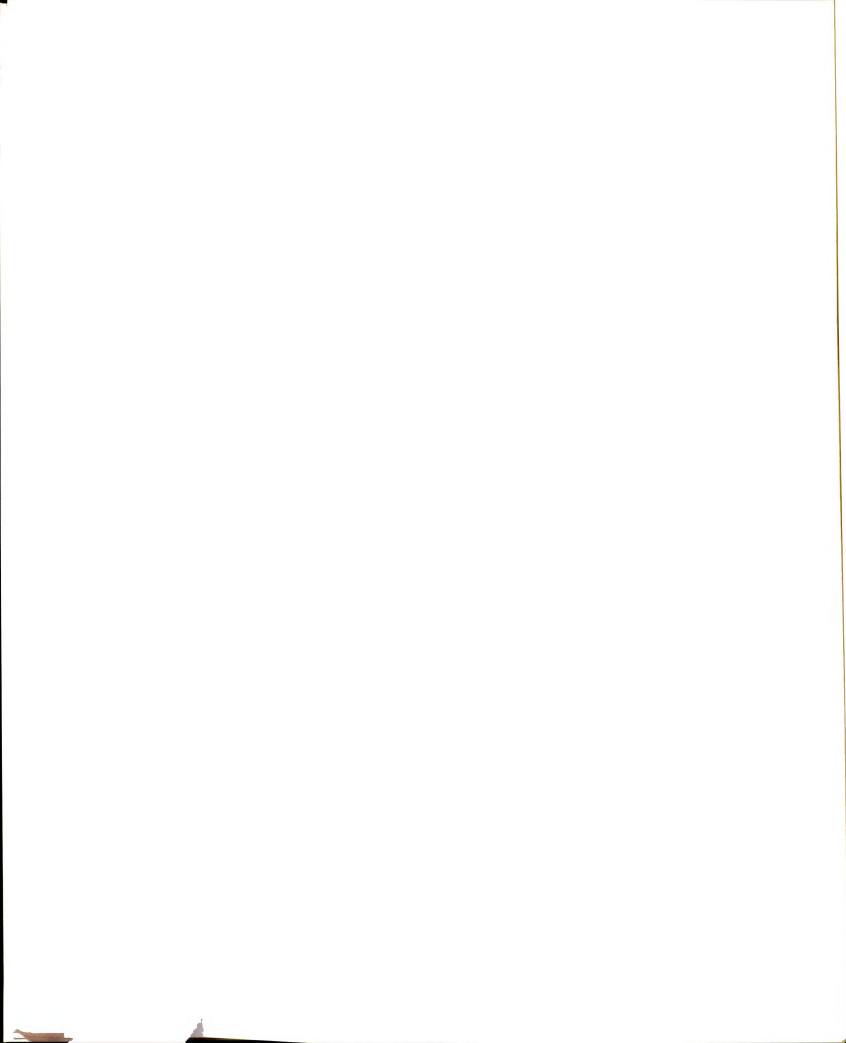


response bias. The next section summarizes the hypotheses in the formal language of TSD.

Study 1: Summary and Hypotheses

It is hypothesized that attitudes are cognitive structures that serve to aid the individual in the organization and encoding of attitude-relevant information. As a consequence of a functional approach to the study of attitudes, it is expected that individuals who hold a strong position on an issue will demonstrate greater retention of information that confirms their position over information that challenges it. It is argued that the failure of earlier research to provide support for this contention may have been due to its inability to control for the effects of information utility that led individuals to attend to and remember information in a bipolar manner. Moreover, the measurement problems encountered in this research area did not permit the accurate selection of those individuals who necessarily identified with the attitude positions they were assumed to hold. If these points are correct, a procedure that neutralizes the utility effects of information and the corrects the measurement problems should better test the hypothesis that individuals selectively retain information that supports their attitudes.

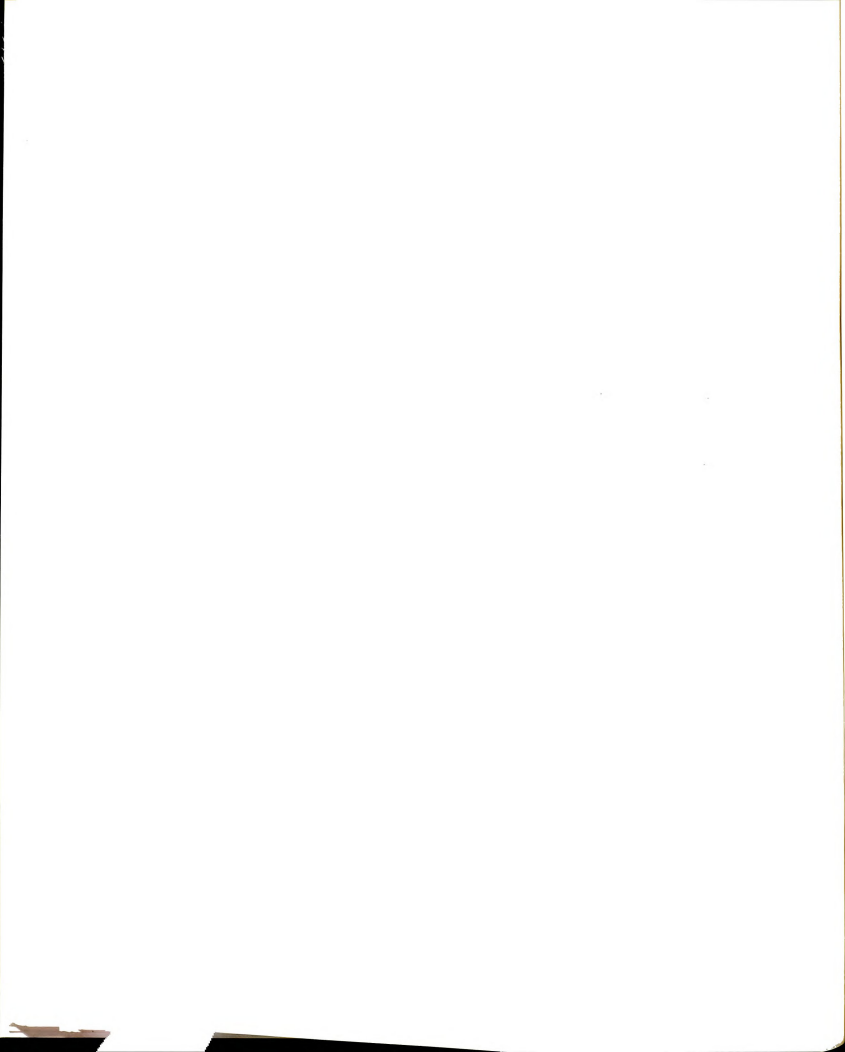
A review of the literature on social categorization suggests that individuals who are classified into groups that differ in name only will demonstrate information selectivity effects. Thus, it would seem that if such effects are also related to attitudes, it would first be necessary to select individuals whose social identity is defined in part by



the attitude they hold. That is, subjects must feel compelled to label themselves as "pro-" or "anti-" on the particular issue, as well as give the attitude-appropriate responses on a set of questionnaire scales. Moreover, the information to be presented should bear on the individuals' membership in the attitude group, rather than on the individual's attitude itself.

A competing hypothesis merits some consideration, however. It may be the case that given the procedures discussed above, attitudes as social categories will still lead to bipolar retention of information, in a manner similar to that found by Judd and Kulik. Even if the information is relevant only to the category membership of the individual, attitudes may have unique properties as social categories that result in attention to both favorable and unfavorable aspects about their label. Members of minimal groups may feel little attachment to their label outside the contrived laboratory situation, since they have no basis for understanding its meaning. As a result, they may find little need to "learn" information that goes beyond their expectations of the two groups.

In contrast, individuals who personally identify with attitude categories, may have a "vested interest" (Sivacek & Crano, 1983) in their label outside the laboratory. As a consequence, they may remain attuned to information that is highly relevant to their membership, even if it does not suggest anything directly about the quality of the position itself. In his review of the self-schema literature, Hastie (1981) concludes that highest recall of information occurs when it is either congruent or incongruent with the activated cognitive structure. He describes the relationship between information congruence and recall as a "nonmonotonic U-shaped function," where the strongest recall occurs at

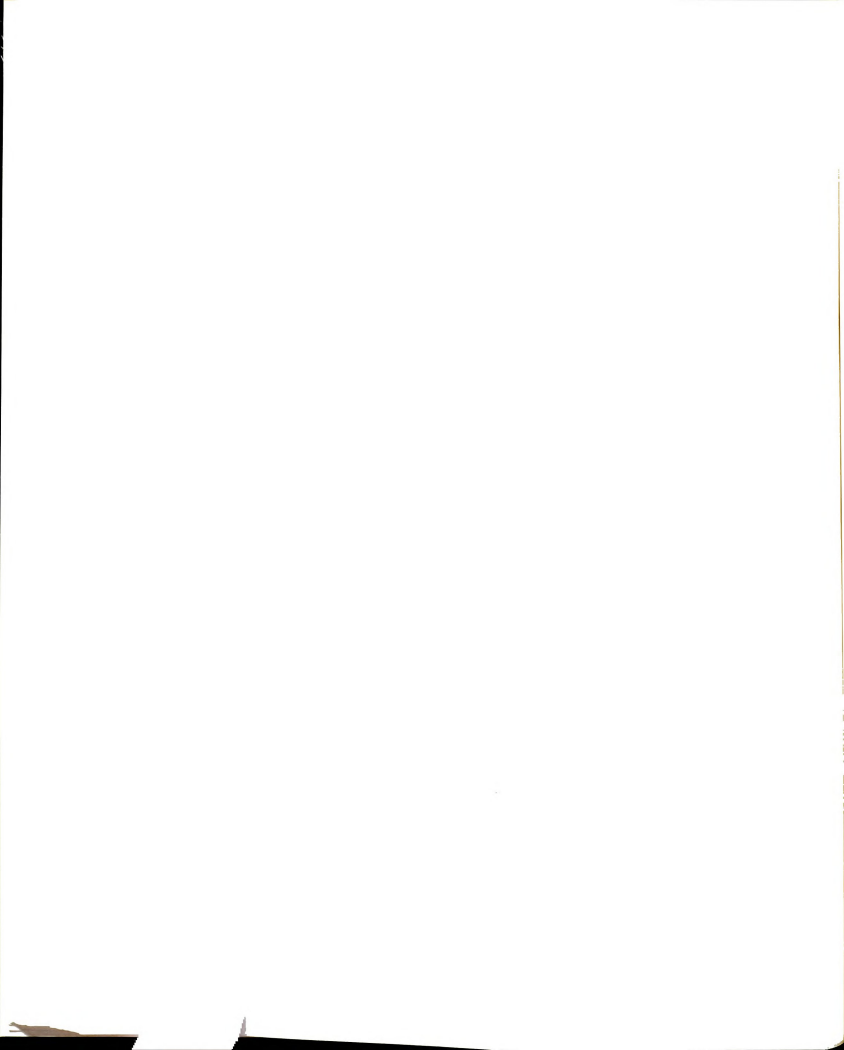


the point where information is highly diagnostic of the activated schema. Support for this possibility would speak to the cognitive-structural differences between "real" social categories used by individuals in day-to-day interaction, and the membership labels "created" in the minimal groups paradigm.

Therefore, Study 1 will test two opposing predictions. On the one hand, membership in an attitude category may lead to selective retention of information that suggests that the individual's label is "favorable" and the opposing category label is "unfavorable." Moreover, category members may selectively forget information suggesting that their attitude category is "unfavorable" and the opposing category is "favorable." This prediction would be consistent with the research on minimal group categorization (Howard and Rothbart, 1980).

On the other hand, attitude categories may simply attune individuals to attitude-relevant information, regardless of its confirming features; and regardless of whether the information is favorable or unfavorable to one's own attitude category or the opposing category, the individual may demonstrate retention without selectivity. Such a finding would suggest that retention selectivity is affected by the aspects of the social category rather than the utility of the information. That is, in contrast to minimal group labels, attitude categories as "real" phenomena are bipolar organizers of information.

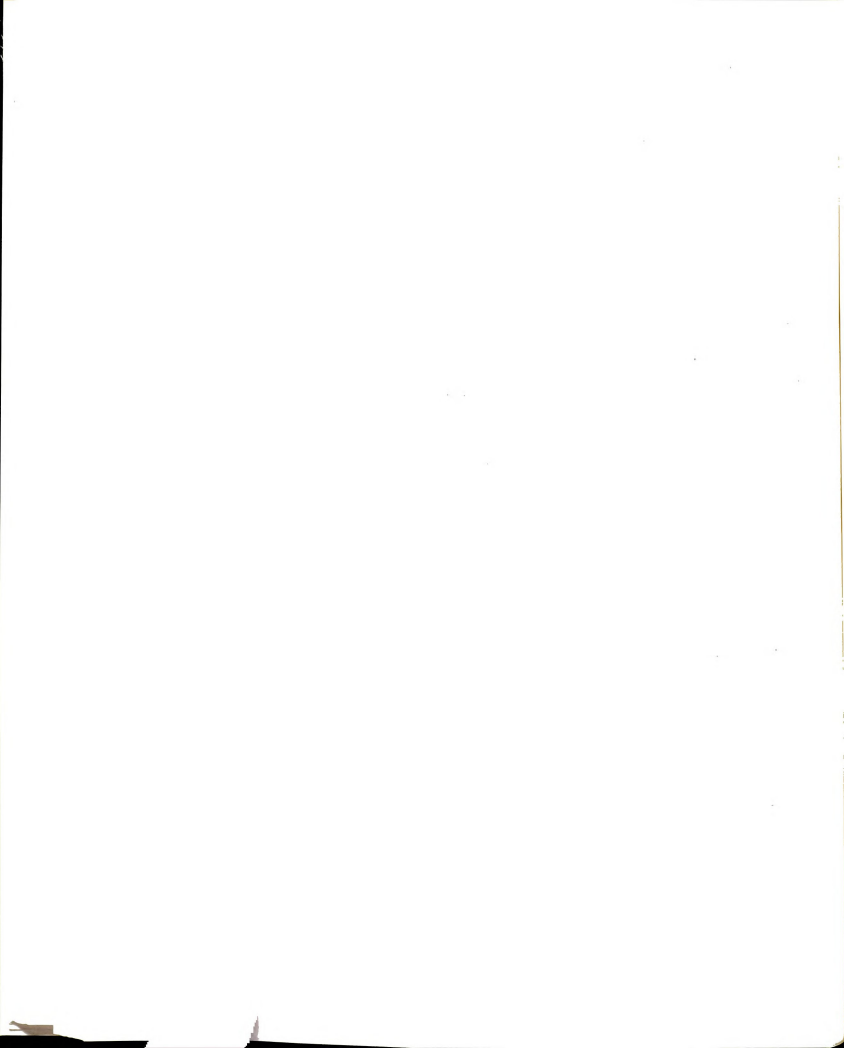
Regardless of how the specific information is retained by members of attitude categories, two other predictions are very clear. First, in the absence of the attitude as a means of self-identification, individuals who are "neutral" on a particular issue should demonstrate the lowest levels of retention of information. That is, they should lack



the cognitive structure necessary for the encoding and processing of attitude-relevant information and thereby have little means of retrieving it on a recognition test. It is important to note that this contention does not mean that "neutral" subjects attend to the information with any less vigor than their categorized counterparts. Such a prediction would be theoretically uninteresting with regard to the cognitive organization of information. Rather, it assumes that upon retrieving the information, "neutrals" will remember that it was presented, but will demonstrate an inability to recall the attitude category from which it came.

In a similar manner, individuals who are members of an attitude category should also demonstrate poorer retention of information that is not particularly relevant to their attitude label. As Hastie (1981) suggests, information that is "undiagnostic, or irrelevant to the applicability of the schema is worst remembered (p. 75)." Thus, the presentation of information that is "nonvalent" or says little about the category membership should lead to lower recognition than that demonstrated for information that argues for a favorable or unfavorable concept of the attitude groups. In terms of the organizational aspects of attitude categories, it would be uninteresting to demonstrate a simple lack of attention to these items by category members since item inattention says little about how the items are classified in memory. However, it is predicted that categorized individuals will correctly remember which nonvalence items were presented but will exhibit an inability to recall the correct group from which they came.

In the language of the theory of signal detection (TSD), the predictions may be stated formally in terms of item recognition:



Hypothesis 1. Individuals who are members of an attitude category will demonstrate a greater sensitivity to items that confirm their expectations. Thus, a higher sensitivity should be demonstrated for favorable items originating from one's own attitude category and unfavorable items originating from the opposing attitude category, relative to own-attitude category unfavorable and opposing-attitude category favorable items.

Hypothesis 1 Alternative. Individuals who are members of an attitude category will demonstrate equal sensitivity to all category-relevant items regardless of the item valence.

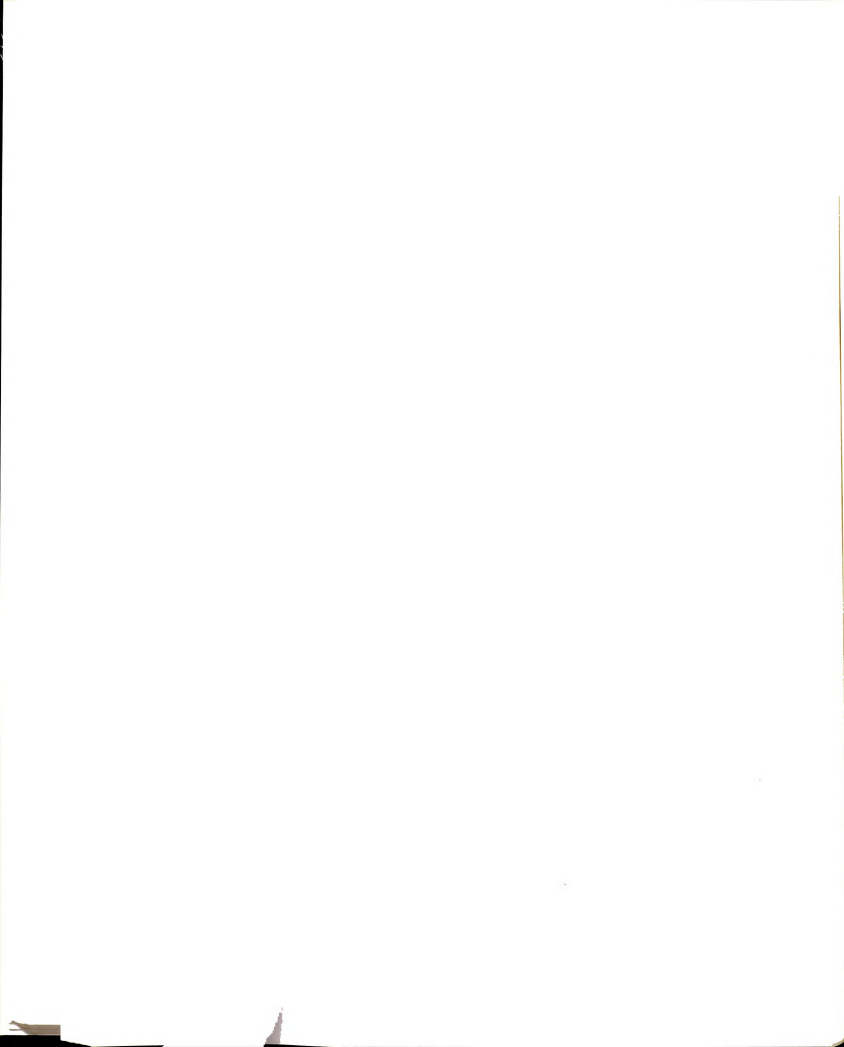
Hypothesis 2. Individuals who are not members of an attitude category and in no way identify with them, will tend to demonstrate lower sensitivity to all items, regardless of valence, than individuals who are attitude category members. Moreover, these individuals will demonstrate no sensitivity differences to the items on the basis of their attitude category origin.

Hypothesis 3. Individuals who are members of an attitude category will demonstrate lower sensitivity to items that are nonvalent and are undiagnostic of the attitude categories, than to items that imply favorable or unfavorable characteristics about them.

Method

Overview. Subjects were categorized into three groups (Pro, Anti and Neutral) on the basis of their responses to a questionnaire concerning the issue of abortion. In a subsequent session, selected subjects formed impressions of Pro-choice and Anti-abortion targets by viewing favorable, unfavorable and nonvalent self-disclosure statements made by advocates of each group. Subjects were later asked to identify the statements they had observed with the correct group.

Subjects. Five hundred and thirty-eight male and female undergraduates participated in the pre-test phase of the experiment. Based on their responses to the questionnaire, 110 males and females were recontacted to participate in the second phase. For their participation



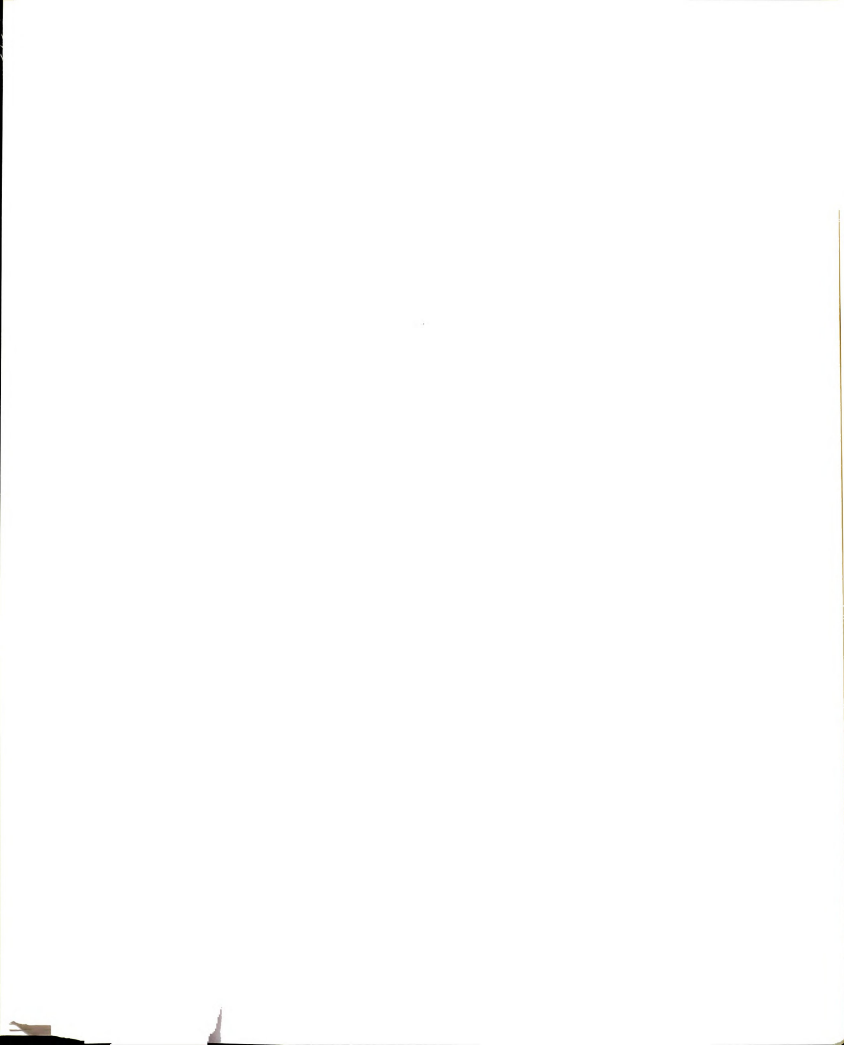
in one or both sessions, subjects received extra credit toward their course grade in their introductory psychology class.

Materials. The pre-test questionnaire, found in Appendix D, comprised eight semantic differential items applied to each of six issues of political importance. Items consisted of five-point scales anchored by the end-points: good/bad; kind/cruel; unpleasant/pleasant; fair/unfair; beautiful/ugly; foolish/wise; positive/negative; and valuable/ worthless. The six issues to be rated for favorability were: permitting abortion on demand; increase in defense spending; mandatory death penalty for murder; making the possession of handguns illegal; reducing the penalties for possession of marijuana; and lowering the drinking age.

The self-disclosure statements to be viewed by subjects in the second phase of the experiment were similar to those used by Howard and Rothbart (1980). A set of 24 favorable or positive, 24 unfavorable or negative, and 24 nonvalence or neutral statements were selected and approximately balanced with extremely favorable and unfavorable self-disclosure statements excluded. Extremity of the favorable and unfavorable statements was established by the previous authors (cf. Howard and Rothbart, 1980).

Sentences were printed in 5 x 8 index cards, one statement to a card, and arranged in random order in decks of 72 cards. Examples of the statements used included:

Positive statements: "I took two disadvantaged kids on a one week vacation," and "I saved enough money to spend a year traveling in Europe."



Negative statements: "I had two brief affairs with other people while I was married," and "I spread rumors that my roommate was dishonest."

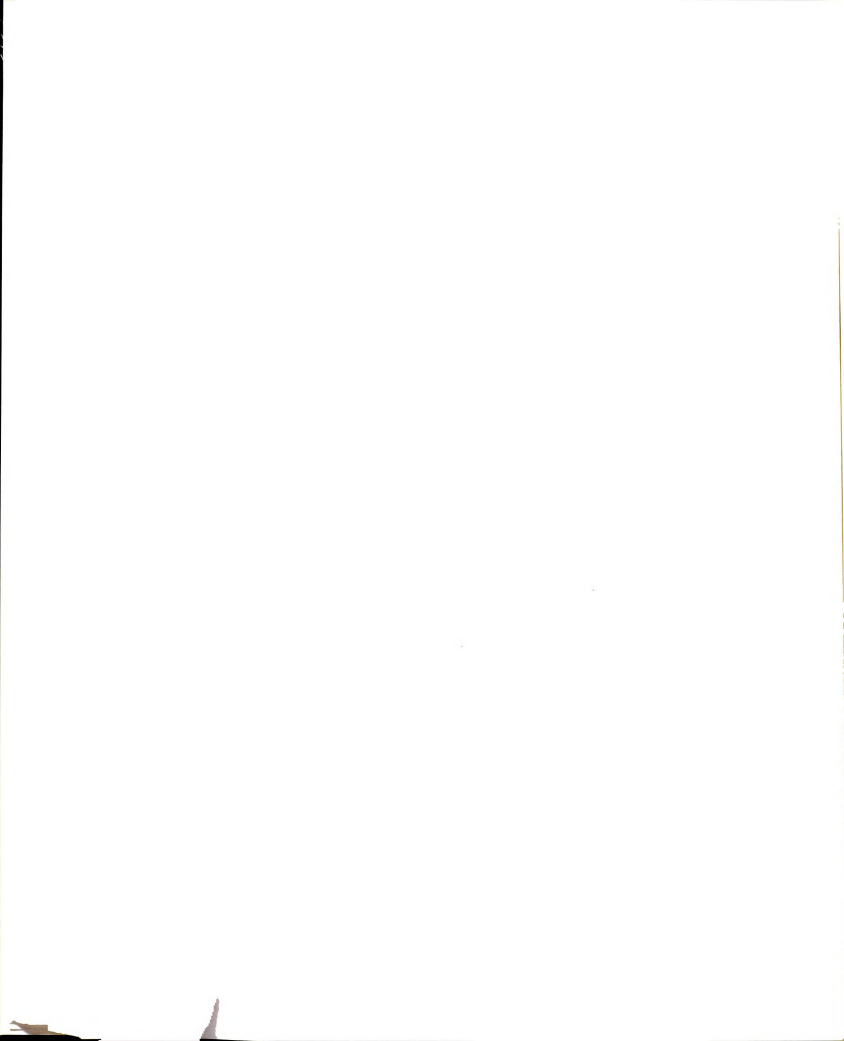
Neutral statements: "I awoke at 8:00 this morning," and "I lived with my parents last summer."

The set of 72 statements was then randomly sorted into three groups of equal number and two of the groups became stimulus sets for subjects to view in forming summary impressions of the two attitude groups. Each of the three sets included eight positive, eight negative and eight neutral statements approximately balanced such that no set would have a predominance of a particular type of behavior. In all, 24 statements were presented as having been written by members of the Pro- group, 24 statements were presented as having been written by the Anti- group, and 24 statements were not presented and were used subsequently as distractor items in the recognition task.

Design. The current study employed a 3 (Pro-, Anti- or Neutral attitude of subject) X 2 (Pro- or Anti- target category) X 3 (positive, negative or neutral statement) mixed factorial design. All subjects received all levels of the latter two factors.

Procedure. Pretest. All subjects first participated in the pre-test session in which they responded to the 48-item attitude questionnaire. Measures were obtained under the guise of a larger research project that entailed the completion of numerous surveys ranging from political attitudes to sex role inventories. This justification was provided so as to prevent the subjects from discerning the relationship between the pre-test and the subsequent sessions.

The resulting data were analyzed to find the scale that yielded the highest reliability and the largest frequency of subjects at the extreme ends and very middle of the distribution. Subjects whose scores fell



into these ranges were then recontacted by phone approximately one to two weeks later. In order to prevent subject suspicion about the nature of the selection process, they were told that their names were selected randomly from the introductory psychology class rosters. If the subject indicated a willingness to participate in the experiment, he or she was scheduled in a session with five to eleven other subjects.

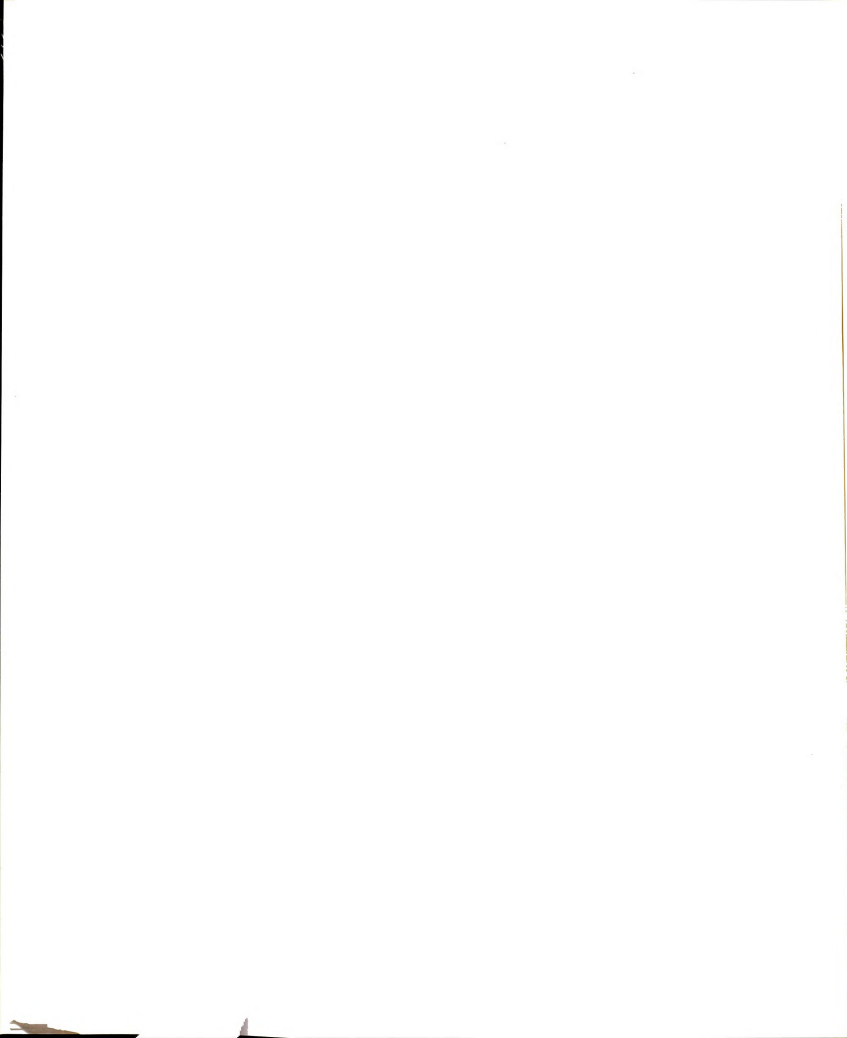
Upon entering the experimental room, subjects were introduced to the experiment by written and verbal instructions that outlined the experimental sequence, obtained informed consent and emphasized anonymity safeguards. All subjects then received the following instructions:

"Today you will be participating in a series of complex tasks relating to political attitudes. We are not interested in your own attitudes, however. Instead, we would like to find out whether certain measures we have developed will be useful for future research. In order to guarantee your total anonymity, we would like you to write a code number on the card in front of you. Please retain this code number throughout today's experiment, and write it on anything that you hand in."

Subjects then filled out and signed a departmental consent form and handed it in. (Subjects were also asked to write their code number on the consent form. Unknown to them, this was the means used to match their pre-test questionnaire responses to the data obtained from them in session 2. Interestingly, not one subject made note of this procedure even when asked about it during the debriefing.)

The experimenter then introduced the nature of the experimental task. The subjects were told:

"It is probably no surprise that people differ in their political views. We are particularly interested in how people who differ in their political views are perceived by outsiders. An especially controversial issue involves the question of abortion. Although it is probably true that no



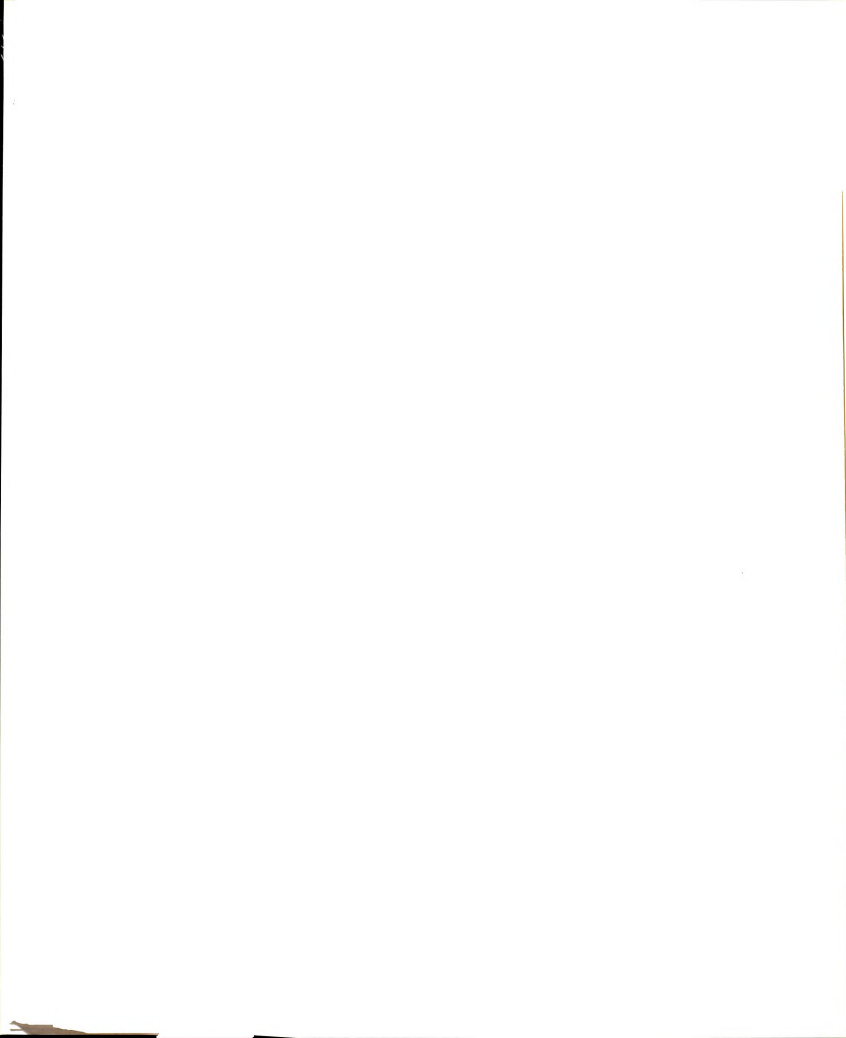
one advocates having an abortion, people often can be distinguished on the basis of whether they are Pro-Choice Abortion or Anti-Abortion. Pro-Choice people believe that a woman who is bearing a child prior to the final three months of pregnancy should be permitted to have an abortion under any condition. Anti-Abortion people, on the other hand, believe that women should not be permitted to have an abortion under most any condition." Today, we would like to find out how these two types of people are perceived by others.

In the next stage of the experiment, subjects were told that they were to act as judges, providing the experimenter with their conception of "what Pro-Choice and Anti-Abortion people are like," after Howard and Rothbart (1980). They were then provided with the two decks of stimulus cards described earlier (each deck containing eight favorable, eight unfavorable and eight neutral statements), and told that the first deck contained statements made by Anti-Abortion people and the second deck contained statements made by Pro-Choice people (allegedly obtained from subjects in a previous experimental session). Subjects then received the following verbal instructions (adapted from Howard and Rothbart):

"When I tell you to begin, I want you to open the deck marked 'Pro-Choice Abortion' and read all the cards from that deck. These cards contain statements provided from several individuals in that group. When you have finished reading all the cards in the deck, try to summarize your impressions of the persons in that group. What are they like? Write a brief summary of your impressions on the blank sheet in front of you. You will have 10 minutes for this task."

After ten minutes, subjects were then instructed to do the same for the "Anti-Abortion group" deck. The order of presentation of decks was counterbalanced across experimental sessions so that half of the subjects read the Pro-Choice cards first while the remaining half read the Anti-Abortion cards first.

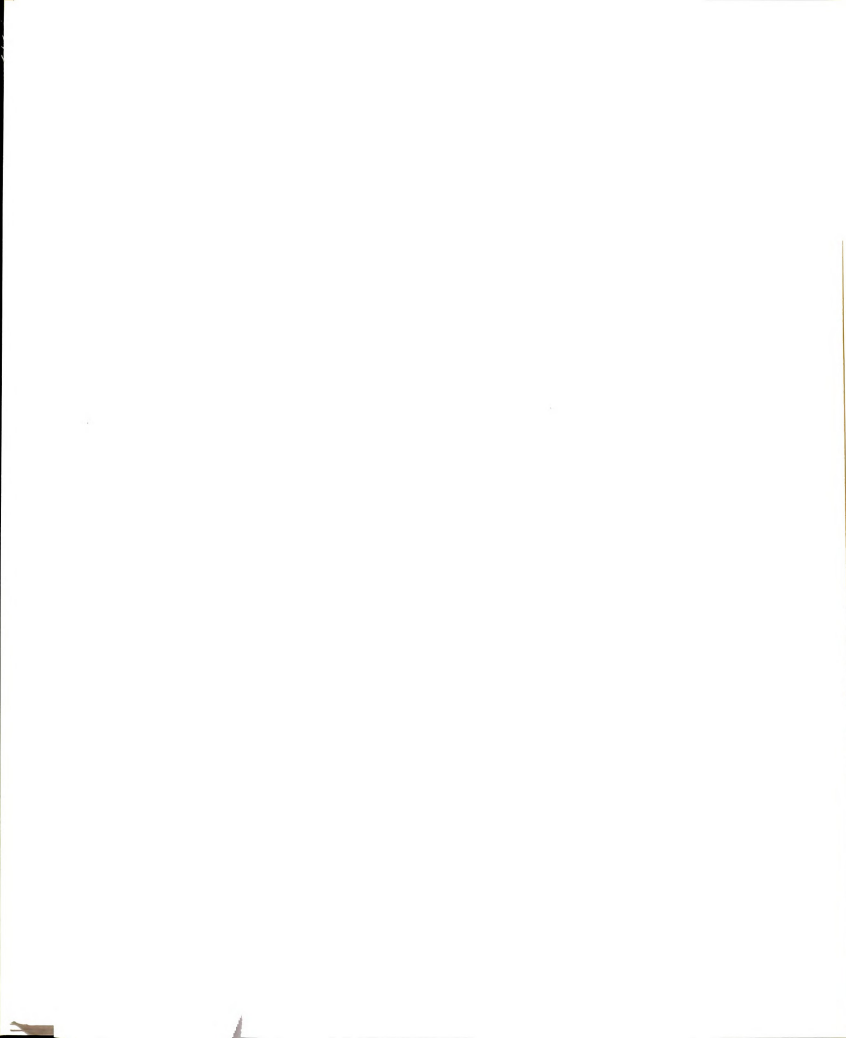
Upon completion of this part of the experiment, all cards and impressions were collected. In order to prevent rehearsal of the items,



subjects were given a short story to read that was entirely unrelated to the experimental manipulation. After ten minutes, the reading materials were collected and the dependent measure was distributed. The recognition task consisted of the entire set of 48 statements seen previously by the subjects as well as the additional set of 24 statements not seen. These new "distractor" items (which can be found in Appendix D) included an additional eight favorable, eight unfavorable and eight neutral statements. The order of statements on the recognition task was determined through a quasi-random sequence, to prevent subjects from discerning any pattern of presentation. They were told:

"Now we have a memory task for you. We would like you to look at each statement on the response sheet before you and assign it according to whether you saw it in the Pro-Choice Abortion group, the Anti-Abortion group or in neither group. Assign each item as you come to it, and do not change your response once you have assigned the statement, even if you realize that you have made an error. Please work as quickly as you can. You will have seven minutes."

After subjects had completed the recognition task, their response sheets were collected and the final dependent measure (also presented in Appendix D) was distributed. Subjects were told to provide their "impressions of the two groups as a whole" on eight bipolar adjective scales with the anchor points: friendly/hostile; helpful/disruptive; stupid/intelligent; passive/forceful; very likeable/difficult to like; independent/conforming; cooperative/uncooperative; and peaceful/aggressive. An additional scale whose endpoints were "liberal/conservative" was also included to determine subjects' ideological perceptions of the two groups. Subjects were also asked which attitude group they would prefer as friends.

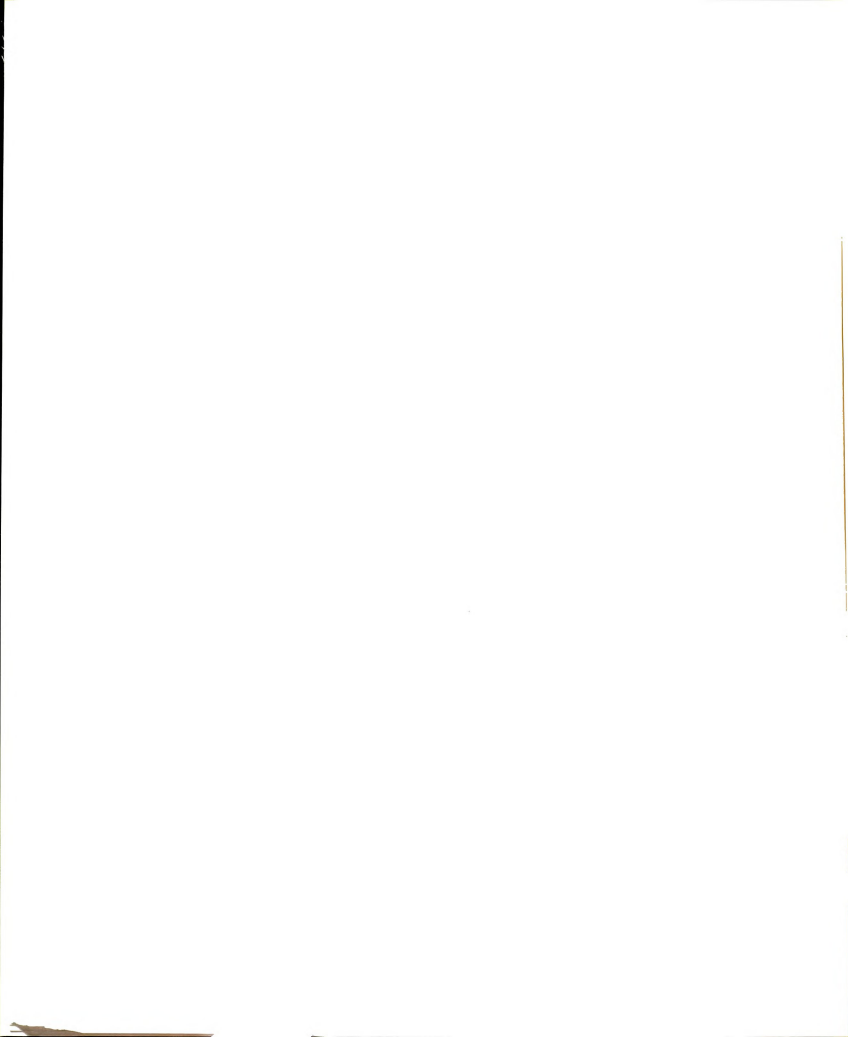


Other ancillary measures included the check of subject identification with the attitude category as well as a check for subject suspicion. Subjects were asked about the group to which they belonged, whether their experimenter was Anti- or Pro-Choice Abortion, and finally, the percentage of the population they judged to share their attitude. Upon the completion of the final questionnaire subjects were debriefed, but not before they were questioned as to what they thought was the true purpose of the experiment. They were then thanked for their participation and given their experimental credit.

Results

Analyses of the Pre-test Measures. In order for a scale to qualify as a tool for subject selection for the second session, it had to meet two criteria. First, the set of items for an issue, when combined, must have yielded a high reliability to indicate its unidimensionality (Nunnally, 1982). Second, the frequency distribution of subjects' scale scores had to be trimodal; many scores should be found at the midpoint of the scale as well as at its two extremes. Of the six issues, the abortion issue appeared to best satisfy these requirements. Since eight five-point scales were used to construct this measure, the possible range of scores was 8 to 40. Based upon the entire pretest sample ($n = 538$), the mean and standard deviation of the Abortion scale was 22.87 and 9.071, respectively. The reliability coefficient (Cronbach's alpha) for the eight items was .933. Such a high coefficient indicates that scale is measuring a single dimension.

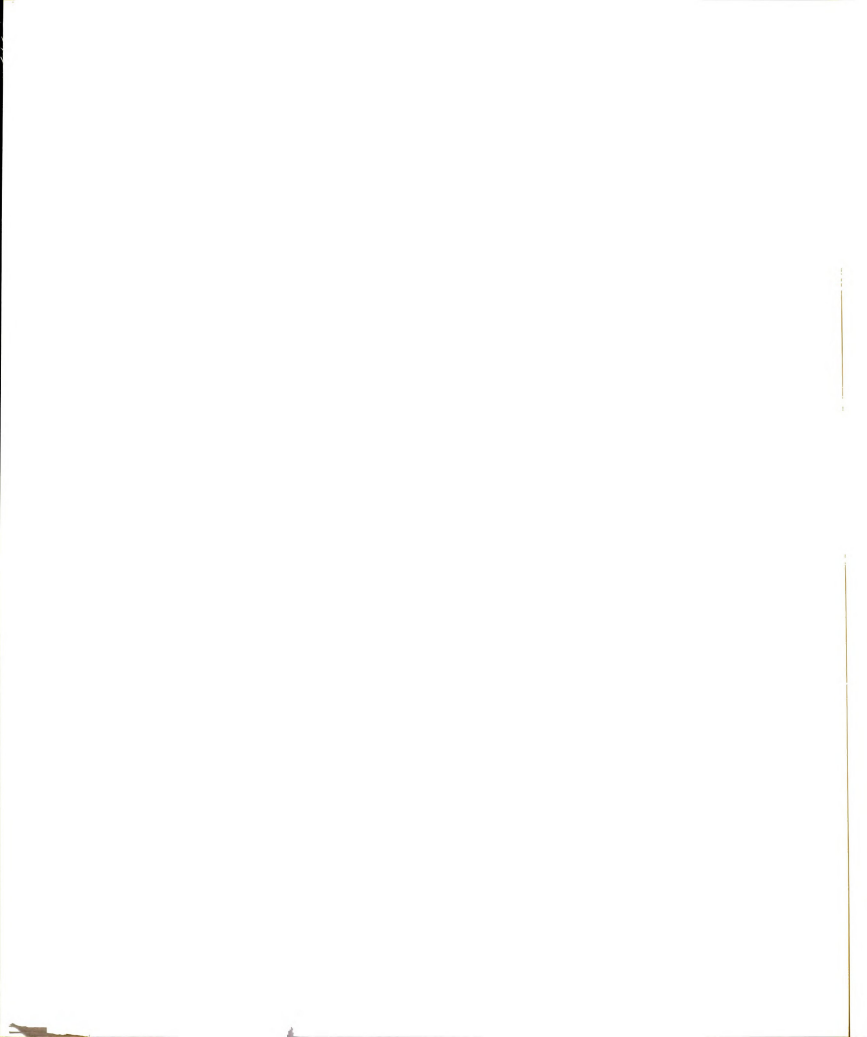
In order to maintain homogeneity of variance between conditions, subjects were selected into the three groups if their scale scores were



within a five-point range at either extreme or within two points in either direction of the scale midpoint, 24. This procedure resulted in three groups of subjects: 36 pro-choice whose scores ranged from 8 to 12; 32 neutral whose scores ranged from 22 to 26; and 32 anti-abortion subjects whose scores ranged from 35 to 40. Of these 110 subjects, two indicated suspicion as to the true purpose of the experiment and were excluded from further analysis. Of the remaining subjects, 28 were excluded because their responses on the attitude category identification item did not match their Abortion scale score. For example, a subject who may have scored in the "anti-abortion" range of the pretest may have failed to indicate his or her identification with the "anti-abortion group" on the check following the major dependent measure. The sample that remained after completion of the selection process consisted of: 29 pro-choice; 29 anti-abortion and 22 neutral subjects.

Transformation of recognition data. The recognition responses for each subject were divided into the components necessary for analysis using TSD. The value for the hit rate, $P(s|S)$, was calculated by counting the number of times a subject placed a presented statement in the correct attitude category. This was performed for each of the four categories possible: favorable items for the pro- group; favorable items for the anti- group; unfavorable items for the pro- group; and unfavorable items for the anti- group. The final value was then divided by the total number of hits possible to convert it to a proportion (division by eight).

Computation of the false alarm rate, $P(s|N)$ was done in a similar manner, with one important exception. Unlike the hit rate, the false alarm rate was composed of two separate totals. First, the number of



distractors incorrectly assigned to the attitude category was counted. This amounted to a subject giving a "signal" response to a stimulus that was not presented (in other words, a response to "noise." Second, it was necessary to determine the number of items that received a "signal" response that, in fact were presented, but incorrectly classified, having actually originated in the opposing attitude category. As will become apparent shortly, this distinction is crucial to subsequent tests of the hypotheses. The total false alarms of both types were then combined and again divided by the maximum number possible to achieve a proportion (total possible was equal to 16). Having determined $P(s|S)$ and $P(s|N)$ for each subject, the corresponding $P(A^*)$ values were obtained from a table of areas under the MOC curve (McNicol, 1972, pp. 230-231).

McNicol (1972) cautions that an accurate evaluation of subject sensitivity using the approximation $P(A^*)$ can be guaranteed only if the subject bias toward a "signal" response, $P(S)$ is equal across experimental conditions. Otherwise, the greater the subjects' response toward signal or noise, "the more $P(A^*)$ will underestimate the true area under the MOC curve. If observers show greater bias in one condition than in another, their sensitivity scores will appear to be lower, but this would be an artifact." Thus, it will be necessary to demonstrate that where statistically significant differences are found across conditions, the values of $P(S)$ did not differ as well.

Tests of hypotheses. A three way repeated measures analysis of variance was performed to assess the effects of the subjects' attitude category, targets' attitude category and statement valence on the sensitivity measure, $P(A^*)$. The mean $P(A^*)$ values are presented in Table 2.

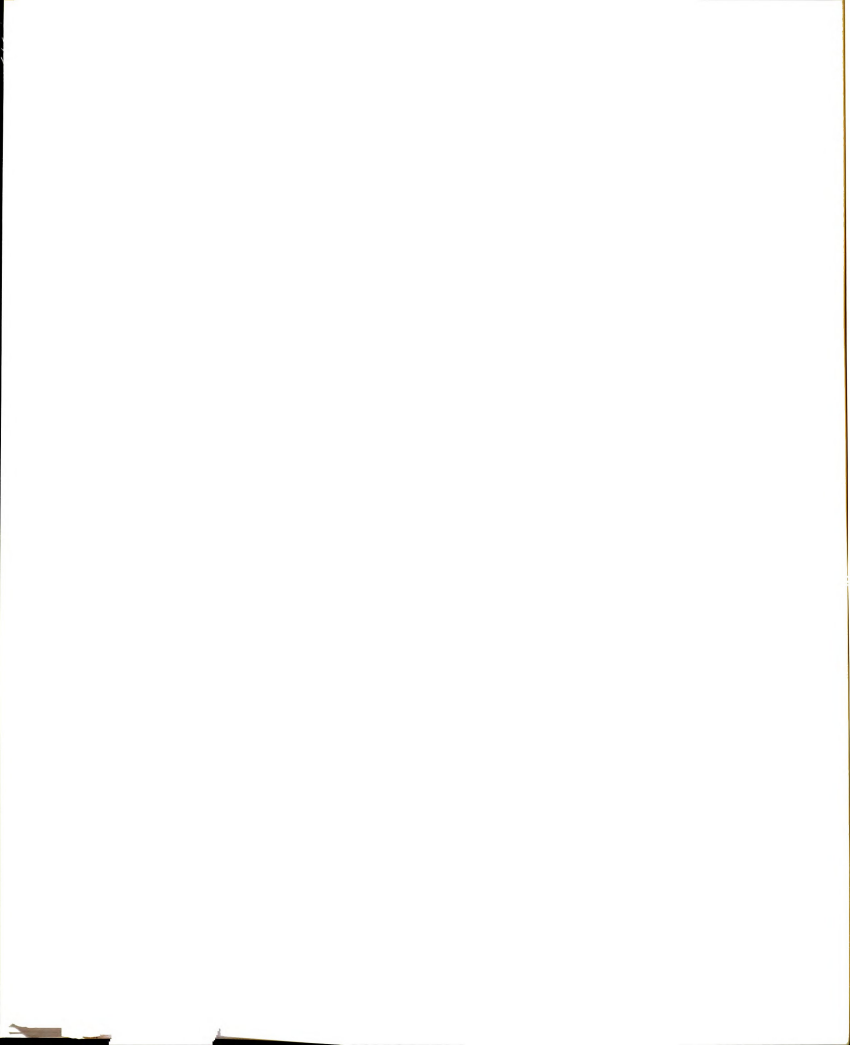
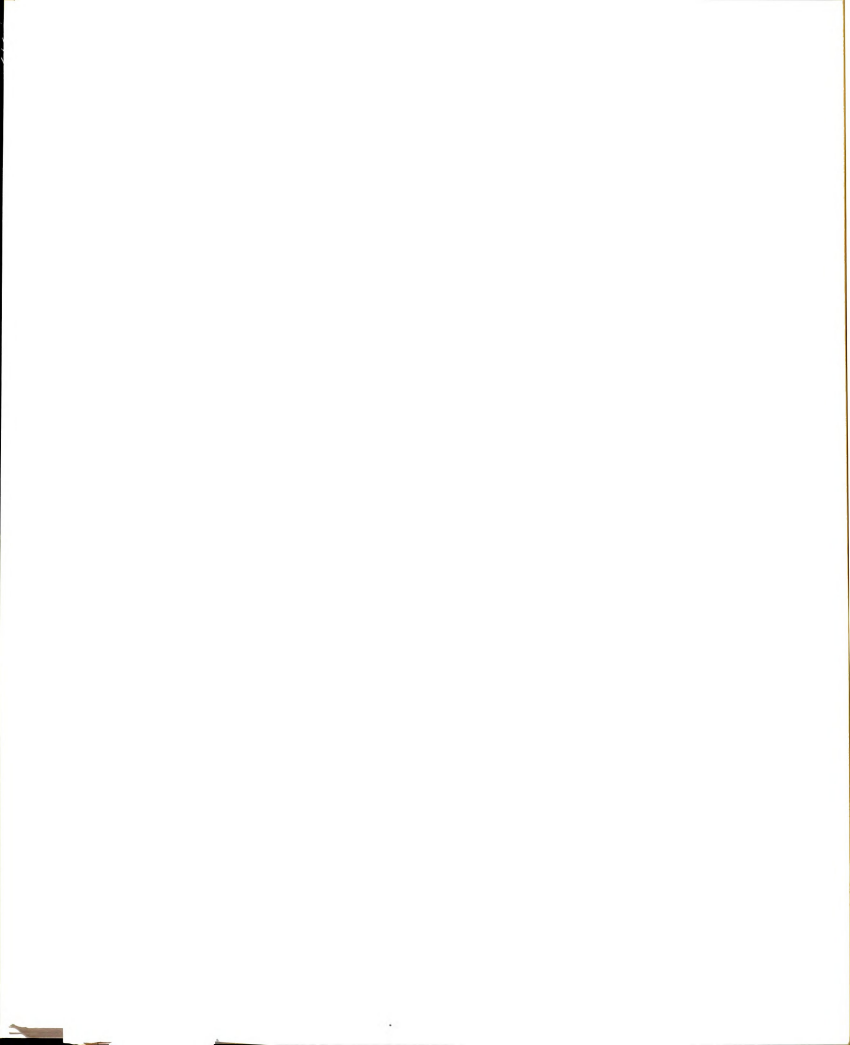


Table 2. Mean Sensitivities of Subjects by Subject Attitude Category,
Statement Presentation Category and Statement Valence

Statement Valence	Subjects' Attitude Category					
	Pro-choice Abortion		Anti-Abortion		Neutral Abortion	
	-----		-----		-----	
Statement Presentation Category						
	Pro	Anti	Pro	Anti	Pro	Anti
-----	-----	-----	-----	-----	-----	-----
Favorable	.874	.874	.844	.818	.805	.786
Unfavorable	.882	.898	.888	.894	.812	.812
Neutral	.787	.783	.722	.788	.783	.815
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Analyses revealed that the overall interaction predicted by the combination of Hypotheses 1, 2 and 3 was not significant, $F(4,154) = 2.27$, $p = ns$. Contrary to predictions in Hypothesis 1, but consistent with the alternative Hypothesis, the planned comparisons between $P(A*)$ values for the statement valences indicate that regardless of the subjects' attitude category, there were no significant differences in recognition between positive and negative statements with in each target category, all F 's < 1 . Subject members of the pro- and anti- categories demonstrated equal sensitivity to all statements irrespective of whether the items favored or did not favor one target category or the other. This would suggest strong support for the Judd-Kulik bipolarity hypothesis since both favorable and unfavorable statements were recognized from both target categories.



Collapsing across target category (pro- and anti- statements), planned contrasts were then performed between valence and nonvalence statements². Although there was no evidence for the selective retention predicted in Hypothesis 1, an attitude category by statement valence interaction demonstrated strong support for Hypotheses 1-alternative, and Hypotheses 2 and 3, $F(1,154) = 5.34$, $p < .001$. Examination of $P(S)$ for this interaction suggests that it is not a simple artifact of the subjects' bias in response, $F(4,154) = .397$, $p = ns$. An analysis of the simple interaction of subject's attitude category by statement valence (excluding neutral statements) revealed no difference in recognition between positive or negative statements across all attitude categories, $F(2,154) = 1.38$, $p = ns$. This suggests that statement valence, whether favorable or unfavorable, toward one category or the other, did not lead to greater sensitivity toward statements (Alternative Hypothesis 1).

Planned contrasts on the differences between valenced statements (positive and negative) and nonvalenced statements (neutral) for attitude category members alone, indicated strong support for the predictions of Hypothesis 3. Pro-Abortion subjects demonstrated much greater recognition sensitivity toward valenced statements for both pro- and anti- targets than they did toward neutral statements, $F(2,154) = 22.874$, $p < .0001$. A breakdown of the $P(A*)$ values into $P(s|S)$ and $P(s|N)$ may be found in Table 3. An inspection of the Table indicates that the difference in sensitivity was due to a lower hit rate for neutral items than for valenced items, $F(2,154) = 27.56$, $p < .0001$, as well as a higher false alarm rate for neutral items over valenced items, $F(2,154) = 9.71$, $p < .0001$.

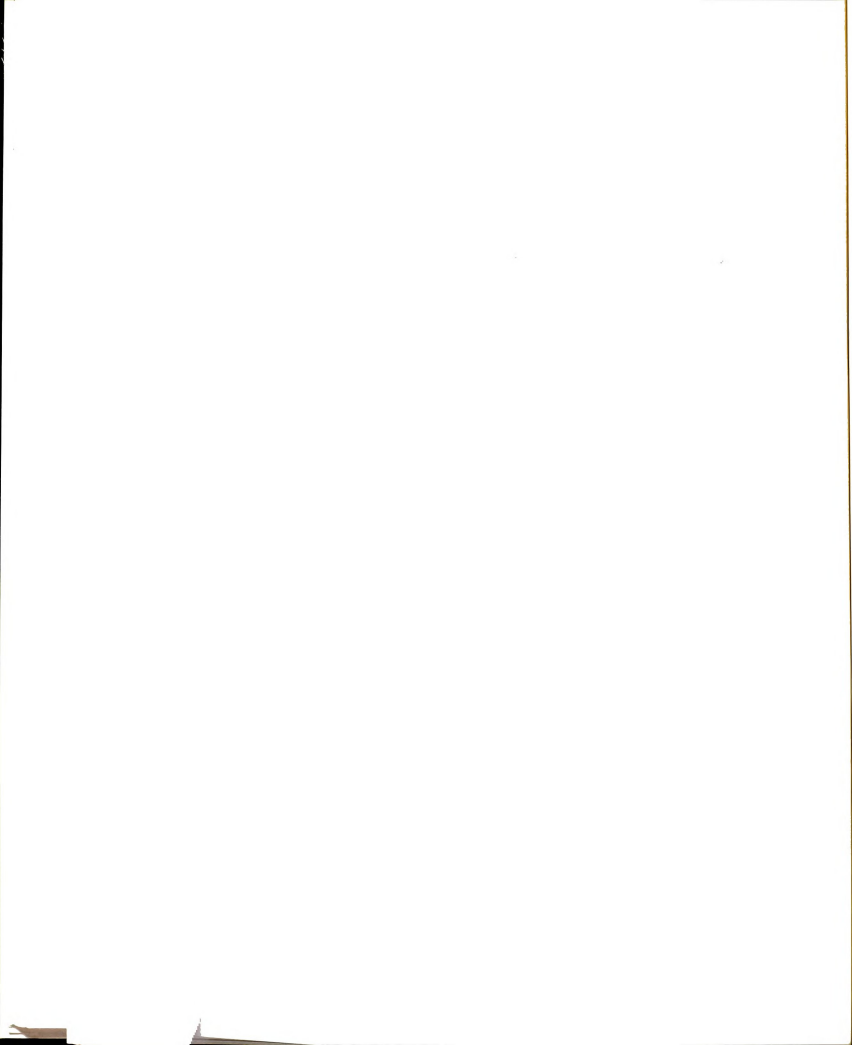


Table 3. Breakdown of $P(A^*)$ Values into $P(s|S)$ and $P(s|N)$ Values
by Subjects' Attitude Category and Statement Valence

Statement Valence	Subjects' Attitude Category								
	Pro-Choice			Anti-Abortion			Neutral Abortion		
	$P(A^*)$	$P(s S)$	$P(s N)$	$P(A^*)$	$P(s S)$	$P(s N)$	$P(A^*)$	$P(s S)$	$P(s N)$
Favorable	.874	.735	.130	.831	.670	.153	.795	.616	.179
Unfavor- able	.891	.776	.112	.891	.759	.118	.811	.665	.173
Neutral	.785	.599	.190	.755	.554	.190	.799	.605	.172

Planned contrasts for the Anti-Abortion subjects revealed identical results. As did their Pro-Abortion counterparts, these subjects exhibited a greater sensitivity toward valenced items than toward neutral items, $F(2,154) = 4.36$, $p < .02$. Moreover, a decomposition of $P(A^*)$ for these subjects reveals that the sensitivity difference is also due to their lower hit rate for neutral items than for valenced items, $F(2,154) = 28.99$, $p < .0001$, as well as their higher false alarm rate for these items, $F(2,154) = 6.17$, $p < .01$. In contrast to pro- and anti-subjects, there was no difference in sensitivity between valenced and nonvalenced items for neutral subjects, $F < 1$.

While it would seem that members of attitude categories are more attuned to both positive and negative information about the two attitude groups than they are to neutral information, this difference would not be interesting with regard to the organization of information, if it was caused merely by the subjects' inattention to neutral items. Inability

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to recognize neutral items would then be an artifact of subjects' ignoring them during initial presentation and would say little about the way in which these items are stored in memory. If, however, it can be shown that the lower sensitivities to neutral items were caused, not by subjects' inattention to them, but instead by their inability to discriminate between the target groups in which the items were presented, this would be strong support for attitudes as bipolar organizers of attitude category information. The neutral information, while correctly recognized as having been presented, would have no means of being organized in memory and would have a higher probability of being misassigned.

There are two criteria that must be met in order to rule out the possibility of differential attention to neutral items in favor of the organizational explanation enumerated above. First, it must be shown that the commission of false alarms stems from between-target category confusion and misassignment of neutral items previously presented and not to the incorrect "recognition" of neutral items that were not presented. In terms of false alarms, such confusion would result in a higher false alarm rate for each target category. If, for example, a subject correctly recognized a statement that appeared originally with the Pro-choice abortion target group but, remembered it as an Anti-abortion statement, this statement would be included in the false alarm rate for the Anti- target group. Similarly, an Anti- target statement might also be recognized and incorrectly placed with the Pro- target group.

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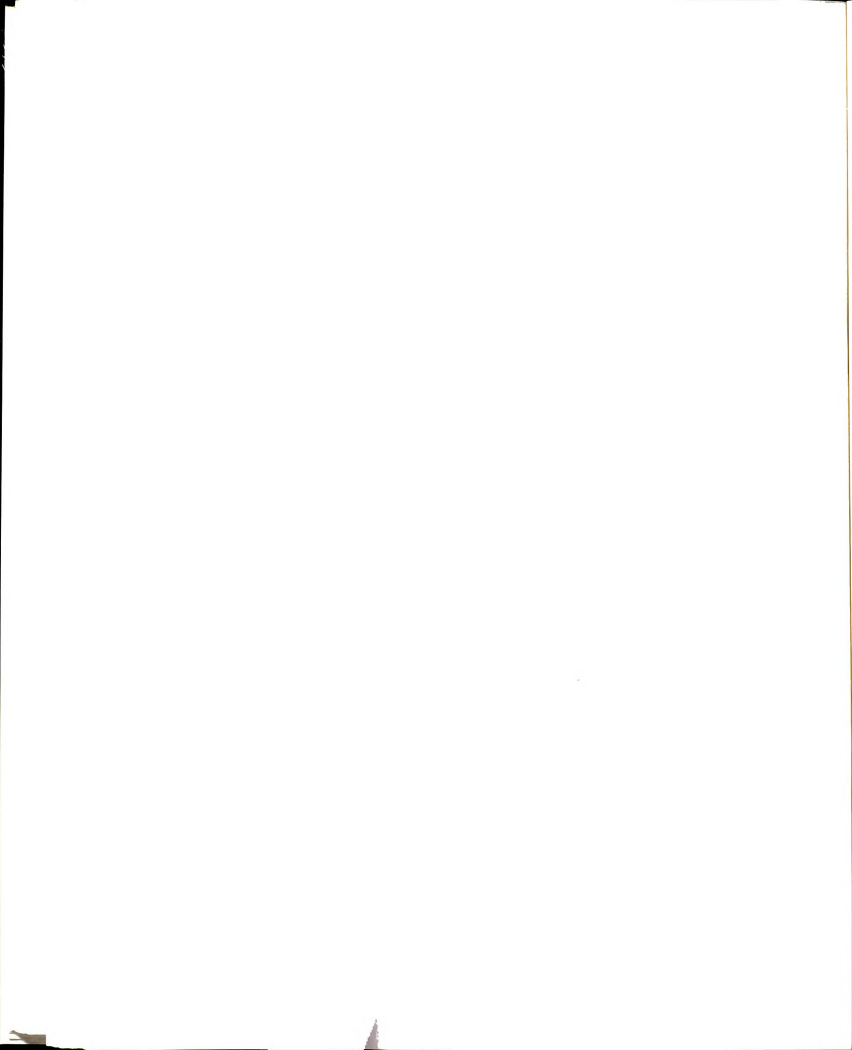
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It is important to note that this prediction, if correct, will hold true only for neutral items that were presented. Distractor items, not previously presented should demonstrate no effects. That is, in terms of simple recognition, subjects should demonstrate an ability to discriminate between neutral items presented and those that were distractors. Yet, they should tend to exhibit a large number of incorrect classifications of the presented items. Thus, the higher false alarm rates for neutral items as compared to valenced items would be due entirely to an inability to organize them on the basis of attitudes rather than to a simple lack of attention to them in the original presentation. Subjects should remember which neutral items they saw, they should simply not remember as well, the group in which they saw them.

A more direct means of ruling out the possibility of differential attention to neutral items involves a measure of the sensitivity to presented items without regard to the accuracy in their classification in the target categories. That is, irrespective of the category placement, recognition strength across all items (including nonvalence items) should be equal. Lower sensitivity rates for neutral items discussed above, would then be attributable only to target category misassignment.

On the other hand, should overall sensitivity (regardless of item placement) be lower for nonvalence than for valence items, the attentional explanation could not be ruled out. The between-category confusion mentioned above would then likely be due, not to an inability to organize the neutral information in the correct target categories, but to simple subject inattention to the nonvalence items during their presentation. If it can be demonstrated that both criteria are met, there will be strong evidence that attitudes serve to organize incoming attitude-relevant information in a bipolar fashion. Failure to meet



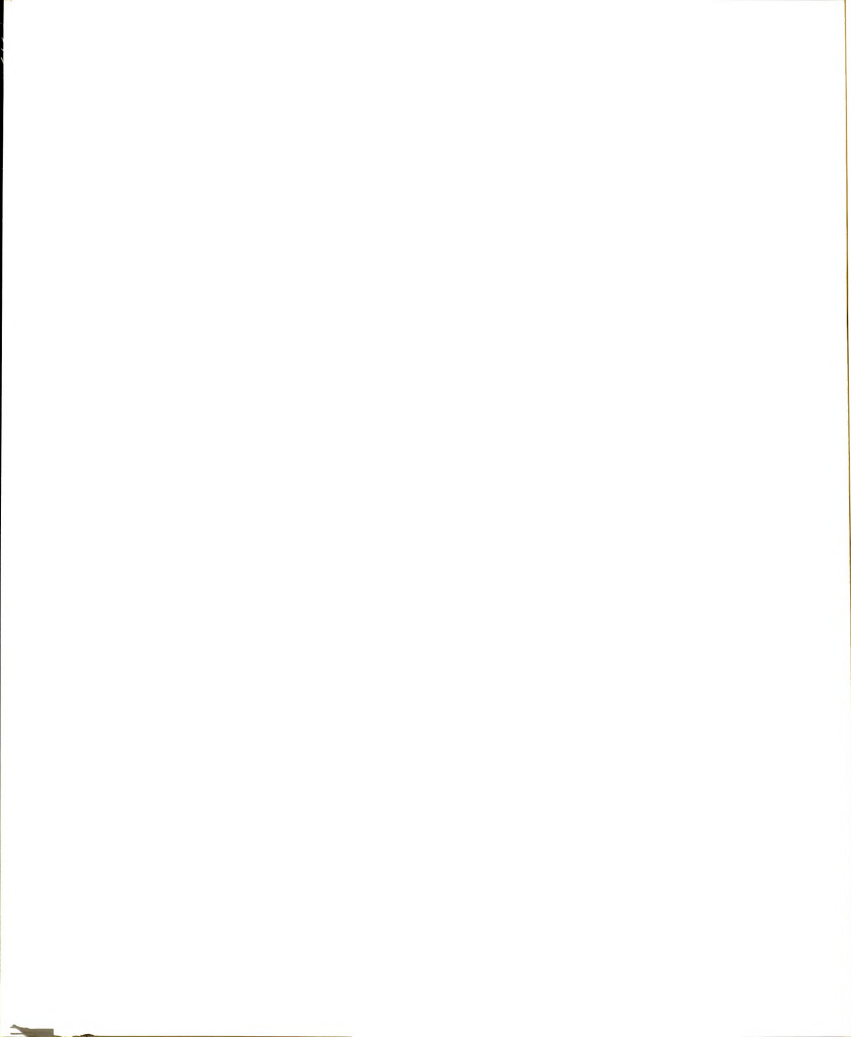
either criterion, however, will say less about organizational properties of attitudes than it will about their attentional qualities.

In addressing the first criterion, a repeated measures analysis of variance was performed on the false alarm rates for the members of each attitude category. It was predicted that differences in the false alarm rates between valenced and unvalenced items should be reflected in a larger amount of between category confusion for nonvalenced than for valenced items. In contrast, it is expected that there would be no difference in false alarms between the two valence types for distractor items (those not seen previously.) In other words, simple subject inattention to the neutral items would be reflected by a greater number of false alarms of both types (presented and distractor). On the other hand, a larger false alarm rate for presented items, but not for

Table 4. Breakdown of False Alarm Rates into Previously Presented Items and Distractor Items by Subjects' Attitude Category and Statement Valence

Subjects' Attitude Category									
False Alarm Type P(s N)									
Statement	Pro-Choice			Anti-Abortion			Neutral Abortion		
Valence	Total	Group	Distr.	Total	Group	Distr.	Total	Group	Distr.

Favorable	.130	.192	.069	.153	.250	.056	.179	.290	.068
Unfavor- able	.116	.177	.054	.118	.192	.043	.173	.290	.057
Neutral	.190	.293	.091	.190	.300	.080	.172	.264	.080

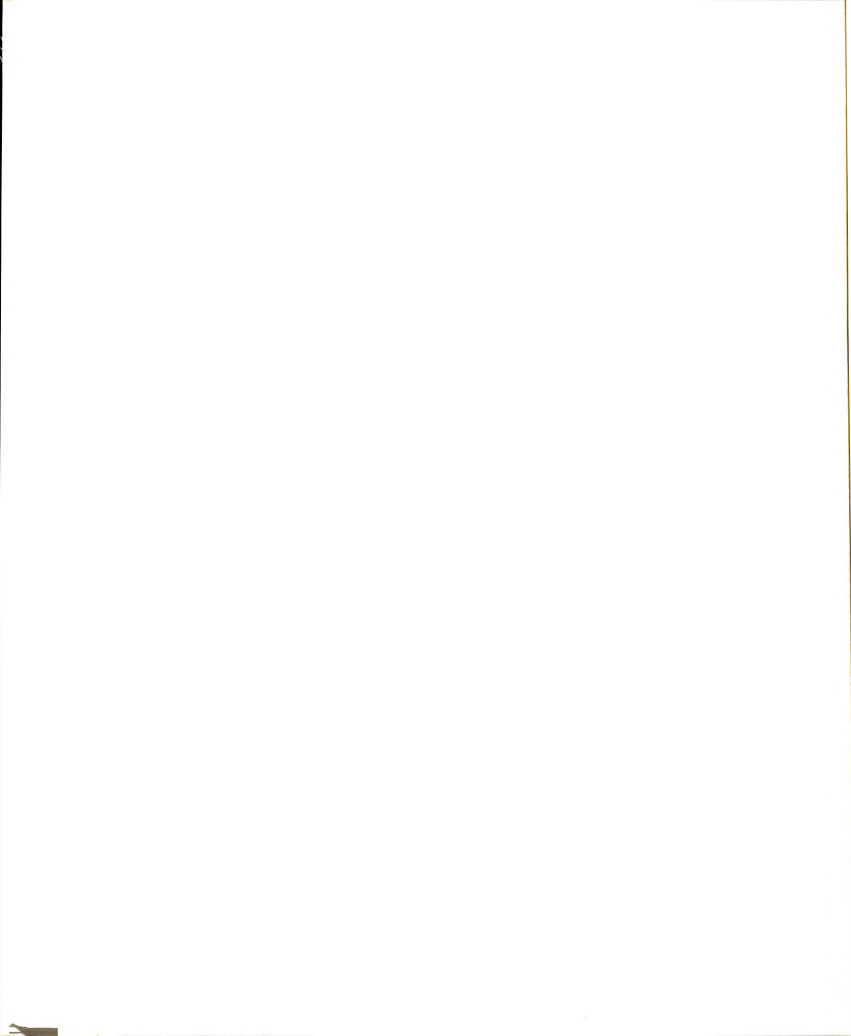


distractors, would suggest that the bipolar attitudes, while useful for correctly recognizing and classifying valenced information, are not useful for the classification of neutral information.

The breakdown of mean false alarm rates are presented in Table 4. Simple comparisons within each of the two attitude category conditions revealed a significant simple interaction between statement valence (valence vs. nonvalence) and false alarm type (group vs. distractor) for pro-choice subjects, $F(2,154) = 4.36$, $p < .02$. Simple contrasts indicated that a significantly greater number of group false alarms were made for valence items than for nonvalence items, $F(1,154) = 24.36$, $p < .0001$. There was no difference, however, in distractor false alarms made between valence and nonvalence items, $F(1,154) = 1.71$, $p = ns$.

An identical, though marginally significant simple interaction was found between statement valence and false alarm type for anti-abortion subjects as well, $F(2,154) = 2.71$, $p < .07$. Once again, simple planned contrasts revealed that a significantly greater number of group false alarms were made for valence items than for nonvalence items, $F(1,154) = 12.71$, $p < .001$. Moreover, there was no difference in false alarms between distractors of the two statement valences, $F(2,154) = 1.86$, $p = ns$.

On the basis of the first criterion alone, it would seem that since pro- and anti- subjects were able to identify those neutral items that had not been previously presented, their attention to neutral items was equal to that for the valence items. However, an examination of the data for the second criterion suggests that this interpretation is not correct. It will be recalled that in order to rule out the possibility of lower attention to neutral items, subjects must demonstrate that they

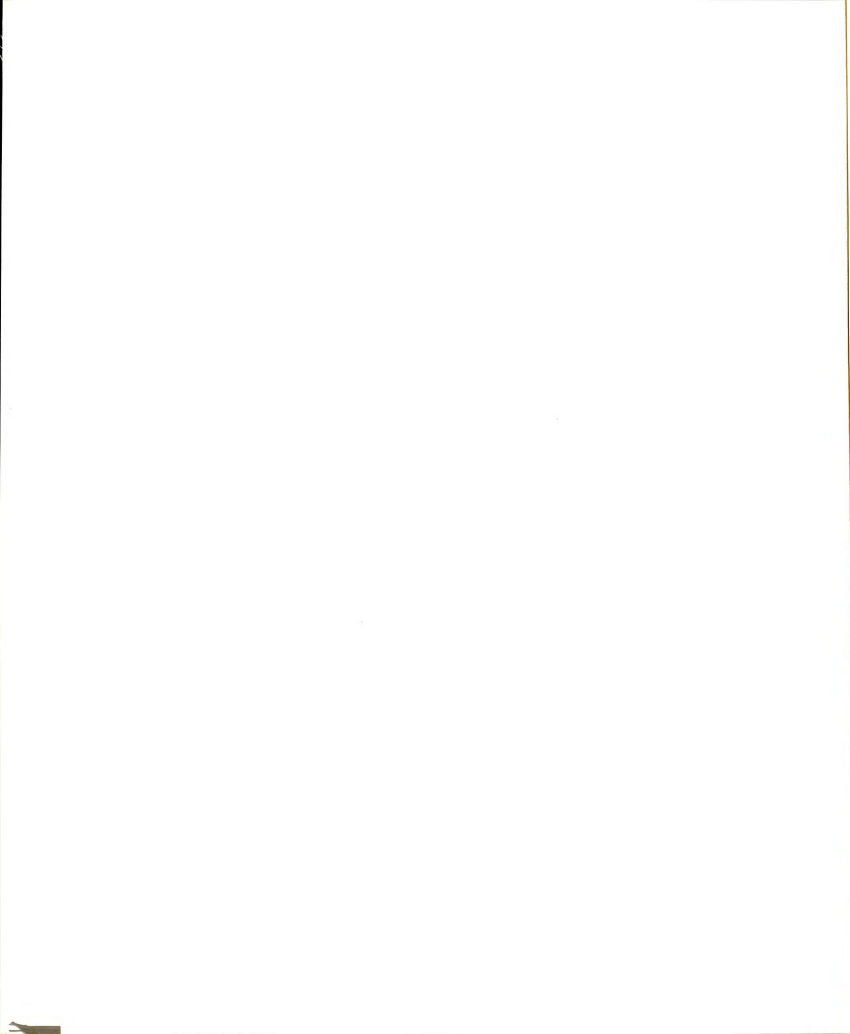


could recognize those neutral items that were presented, even if they had assigned them to the incorrect target category. An analysis of the $P(A^*)$ values ignoring category placement suggests that this was not the case.

Table 5 presents the mean $P(A^*)$ values for the second criterion. As may be seen from the Table, subjects in all three attitude categories demonstrated a lower sensitivity toward the neutral items than toward the valence (favorable and unfavorable) items, $F(1,154) = 7.11$, $p < .01$. A breakdown of $P(A^*)$ values into hits and false alarms suggests that subjects, irrespective of attitude category, made fewer hits, and committed a greater number of false alarms for neutral items than for valence items, $F(1,154) = 55.85$, and $F(1,154) = 20.51$, respectively, both p 's $< .001$.

Table 5. Breakdown of $P(A^*)$ Values into $P(s|S)$ and $P(s|N)$ Values
by Subjects' Attitude Category and Statement Valence
Irrespective of Correct Category Classification

Statement Valence	Subjects' Attitude Category								
	Pro-Choice			Anti-Abortion			Neutral Abortion		
	$P(A^*)$	$P(s S)$	$P(s N)$	$P(A^*)$	$P(s S)$	$P(s N)$	$P(A^*)$	$P(s S)$	$P(s N)$
Favorable	.929	.927	.138	.947	.920	.112	.924	.906	.136
Unfavorable	.957	.953	.108	.961	.950	.086	.957	.955	.114
Neutral	.892	.909	.181	.854	.908	.159	.870	.895	.159

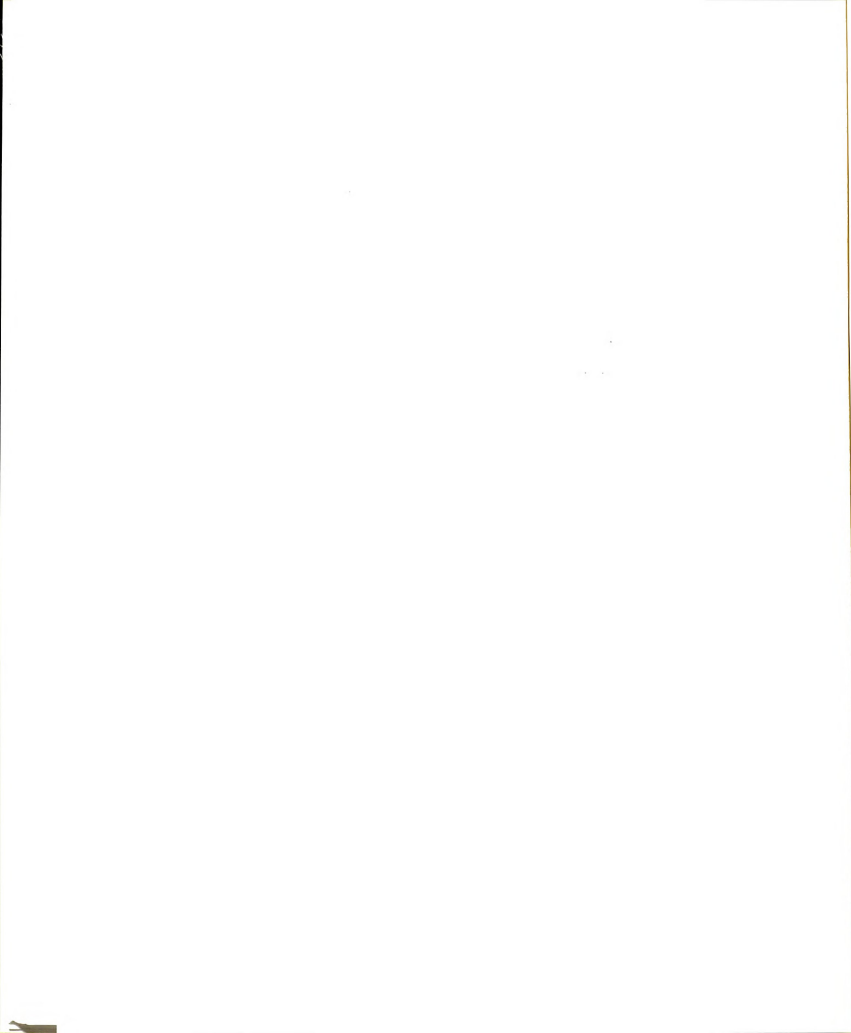


Thus, the lower sensitivities demonstrated for neutral items by attitude category subjects appears to be a result of their lower attention to these items during presentation. Although they did confuse and misassign these items more often than the valence items, this would appear to be more an artifact of their lower attention to the nonvalence information than a consequence of their inability to organize and classify it. A more parsimonious explanation would suggest that nonvalent information carries little weight in forming an impression of a target or target category. As shown above, even neutral subjects exhibited lower sensitivity rates for nonvalence than valence information.

Planned contrasts were also conducted to examine the sensitivity differences between the attitude category members and the subjects who were neutral, the nonmembers. It was predicted in Hypothesis 2 that neutral subjects who by definition, lack an attitude on abortion, should similarly lack a means to organize and retain information relevant to either of the two attitude groups. Table 2 presents the mean sensitivity levels of the neutral subjects. Due to the absence of any significant differences between levels of valence type and of target category (favorable or unfavorable and pro- or anti- target), analyses were performed by collapsing across them. Planned contrasts revealed that neutral subjects exhibited lower sensitivity on the valence items than either of their categorized counterparts, $F(1,112) = 11.30, p < .001$.

As before, the $P(A*)$ values were then broken down into their corresponding hit and false alarm rates. These data are also presented in Table 3. Planned contrasts across valence items revealed that neutrals made fewer hits and more false alarms than did attitude category members, $F(1,112) = 12.03, p < .001$ and $F(1,112) = 4.07, p < .05$, in order.

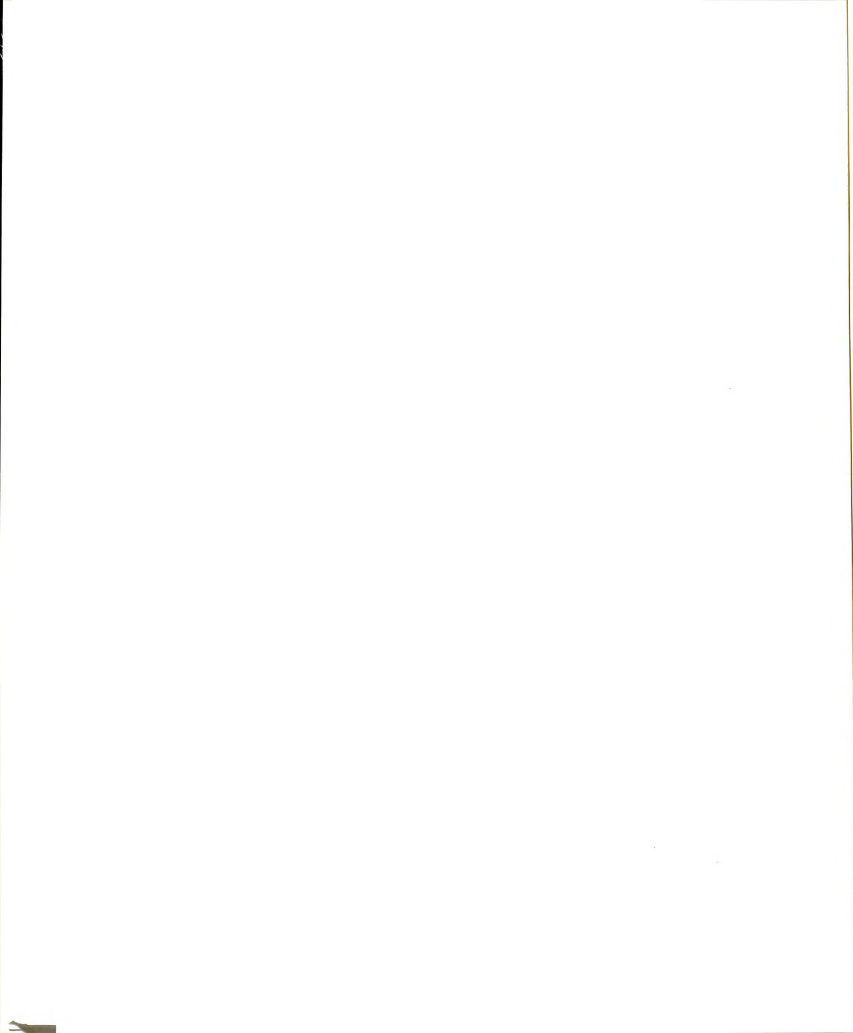
Again, it is possible that the neutral subjects' lower sensitivity



is a product of their lack of attention to items that were not of interest to them. Such a finding would not be interesting in terms of the heuristic value of attitudes for the organization of attitude-relevant information. However, if it can be shown that the lower $P(A^*)$ values obtained by neutral subjects were not simply attributable to their lack of attention but instead to their inability to discriminate between the attitude categories, this would be even stronger evidence of the organizational properties of attitudes.

As before, subjects' false alarms were decomposed to those committed by confusing the items previously seen between the target categories (group false alarms) and those committed for distractor items (not previously seen). If neutral subjects' lower sensitivities stem from a lack of organizational ability, rather than inattention, they should demonstrate a greater number of false alarms for group items than should attitude category members. But, there should be no evidence that neutral subjects commit a greater number of false alarms for the distractors than category members. In other words, neutral subjects should know which items they had seen previously, but should demonstrate an inability to remember to which group the items belong.

Table 4 shows the mean false alarm rates of each type by subject category membership for valenced items collapsing across valence type. Analyses indicated a significant interaction of false alarm type with subject category, $F(2,154) = 10.23$, $p < .0001$. Planned contrasts revealed that the interaction was due entirely to neutral subjects committing a greater number of false alarms between the two attitude categories (group false alarms) than those committed by members of the categories, $F(1,116) = 14.00$, $p < .0005$. Comparisons of the category

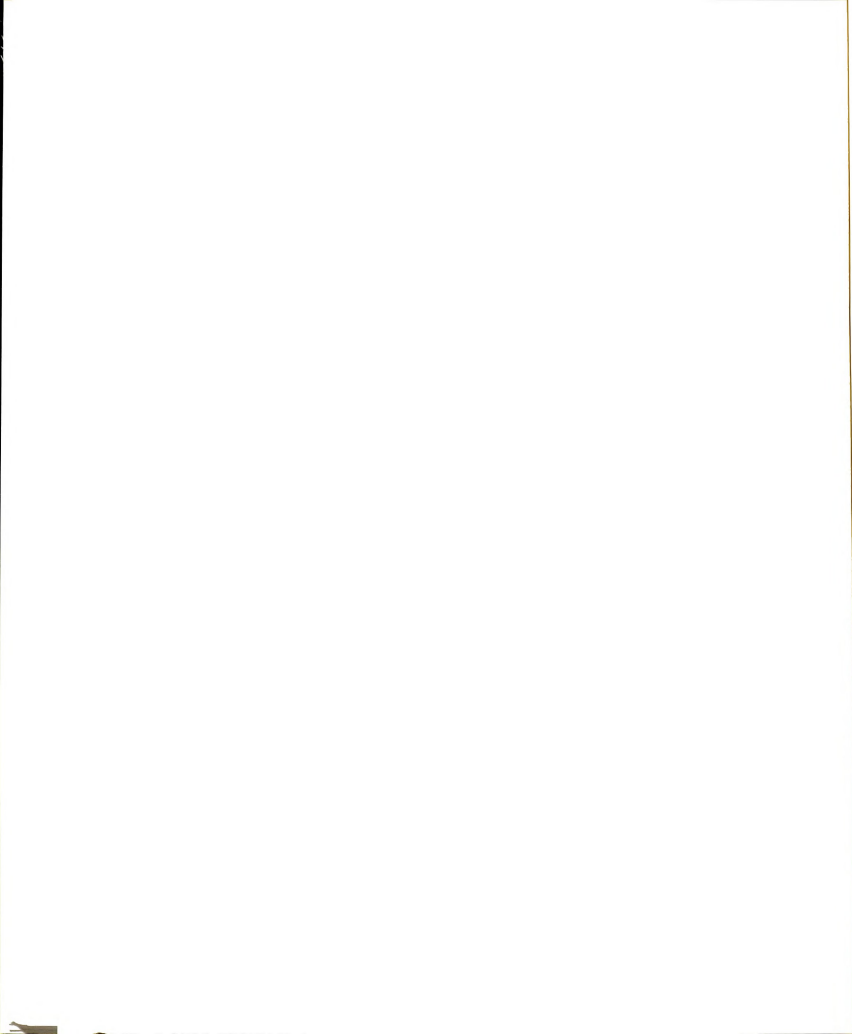


members to the neutral subjects on the number of distractor false alarms committed, yielded no significant difference, $F(1,116) = .47$, $p = ns$. Thus, the lower sensitivity to the valence items demonstrated by neutral subjects as compared to attitude category members, would seem to be explained by their tendency to confuse the target categories with each other, rather than by mere inattention to the items.

As before, the between-category confusion demonstrated by neutral subjects says little about their lack of organization of category-relevant information unless it can also be shown that, regardless of item placement, their sensitivities were equal to those of their attitudinal counterparts. If they have a lower overall sensitivity to these items than pro- or anti- subjects, this would be evidence that they were simply not attending to the items with the same rigor as category members.

Examination of the $P(A^*)$ values in Table 5 once again, reveals that overall sensitivity for neutrals was indeed equal to that of the pro- and anti- category members. Collapsing across valence type (favorable and unfavorable), planned contrasts between category members and neutrals yielded no significant difference for $P(A^*)$, $F(1,116) = .49$, $p = ns$. Thus, neutral subjects were as capable as category members of recognizing those items that were presented. Given that both criteria, enumerated above, have been met, it appears that neutral subjects' lower sensitivities toward target category statements may be explained entirely by their inability to organize the presented information into the attitude categories.

In brief, comparisons between attitude category members and neutral subjects, again, offer strong support for the organization properties of attitudes. As predicted in Hypothesis 2, neutral subjects, having no position on the issue at hand, lack a means of organizing issue-relevant

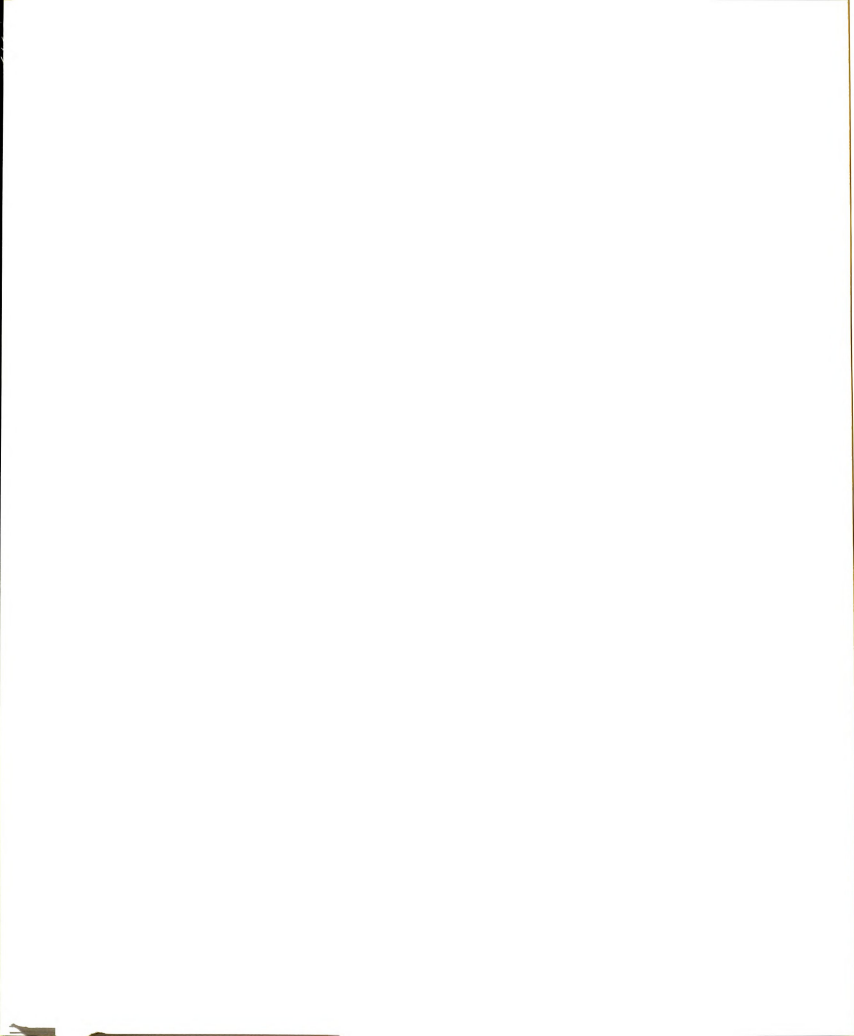


information. When attempting to recognize this information, neutrals can discriminate between presented and distractor information, but tend not to correctly identify the presented information with the category from which it originated.

Finally, an unpredicted interaction was found between statement category (pro- vs. anti- target) and statement valence. A post hoc analysis of the interaction using Tukey's procedure, indicated that the source of the effect was a greater sensitivity on the part of all subjects to favorable statements than to neutral statements (mean $P(A*)=.842$ vs. $.764$) associated with the pro-choice targets, $p < .01$. A breakdown of the sensitivity measure $P(A*)$ indicates that subjects made significantly fewer hits and significantly more false alarms for the pro- nonvalent items than for the pro- favorable items, $F(1,154) = 42.28$, $p < .0001$, and $F(1,154) = 5.32$, $p < .05$, respectively.

Further decomposition of the false alarm rates reveals that more false alarms were made for nonvalent items than for favorable items due to category confusion (group false alarms), but not to false recognition of distractor items, $F(1,154) = 22.29$, $p < .0001$, and $F(1,154) = 1.43$, $p = ns$, respectively. It would appear that subjects, regardless of attitude category, misassigned nonvalent statements from the anti-targets to the pro- targets more often than they misassigned favorable statements from the anti- to the pro- targets, resulting in a higher false alarm rate and lower sensitivity for pro- nonvalent statements.

Ancillary measures. The evaluative scales were combined to form a single measure. This procedure yielded a seven item scale for each attitude category ranging from 7, indicating an unfavorable evaluation, to 49, indicating a very favorable evaluation. Coefficient alpha



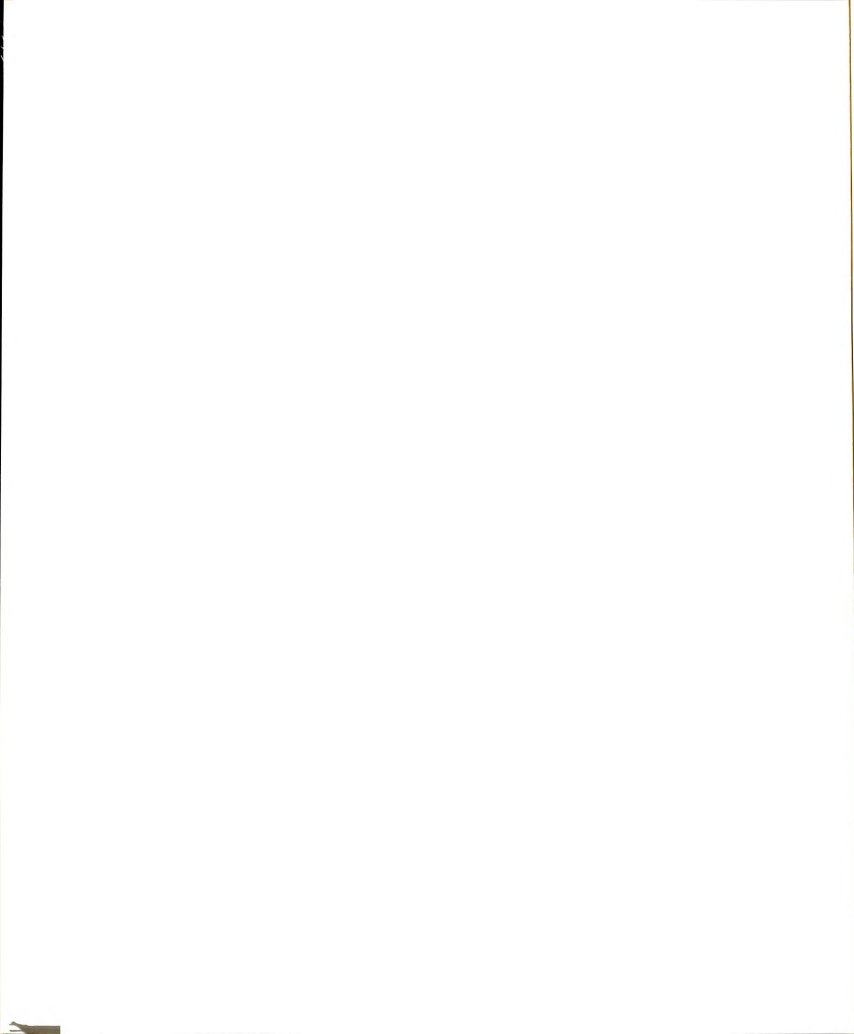
was .849 for the pro-choice target group, and .795 for the anti-abortion target group, indicating that the scales were of reasonable unidimensional quality.

An analysis of variance was performed to assess the effects of subject attitude category and target category on evaluation with repeated measures on the latter factor. The corresponding means are given in Table 6. Analyses revealed a significant interaction between subject and target categories, $F(2,76) = 12.74$, $p < .001$. Simple effects indicate that both the Pro-Choice and the Anti-Abortion subjects evaluated their own category more favorably than the opposing category, $F(2,76) = 19.58$, and $F(2,76) = 38.81$, respectively, both p 's $< .0001$. Neutral subjects however, did not differ in their evaluation of the two target groups, $F(2,76) = 2.60$, $p = ns$. The one evaluation item excluded from analysis consisted of perceptions of the target groups as independent/conforming. Separate analysis conducted for this item revealed no significant interactions or main effects, all F 's < 1 .

Table 6. Evaluation of Pro-Choice and Anti-Abortion Targets
by Subject's Attitude Category

Target Category	Subjects' Attitude Category		
	Pro-Choice	Anti-Abortion	Neutral Abortion
Pro-Choice	32.73	23.52	27.50
Anti-Abortion	26.52	32.24	30.20

note: higher values indicate
greater favorability

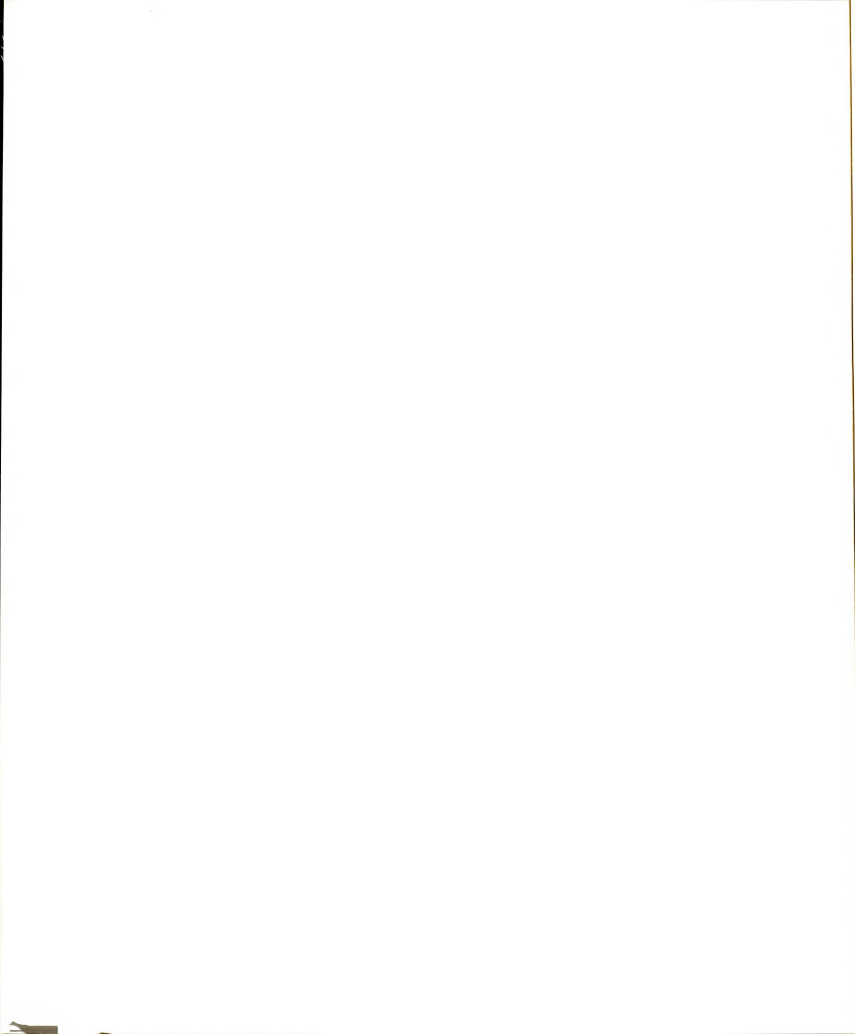


Also included in the evaluation of the targets was a measure of the subjects' perceptions of the ideological nature of the target categories. Analyses revealed a significant interaction between subject and target categories, $F(1,76) = 7.71$, $p < .01$. As Table 7 indicates, and planned contrasts show, both Pro-Choice and Anti-Abortion subjects perceive pro- targets as more liberal than do neutral subjects, $F(1,76) = 10.00$, $p < .005$. There was no difference between neutrals and category members, however, in their perceptions of anti-abortion targets as conservative, $F(1,76) = 1.80$, $p = ns$. As expected, both pro- and anti- subjects perceived ideological differences between targets, $F(1,76) = 133.93$ and $F(1,76) = 103.24$, both p 's $< .0001$. Contrary to expectations, however, neutrals also perceive a difference, $F(1,76) = 10.15$, $p < .001$. It appears, however, that these perceptions are much stronger for anti- than for pro- targets.

Table 7. Perceptions of Ideology of Pro-Choice and Anti-Abortion
Targets by Subject's Attitude Category

Target Category	Subjects' Attitude Category		
	Pro-Choice	Anti-Abortion	Neutral Abortion
Pro-Choice	2.14	1.90	3.48
Anti-Abortion	5.52	4.86	4.57

note: higher values indicate perceptions
of target as conservative

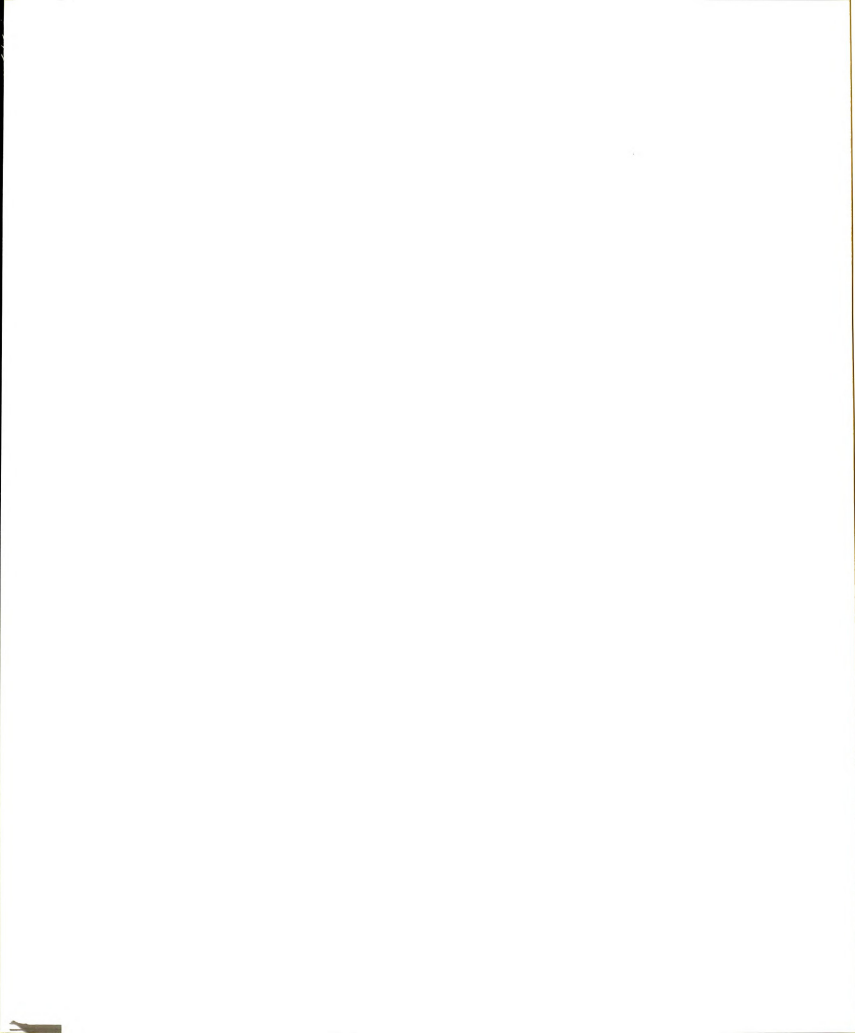


As an additional measure of evaluation and attraction, subjects were asked to decide which category they would most prefer as friends: the pro-choice group, the anti-abortion group, or neither group. Both the Pro-Choice and Anti-Abortion subjects were overwhelmingly in favor of members of their own group, (80% and 76.9%, respectively), while neutral subjects were most likely to pick neither group, (72.7%), $\chi^2(4) = 65.6, p < .0001$. The neutrals not only felt equal attraction to both groups (13.6% of the sample selected pro- targets and 13.6% selected anti- targets), but, most often desired neither group as friends.

Summary and Conclusions

In sum, Alternative Hypothesis 1 and Hypotheses 2 received very strong support. A test of the selective retention hypothesis proposed by the early research against the attitude bipolarity hypothesis raised by Judd and Kulik (1980) demonstrated very strong evidence for the latter, with virtually no evidence for the former. Subjects who were members of attitude categories recognized with equal sensitivity all statements made by categorized targets, regardless of whether the items favored their own, or the opposing category. In all, sensitivity rates of categorized subjects were very strong with no indication of selective retention toward valence information from either category.

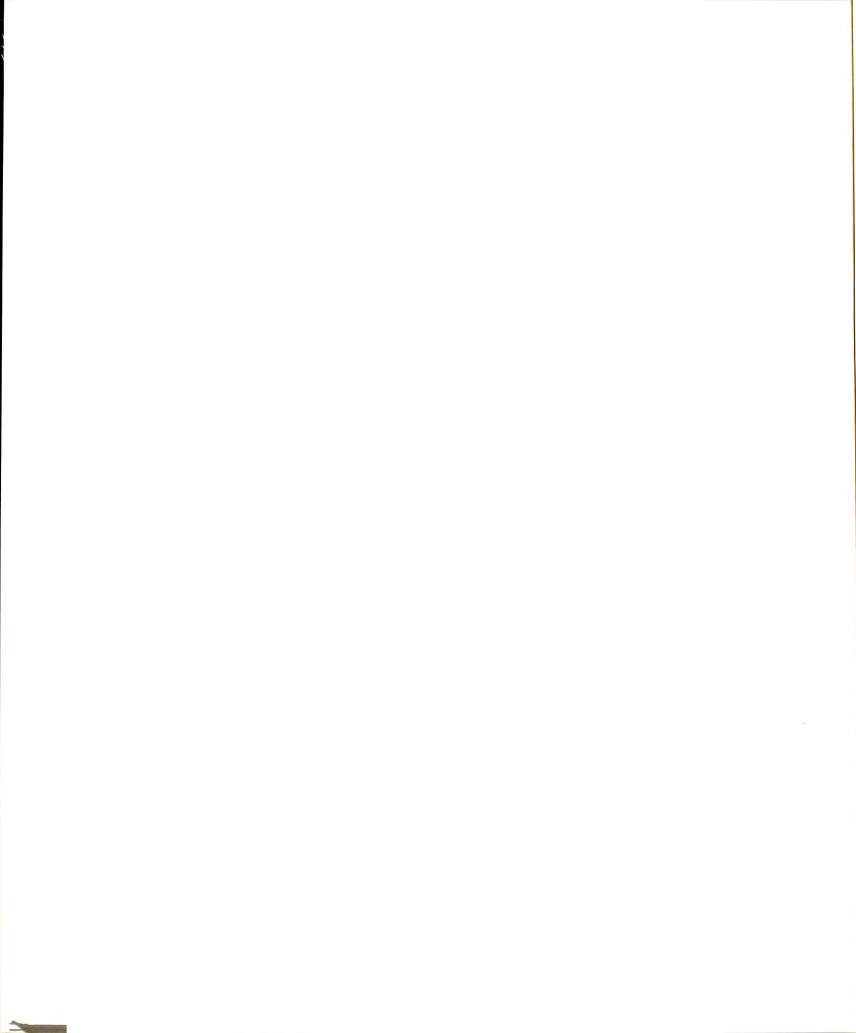
A critical test of whether attitudes as social categories have cognitive-structural properties yielded clear evidence that without attitudes, individuals lack the means necessary for organizing attitude-relevant information. As predicted, neutral subjects exhibited lower sensitivity rates than their categorized counterparts. Moreover, it was



shown that this lower sensitivity was due to the neutral subjects' inability to correctly classify the information in the group in which it was presented, rather than to their inattention or lack of interest in the items. It would seem that attitudes do contribute a significant amount of structure to incoming attitude-relevant information. Without them, the individual has little means available to remember the attitude class in which the information appeared.

Hypothesis 3, although supported insofar as pro- and anti- subjects demonstrated lower recognition for nonvalent than for valent information, is in need of a major qualification. It was found that poorer memory for nonvalent information was not due to the absence of a means by which to organize it. Rather, the results suggest that subjects simply did not pay as much attention to the nonvalent information at the outset. Of major importance is the fact that this effect was found across all subjects, regardless of attitude category. Therefore, it would appear that nonvalent information is not as attention getting as favorable or unfavorable information when forming an impression of a target person. In her review of the role of attention in impression formation, McArthur (1981) concludes that intense or evaluative behaviors are more apt to "grab" a person, than "more moderate, commonplace, or static ones."

It should be noted that the results presented here, while consistent with the findings of Judd and Kulik (1980), go beyond their study of the structural properties of attitudes in several ways. Recall that Judd and Kulik did not classify subjects in any manner with regard to their attitudes and then measure their retention of attitude-relevant statements. Instead, subjects simply rated different issue-relevant statements for their extremity and whether they agreed or disagreed with



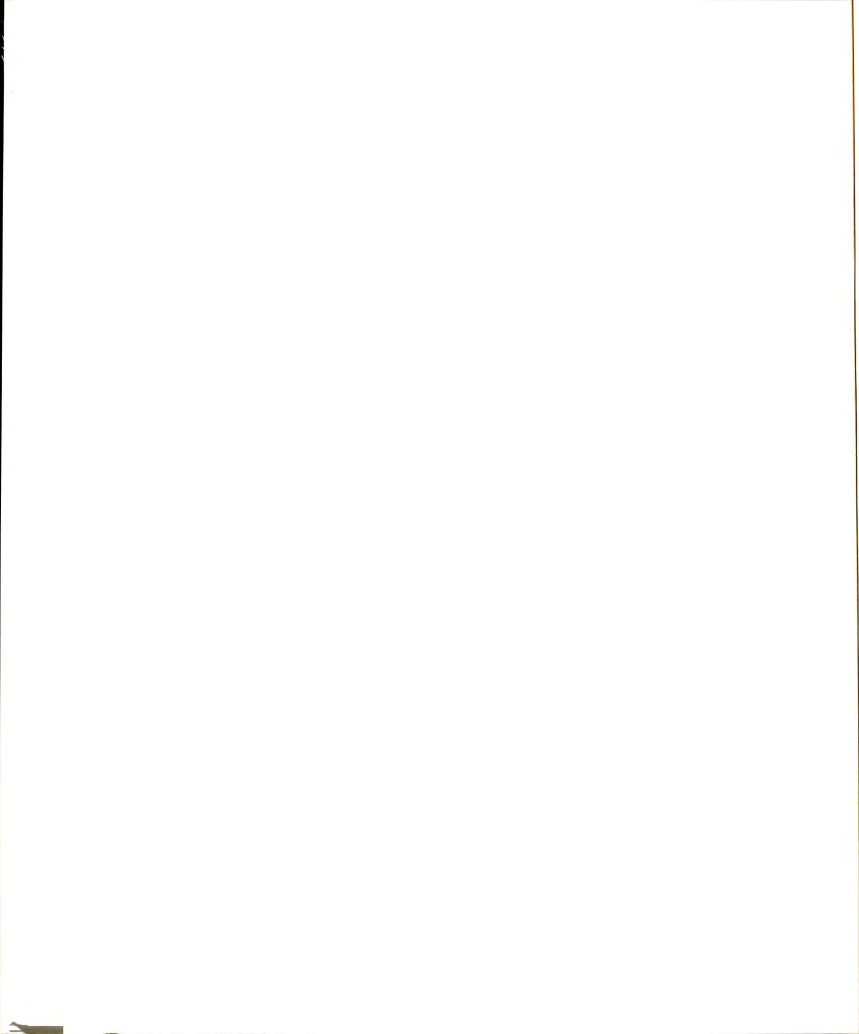
them. The authors found that subject recall was greatest for items that were rated as extreme, regardless of their agreement with them. They concluded that this finding was indicative of a "bipolar attitude schema."

An alternative explanation overlooked by Judd and Kulik suggests that their findings were due, not to a "schema," but to the salience of the statements for the subjects, irrespective of the subjects' attitudes. To be sure, extreme responses probably are indicative of an underlying attitude. But, it has also been shown that regardless of prior expectancies, information of an extreme nature is more easily accessed in memory than information that is not so extreme (Hastie, 1981). The statement-by-statement analysis of recall used by Judd and Kulik then, does not allow a "teasing out" of the effects of statement extremity versus the effects of attitudes on memory for attitude-relevant information.

Moreover, the Judd-Kulik procedure does not permit an assessment of how issue neutrality would influence memory for attitude relevant statements. Measuring the relationship between an individual's statement neutrality and statement recall says little about how overall issue neutrality would affect memory of these statements. Indeed, the lower recall of statements receiving a "neutral" rating may have been due more to a lack of initial subject attention to the item rather than a poor retention of it. Consistent with this alternative, subjects in the present study demonstrated poorer memory for neutral information precisely because they did not attend to it during presentation.

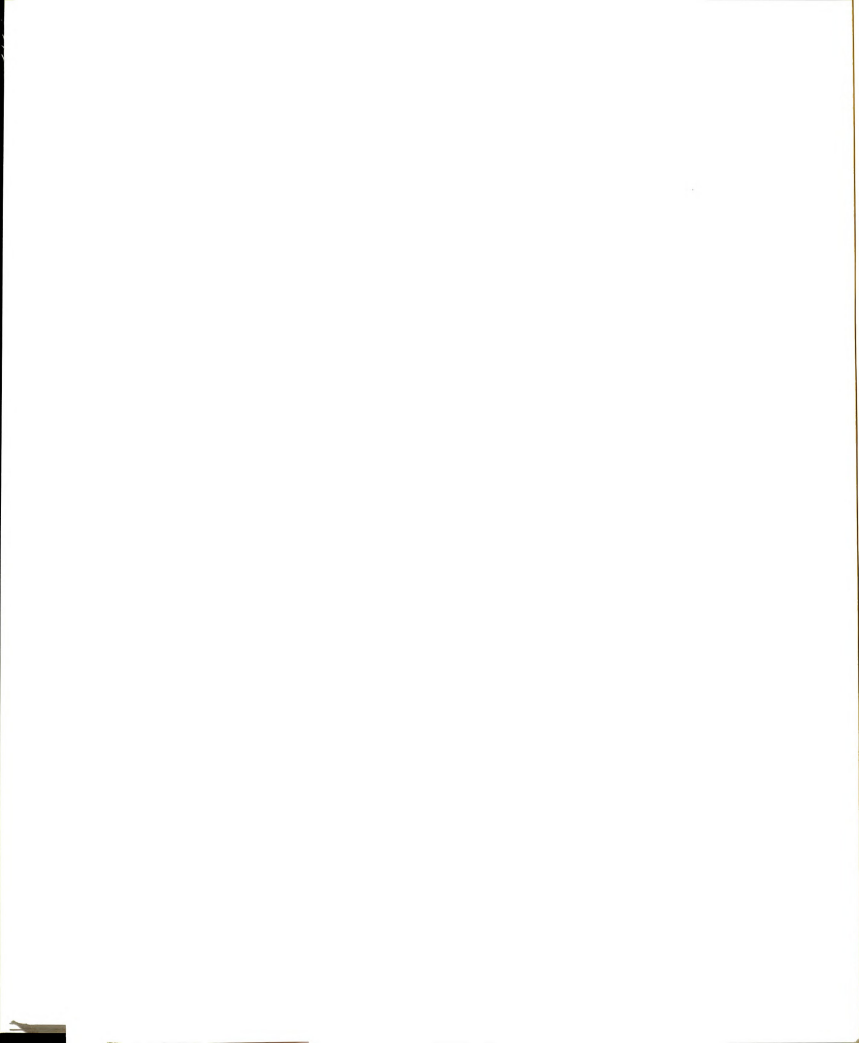
Regardless of the differences between the methods used in Judd and Kulik's (1980) work and in the present study, it is important to point out that the findings for attitude bipolarity were quite similar. It would appear that the utility of information, with respect to counter-argumentation and defense of one's opinion, is not the explanation for why this is the case. If utility was the reason for retention of supporting and challenging information in the earlier research, the present investigation would not have demonstrated that neutral individuals had statement recognition equivalent to their attitude counterparts. Presumably, statements made by pro- and anti- targets had less relevance to neutral subjects than they had to the pro- and anti-category subjects who shared the targets' attitude labels. Indeed, if the utility explanation was correct, neutral subjects would have recognized fewer statements than the pro- or anti- subjects.

One alternative explanation for the results in the present study involves a "hot cognitive" perspective. Since attitudes consist, in part, of an affective component, it is possible that pro- and anti-subjects, for whom the pro- and anti- target statements presumably had greater affective-relevance, processed the information to a much greater extent than did their neutral counterparts. While all subjects, regardless of their attitude category, attended equally to the statements in order to form impressions of the targets, perhaps attitude category members gave the statements greater amounts of thought than did neutrals. For example, pro- subjects, having read the anti-target statement, "I sold LSD to an eighth grader," might have considered how it reflected on their own category membership during the time at which they were forming impressions of the anti-target group. Therefore, upon



having to remember the target category in which the items were originally presented, the deeper thought given to the statements by category members might have led to recognition that was superior to that demonstrated by the neutrals, for whom the items were possibly processed with less vigor.

Although the affect-relevance explanation appears to be a plausible alternative to the utility hypothesis as an account of the item sensitivity differences between attitude category and neutral subjects, it is not clear how this motivational explanation would account for attitude bipolarity. One implication of the affect-relevance hypothesis is that information is stored best when it is given the greatest consideration, thought or "working through" in relation to the self. Hastie (1981) argues that, in processing social information, incongruent items often are the object of a greater "working through" to make them consistent with the other items previously stored in the already present cognitive structure. Congruent items, on the other hand, readily fit into the structure. In the present case, a pro- individual who reads an unfavorable statement about a pro- target would conceivably need to reason out why this statement is not generally representative of pro- individuals. In contrast, information favorable toward one's own attitude category would be consistent with expectations of the group and would, therefore, need less consideration before being encoded into the category structure. Thus, the affect-relevance explanation could predict that as a function of the differential consideration given to attitude incongruent information (i.e., ingroup-unfavorable and outgroup-favorable), attitude category members would demonstrate a greater recognition sensitivity for belief-incongruent statements than for belief-congruent statements. Since, attitude category members in the present study demonstrated an

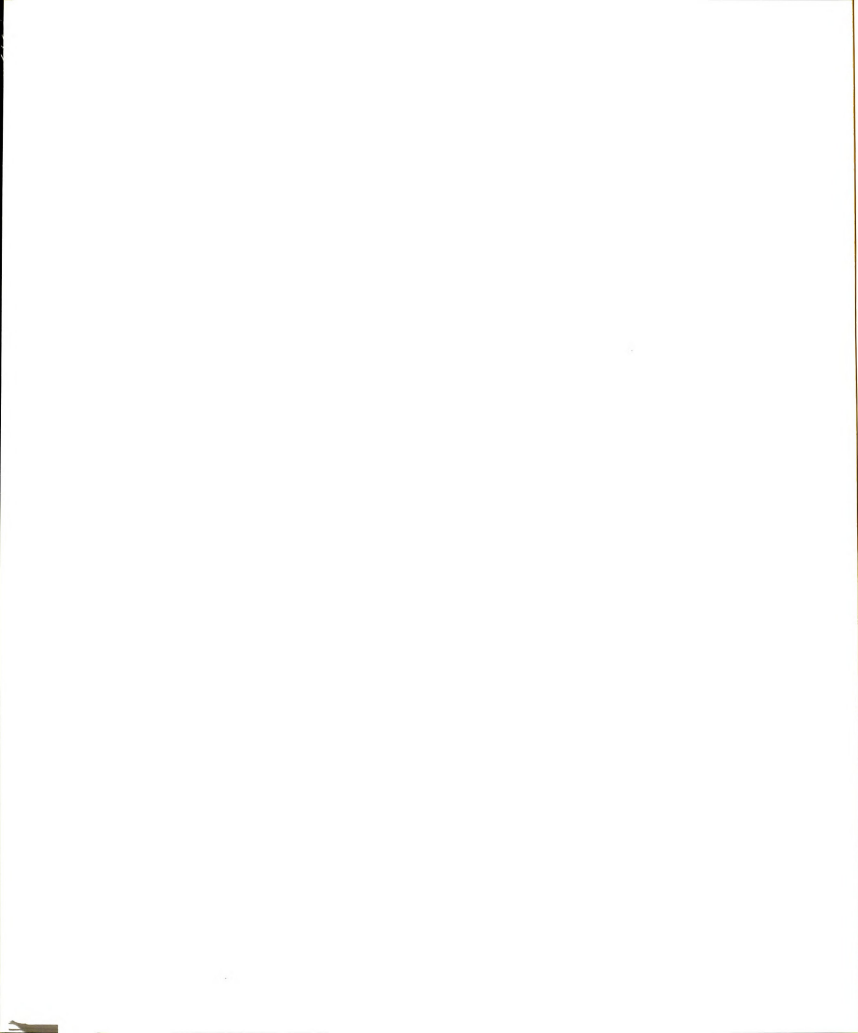


equal sensitivity to both congruent and incongruent information, some doubt is cast upon the affect-relevance explanation.

A second alternative to the utility explanation is somewhat less affective in nature. Perhaps attitude categories serve to "cognitively tune" individuals into attitude-relevant information. In the language of Bruner and Postman (1949), attitudes labels may be considered to be "hypotheses" or beliefs about the way the (social) world works. If certain "environmental cues" are present to activate the hypothesis, the associated social information will be perceived and encoded in memory. If, on the other hand, the individual lacks a hypothesis about the information, or the cues do not activate the hypothesis if it is present, the information will not be stored in memory. Perhaps, members of attitude categories, aware that there are two sides to the abortion issue and having an framework for each of them, encoded information relevant to each side. Neutral subjects, lacking a similar framework, had no means of cognitively "making sense" of the information. While affect and motivation may be involved in this process, it is the presence of the cognitive structure alone that would seem to play the major role in determining the particular social information that is retained.

To be sure, attitudes have a very large motivational component. The evaluative data collected in the present investigation certainly reflect an overwhelming favorability toward individuals who share one's attitude. Byrne and his associates have done extensive research on the effect of beliefs on interpersonal attraction and repulsion (Byrne, 1971; Byrne, Griffitt, Huggins & Reeves, 1969).

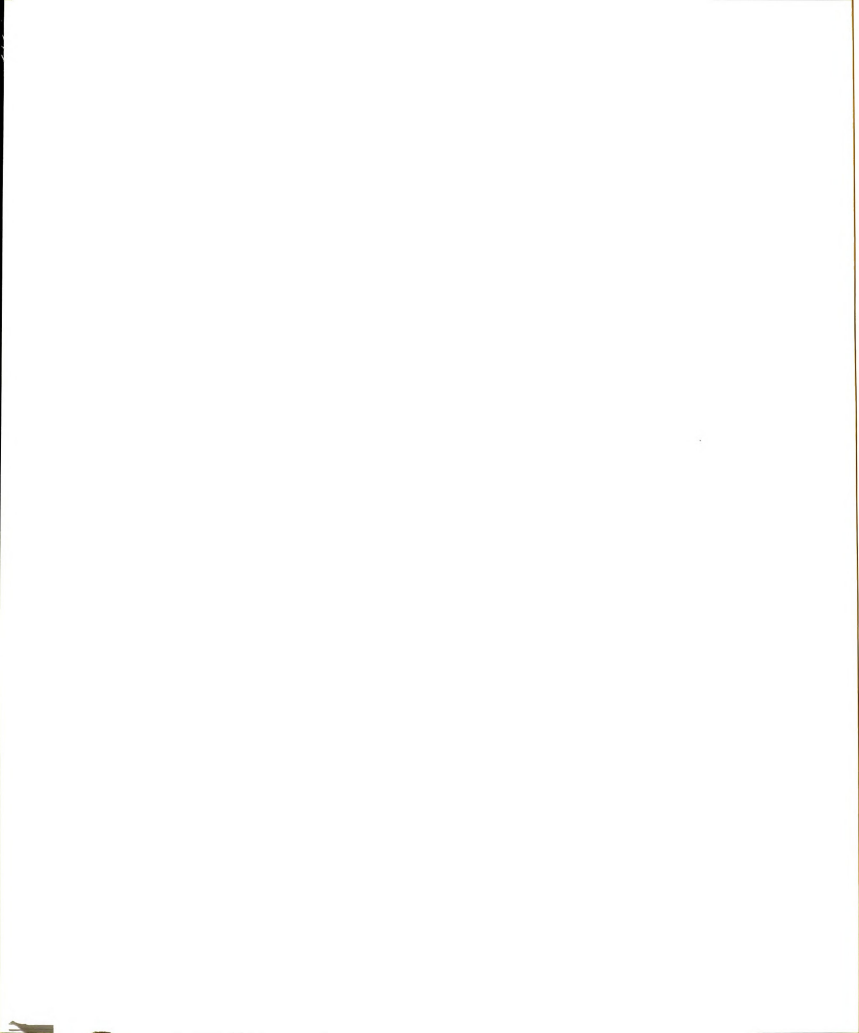
However, these motivational tendencies do not seem to greatly influence the cognitive-structural properties of attitudes. As Zajonc



(1980) suggests, motivation as expressed in evaluation, and cognition as reflected by memory, may be under the control of entirely independent functioning systems. The operation of one does not necessarily imply operation of the other. Taylor and Falcone (1982), in their research on social categorization, have demonstrated strong evaluative biases in the absence of any corresponding biases in memory. It would seem then that individuals probably think about the members of attitude categories in a manner different from the way in which they evaluate them.

In any case, the major contribution of the present research to the study of the cognitive-structural properties of political beliefs would seem to be the substantiation of attitudes as social categories. Individuals appear to categorize themselves and others, not only on the basis of distinguishing visible characteristics they possess (cf. Snyder, 1981), but also with regard to the beliefs that they hold. Although it has yet to be demonstrated that these attitude categories generate different expectations of the members of each category, it is clear that they serve to aid individuals in the classification of information about category membership.

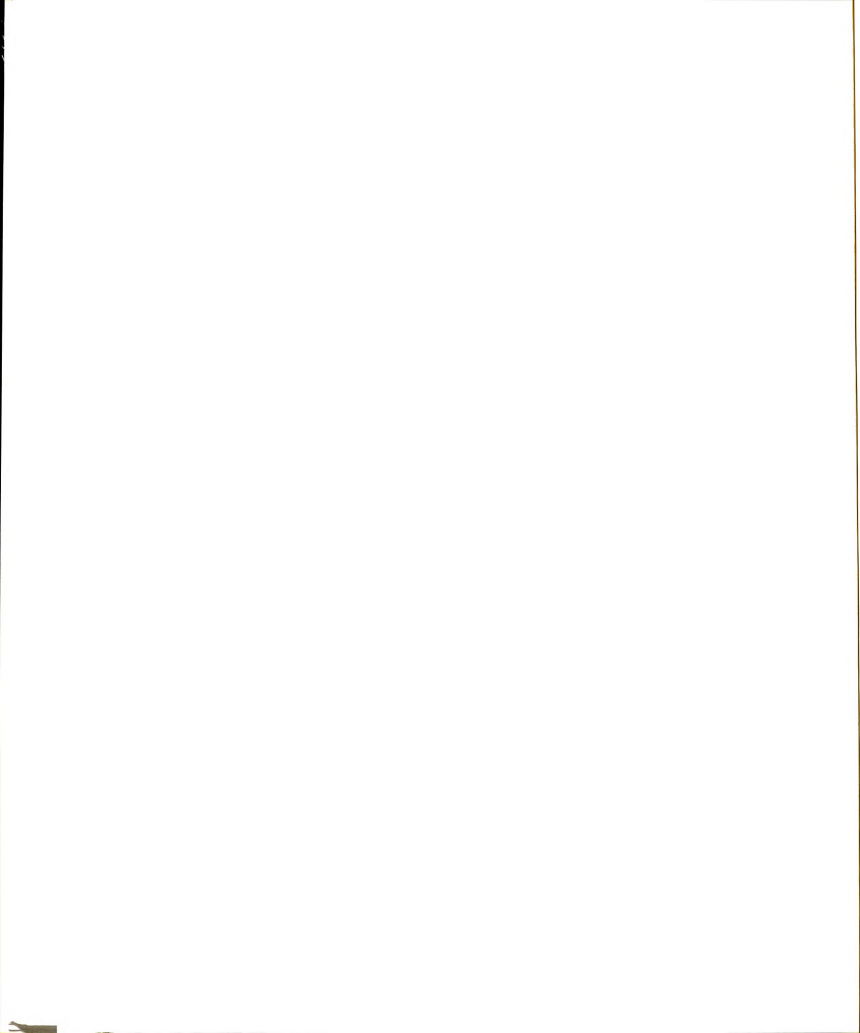
An important concern involves an enumeration of the similarities and differences between attitude categories and other social categories under recent investigation. The research by Howard and Rothbart (1980), for example, suggests that in remembering information about minimal groups, individuals should selectively remember only that which favors the ingroup. As the results of the present study show, however, the retention bias does not appear for information about attitude categories. Although the difference might seem to be based in part on the different formulas used to calculate recognition scores, an evaluation of the present data using Howard and Rothbart's "accuracy" measure does



not support this possibility.

Moreover, it was found in the present case, that all subjects demonstrated lower sensitivity toward "neutral" items than valenced items (both favorable and unfavorable) for pro-choice targets, but not for the category of anti-abortion targets. Perhaps, unlike the social categories created in contrived minimal groups research, "real" attitude categories are not equally meaningful or meaningless, relative to each other. That is, individuals, including members of the Pro- group itself, may have a better articulated concept or hypothesis as to what an "Anti-abortionist" may look like as opposed to what constitutes a Pro-Choice member. This possibility is supported by the fact that subjects in the present study demonstrated a response bias in favor of giving a greater number of "signal" responses to Anti- target items than to Pro- target items, regardless of own category membership. Such a bias indicates a higher expectation that an item will represent an Anti- rather than a Pro- target. Uncertain as to the composition of the Pro-Choice group, subjects may have been more cautious about calling a "signal" in that direction of the Pro-choice target.

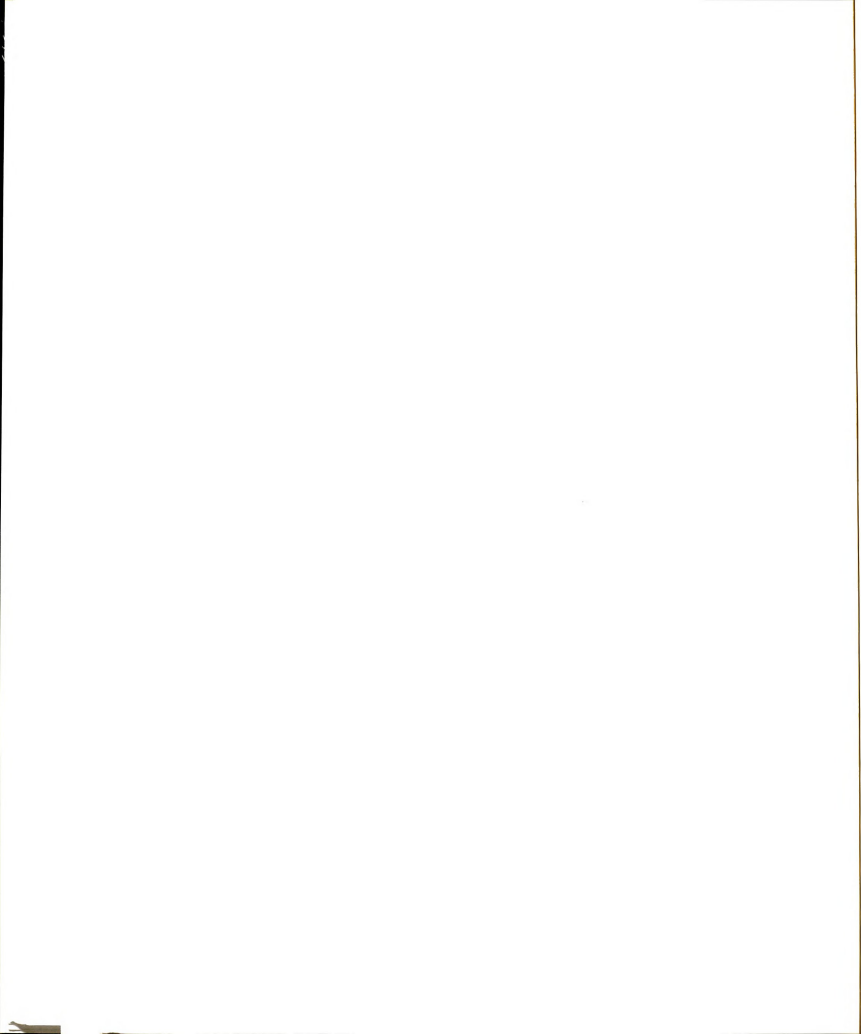
Still, the evaluative biases found in Howard and Rothbart (1980) were replicated here. With very little question, individuals demonstrate a very strong favorability toward members of their own attitude category. Moreover, subject members almost always selected those individuals as friends who share their own attitude identity. It was the purpose of Studies 2 and 3 to further explore the similarities and differences between attitudes and more general social categories in greater detail.



Study 2: A Closer Examination of the Categorical Nature of Attitudes as Cognitive Structures

Having established the cognitive-structural properties of attitudes as social categories in the encoding of information, it seems appropriate to consider other aspects involved in the act of categorizing people on the basis of their political beliefs. If it can be shown for example, that individuals think about the categories of attitudes as they do about the categories of race or sex, this will serve as strong evidence that attitudes serve in the classification process. Failure to demonstrate these similarities as a consequence of the categorization process, however, would cast some doubt upon the attitude-as-category concept. Study 2 investigated several particular hypotheses about the categorical nature of political beliefs.

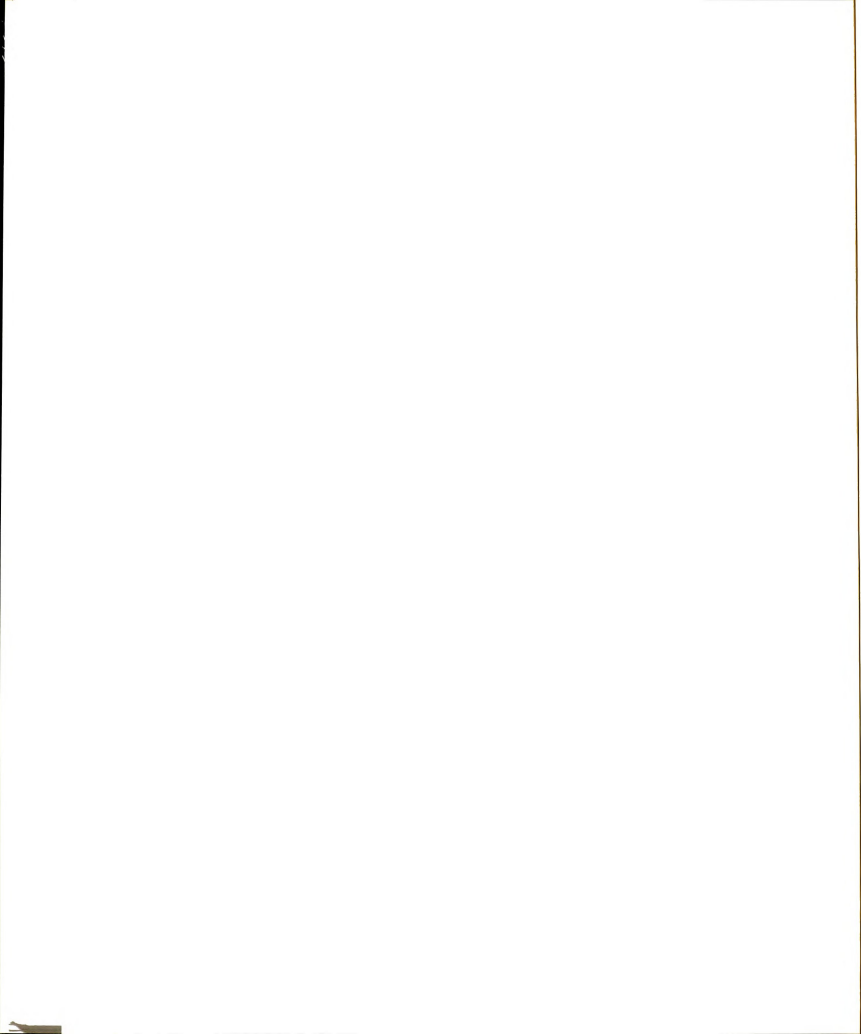
Similarity of Preference. A common finding in the literature on social categorization is that individuals divided into categories (either real or minimal) demonstrate an ingroup favorability bias. Tajfel and his associates (Tajfel, 1970; Tajfel & Billig, 1974) contend that the bias may be explained by two distinct consequences of the categorization process. One result of the application of categories is the notion of cognitive differentiation between classes of people. Presumably, a division of the social environment into two mutually exclusive categories causes individuals to attend to information that would exaggerate the differences between the groups and minimize the differences between members of the same group. In a sense, this distinction is analogous to the perception of "similarity of form" hypothesized in Gestalt Psychology, where objects that are similar in physical



attributes tend to be grouped together and distinguished from other objects that do not share those attributes (Wertheimer, 1923). Wilder (1978) have found strong evidence for this possibility in minimal groups.

The second hypothesis proposed by Tajfel suggests that ingroup favorability originates due to the categorized individual's identification with the ingroup. Knowing little else about the members of the two minimal groups, individuals are uncertain about their social identity relative to the other persons present. In an attempt to maintain a positive self-image, the individual member will behave differentially toward the groups giving a higher status to the category to which he or she belongs. Stanfel and Hymes (1984) have found that individuals who report high self-esteem exhibit an extreme ingroup favorability response in minimal groups, while low self-esteem individuals actually tend toward outgroup favorability.

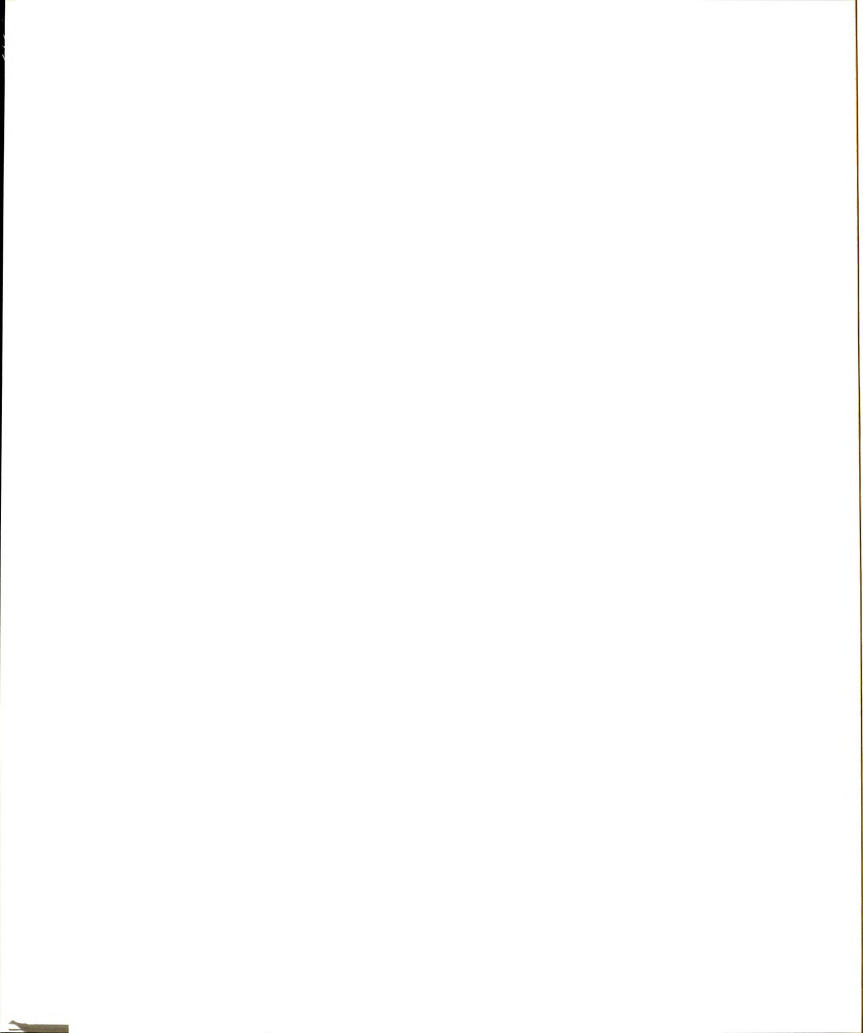
A synthesis of the areas of research on ingroup favorability and ingroup identification would suggest that categorized individuals should demonstrate an expectation that members of their own group are similar to themselves on aspects unrelated to the classification scheme. In a similar fashion these persons should also expect that outgroup members are very dissimilar to themselves on the same measures. Allen and Wilder (1979) have presented strong evidence for the perceptions of within group similarity. Subjects were divided into minimal groups and asked to fill out questionnaires that tapped their attitudes toward political beliefs and preferences for art work. Allen and Wilder found that upon selecting from among various items, subjects preferred information that suggested that they were similar to the ingroup and dissimilar to the outgroup.



It would seem reasonable then to predict that individuals who categorize themselves and others on the basis of attitudes they hold, should demonstrate expectations of similarity analogous to those found in minimal groups. Certainly attitude categories carry much greater meaning and presumably greater weight than minimal group categories in leading individuals to make inferences about others. Specifically, it is anticipated that members of attitude categories should expect that other members who share those categories will also share their preferences for food, music, and art as well as other political beliefs to a greater degree than members of the opposing categories. Individuals who are neutral on the issue and presumably lack an attitude category, should demonstrate no greater expectation of preference similarity with one attitude group than the other.

Perceptions of heterogeneity and homogeneity. A related issue in the study of social categories concerns the perceptions of homogeneity and heterogeneity of members of the classes. Assuming that we have greater contact with members of our own categories than we do with outgroup members, it is likely that we would note a greater variety of characteristics among ingroup than outgroup members. For example, a common complaint made by Americans about the Chinese is that "they all look alike." Rarely, however, would the same comment be made about other Americans, even if in reality, they dress alike, have similar hair color, and speak with the same geographic accent.

In his research on the expectation generated by minimal groups categorization, Wilder (1981) has found that individuals do expect ingroup members to be more heterogeneous and outgroup members more homogeneous in their beliefs. Allegedly divided on the basis of their

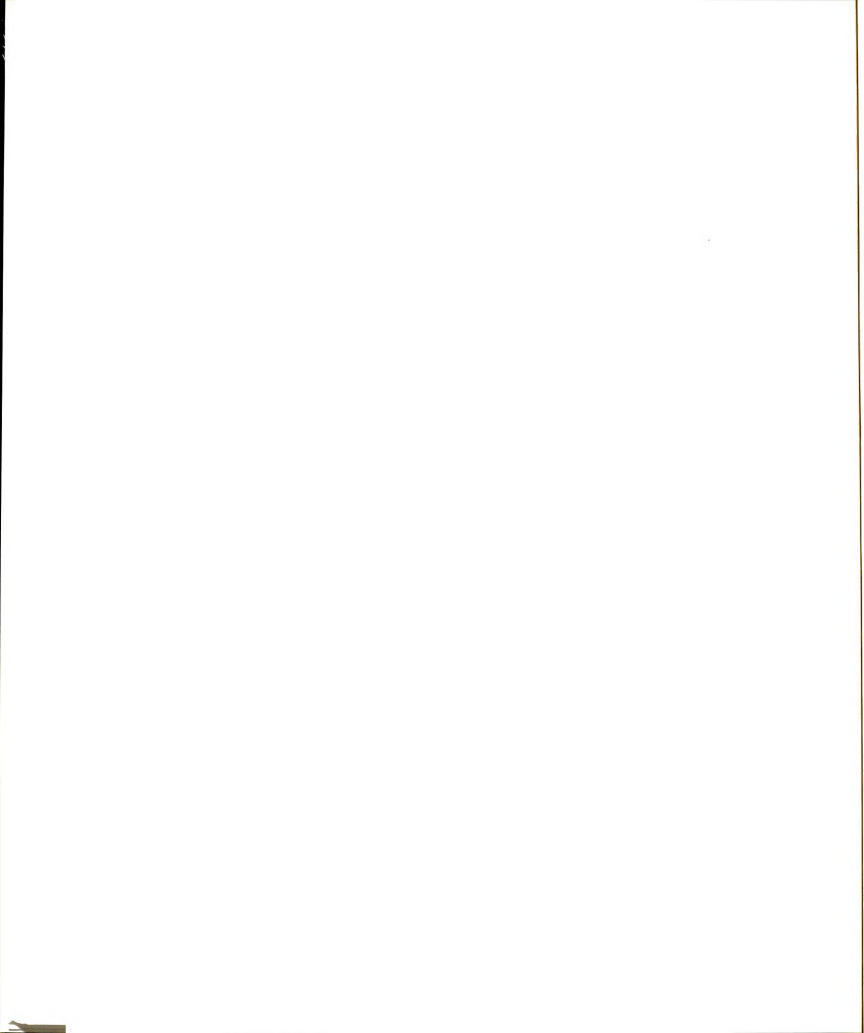


preferences for different paintings, subjects estimated that the range of unrelated political beliefs would be greater for their own group than for the outgroup. Control subjects, who were not categorized, perceived no differences in the variability of beliefs between the two groups. Moreover, the perceptions of homogeneity and heterogeneity were enhanced following a week interval between repetition of the measures.

Therefore, it is predicted that similar findings would be obtained for individuals who perceive themselves as members of attitude categories. Subjects who identify with others who are Pro- or Anti- on an issue should expect that opposing attitude category members will be highly similar to each other in their preferences for food, art and other attitudes. In contrast, they should also perceive members who share their attitude category to be relatively more different from one another on the same items. Neutral subjects, once again, should perceive no differences in homogeneity of preference between the two attitude groups.

Cognitive complexity. The final hypothesis to be considered in Study 2 concerns the notion of complexity in the cognitive representations of ingroup and outgroup membership. Given that an individual is a member of a social category, one means of thinking about the category is to make inferences to the members on the basis of knowledge of oneself. Considering the greater amount of knowledge available to the individual about the self as opposed to an other, it would seem likely that people evaluate themselves using a greater number of dimensions than that used in evaluating about others.

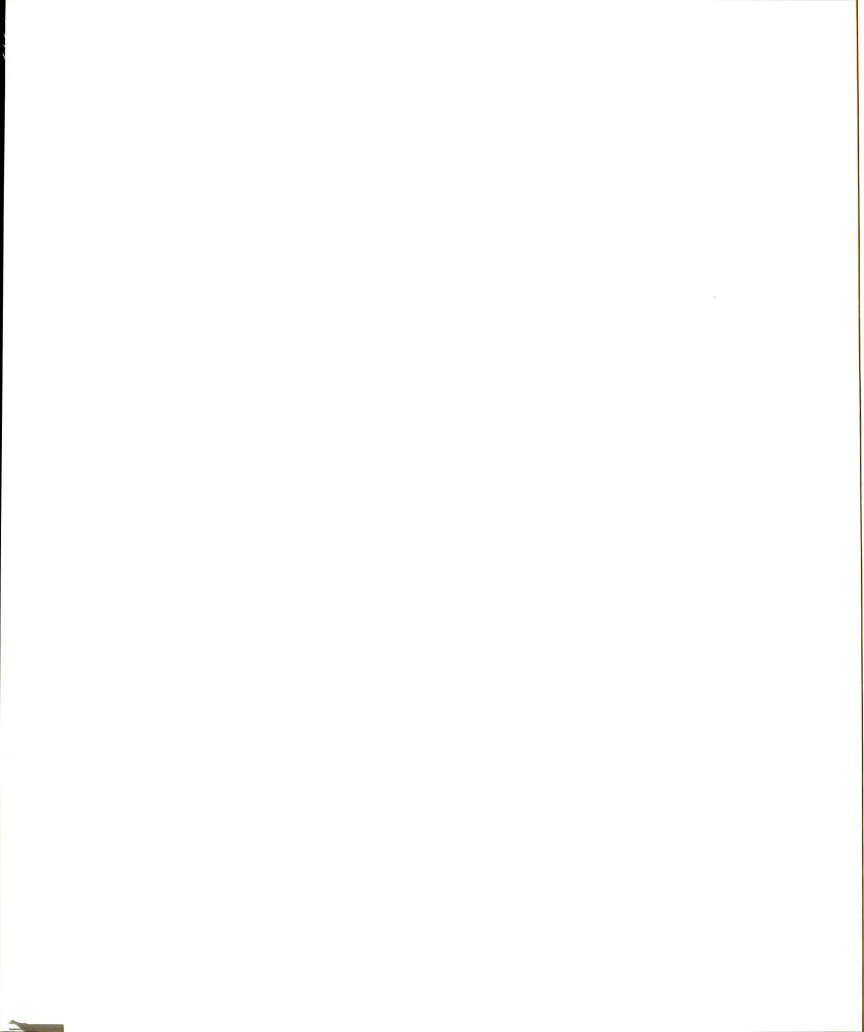
Kuiper and Rogers (1979) considered differences in encoding of information when the referent was the self or an other. They concluded that the processing of information about the self was much easier,



performed with more confidence and led to better recall than the information about an unknown other. Their findings suggest that whereas information about strangers is processed through a "very inefficient rehearsal strategy, the self is a highly organized and efficient schema." It would seem that individuals have more complex cognitive representations of themselves than of others.

If the self-complexity argument is extended to a social category of which the individual is a member, it would follow that cognitive representations of the ingroup should be more complex than for the outgroup. That is, individuals should tend to use more numerous and diverse dimensions in thinking about the members of their own social category than when thinking about the members of the opposing category. In her research on the outgroup polarization effect, Linville argues exactly this point (Linville, 1982; Linville & Jones, 1980). White subjects were asked to sort forty traits into those traits that went together. Half were asked to sort them for a white target, half for a black target. Linville found that subjects who sorted traits for a white target used a significantly greater number of dimensions to do so.

Therefore, it appears that individuals have a greater cognitive complexity for their own social category than for the out-category. If attitude categories share characteristics similar to other social categories, then members of attitude categories should demonstrate greater complexity in thinking about their own group than in thinking about the outgroup. Neutral subjects, on the other hand, having no category membership, should demonstrate equal, but lower complexity for the members of both attitude categories. Since it was demonstrated in Study 1 that neutral individuals lack a means of organizing information about

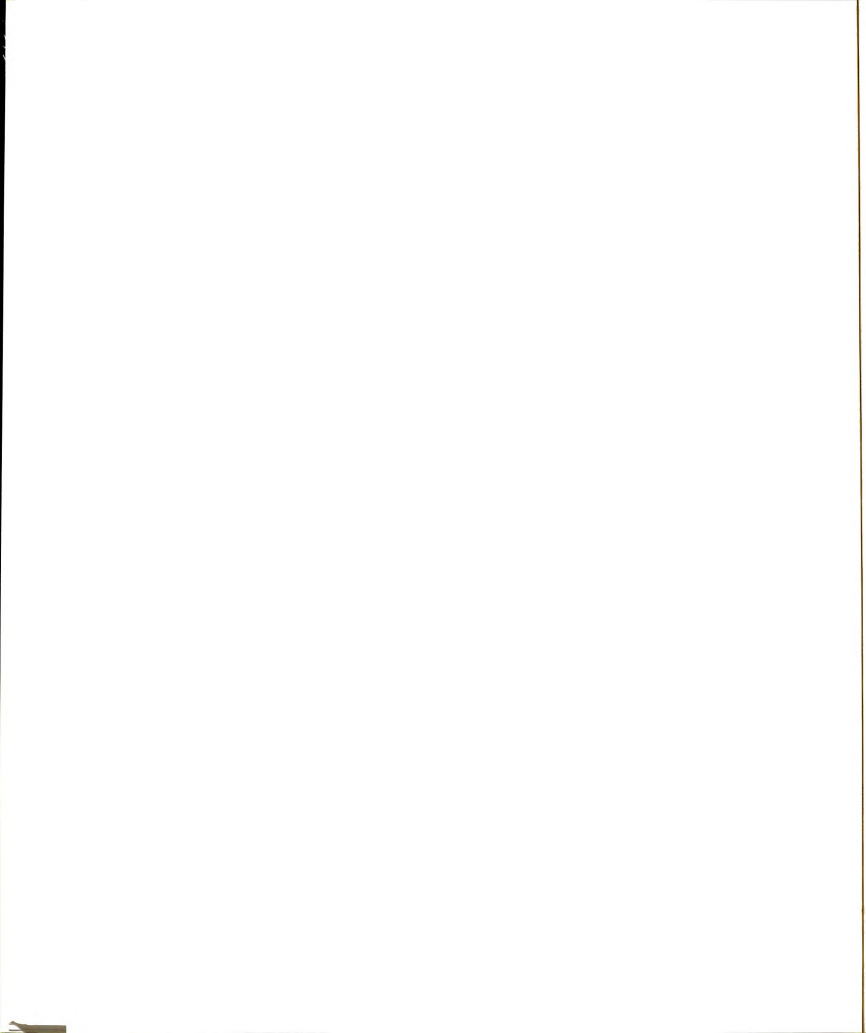


the members of the two attitude categories, it would also appear likely that they use fewer dimensions than the categorized members to think about them.

It should be pointed out that the complexity hypothesis is independent of the question of whether individuals perceive the groups as heterogeneous/homogeneous. If the individual perceives the ingroup as more heterogeneous, it is likely due to the his or her greater contact with different people in the ingroup while having less experience with outgroup members. A greater cognitive complexity for the ingroup, however, should occur irrespective of contact; it refers not to actual experience with group members, but to the degree of articulation with which people think about them.

Certainly, the two hypotheses are related to the extent that an individual has greater experience with one group over the other. For example, it is conceivable that greater contact with the outgroup could lead both to stronger perceptions of heterogeneity as well as a greater complexity for its members. But, it is also possible that such contact, while revealing that the outgroup members somewhat differ from each other, would not necessarily lead the individual to use these distinguishing features to evaluate the category members. Thus, evidence for one hypothesis does not necessarily imply evidence for the other.

In sum, the present investigation explored the similarities and differences between general social categories and attitude categories. It is predicted that, if attitudes are social categories, the following hypotheses will be supported.



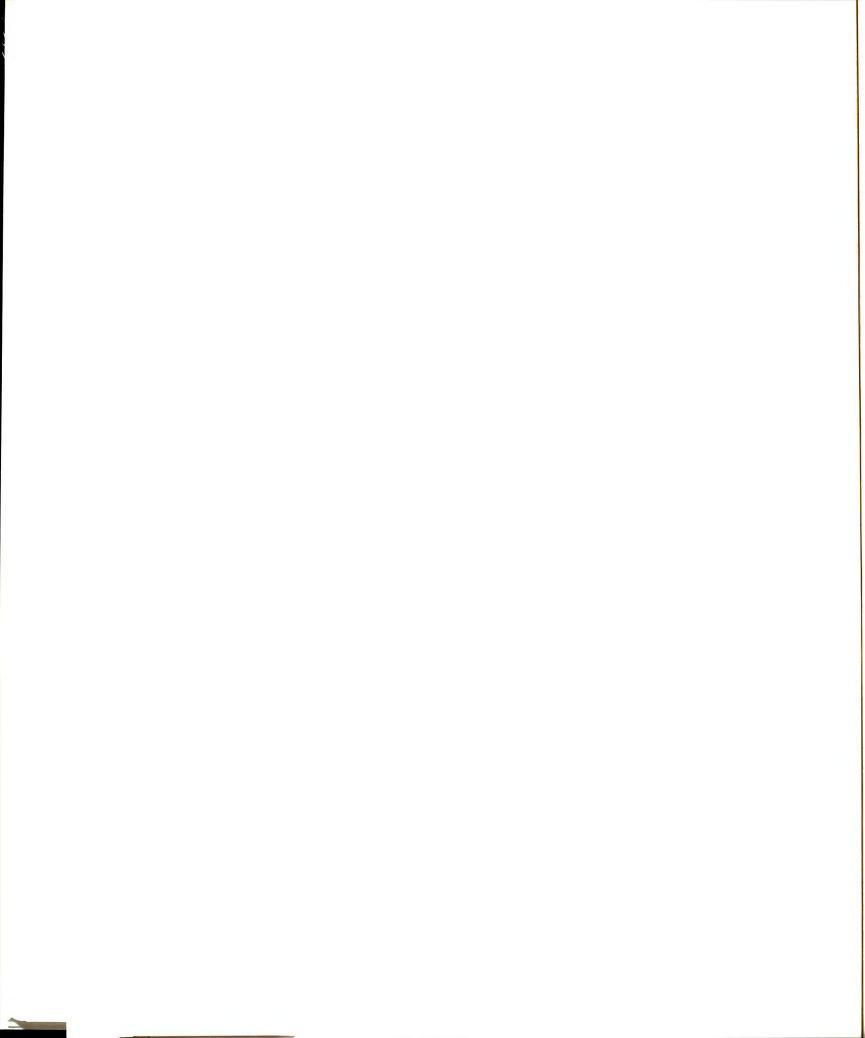
Hypothesis 4. Members of attitude categories will demonstrate a tendency to perceive that the membership in their category is more similar to them than is the membership in the opposing category. Similarity is defined in terms of preferences in other attitudes as well as lifestyle issues (e.g., food). Neutral subjects will tend to feel equally dissimilar to both categories.

Hypothesis 5. Categorized subjects will perceive greater heterogeneity among individuals who share their attitude than among those who hold the opposing position. Neutral subjects, however, will perceive equal hetero/homogeneity among the members of both attitude categories.

Hypothesis 6. Members of attitude categories will demonstrate greater cognitive complexity for members of their own group than for members of holding the opposing attitude. Neutral subjects, once again, will demonstrate equivalent but significantly lower complexity for both groups. This will occur irrespective of the outcome of Hypothesis 5.

Method

Subjects. Two hundred and forty-three males and females participated in the current study for extra course credit in their classes. One hundred and two subjects were taken from a course on Social Psychology. Given the nature of the course material, special care had to be taken to insure that subjects remained unaware of the hypotheses until after their participation was completed. In addition, 65 subjects were drawn from a class on American Government. Since the class material was not relevant to the study, the safeguards employed for the psychology class were unnecessary. An additional 76 subjects were students from a class on survey research methodology. As before, it was necessary to guarantee that they could not discern the true purpose of the study.

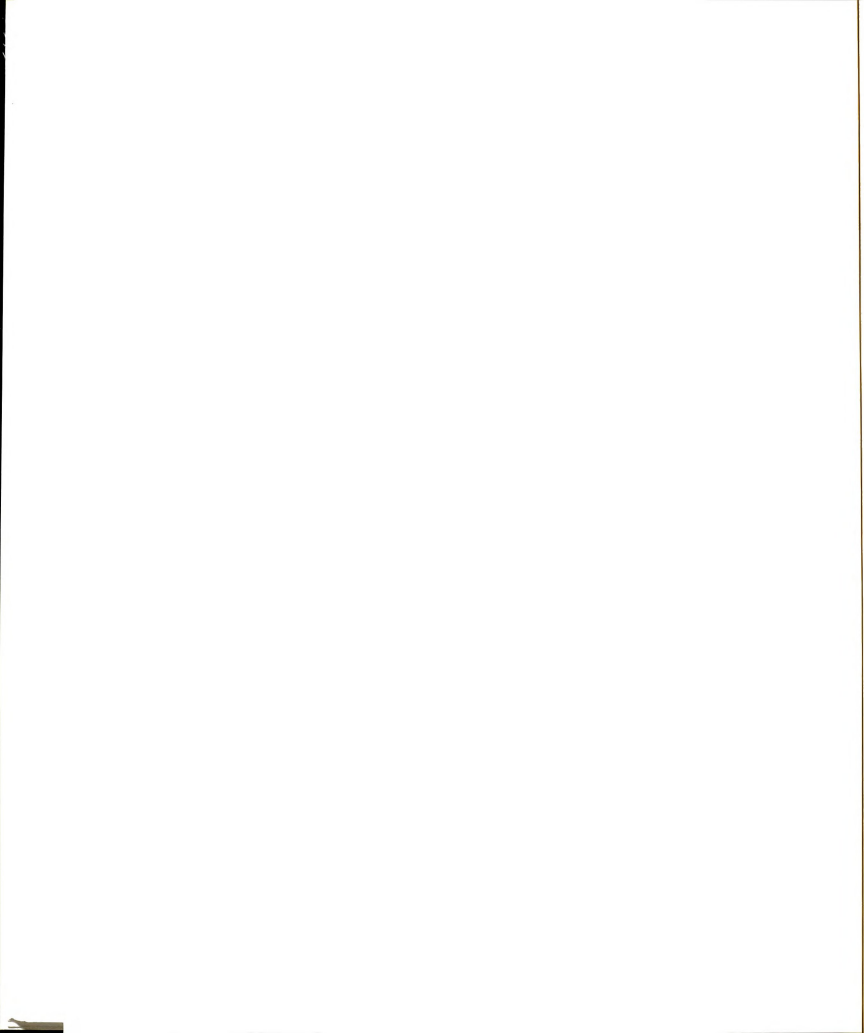


Materials and design. The entire study was conducted through the administration of a survey questionnaire. A copy of the instrument may be found in Appendix D. Subjects responded to various items concerning their beliefs about abortion, their perceptions of the proportion of individuals who share their abortion beliefs, their perception of the degree of similarity among individuals who share the same attitude, and their estimate of the number of different subtypes of people who share an attitude on abortion. Order of presentation was controlled by counterbalancing target order randomly across subjects.

Thus the design was a 3 (Pro-Choice, Anti-Abortion or Neutral subject) X 2 (Evaluation of Pro-Choice or Anti-Abortion target) mixed factorial design, with repeated measures on the latter factor.

Procedure. Subjects completed the entire questionnaire in the room in which their class was held. They were given instructions that introduced the questionnaire and presented anonymity safeguards. The experimenter then distributed the survey instrument and requested that subjects speak to no one until after they had left the classroom. They were given thirty minutes to complete the questionnaire.

After the subjects were finished, the instrument was collected and the experimenter asked them to speculate on paper what they thought might have been the true purpose of the experiment. Although the most frequent response concerned "a survey of attitudes," none of the subjects even approximated any of the actual hypotheses under investigation. Subjects were then thanked for their participation and were given their extra credit.

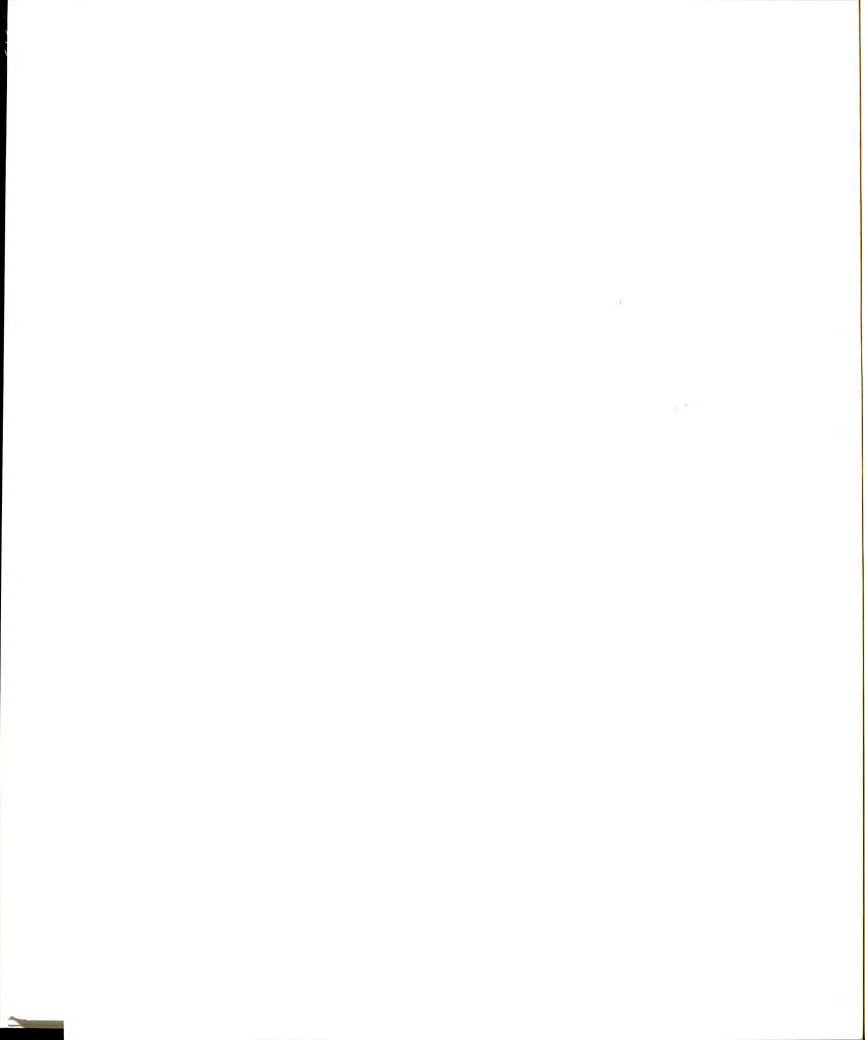


Results

Unlike Study 1, where subjects were selected for the manipulation from a larger pool who had given responses on a pre-test, all subjects in the present study completed the questionnaire, irrespective of whether their responses had met the criteria used for selection. However, subsequent analyses were conducted only on those data from subjects who met the criteria outlined in Study 1.

Reliability analyses were first conducted on the initial abortion measure that was identical to that used in Study 1. Responses from the initial pool of subjects yielded a coefficient alpha of .910, indicating that the eight-item measure was unidimensional. As in Study 1, the sum of the responses on the resulting scale ranged from 8, indicating an extreme anti-abortion attitude, to 40, indicating an extreme pro-choice attitude. Subjects were selected if they met two separate criteria: (1) scoring below 17 (anti), between 19 and 29 (neutral), or above 31 (pro); and (2) responding to the identification question in a manner consistent with their abortion scale score. Data of subjects not meeting both criteria were excluded from further analysis. This procedure yielded a total of 154 subjects: 45 anti-abortion, 36 neutral and 73 pro-choice.

Tests of hypotheses. A repeated measures analysis of variance was conducted to assess the effects of the subjects' attitude category on their perceptions of the two target groups as hypothesized above. Subjects were asked to indicate, in a general manner, how different they perceived themselves to be from the members of each attitude category. It was predicted that pro-choice subjects perceive other pro-choice individuals to be more similar to them than anti-abortion individuals.



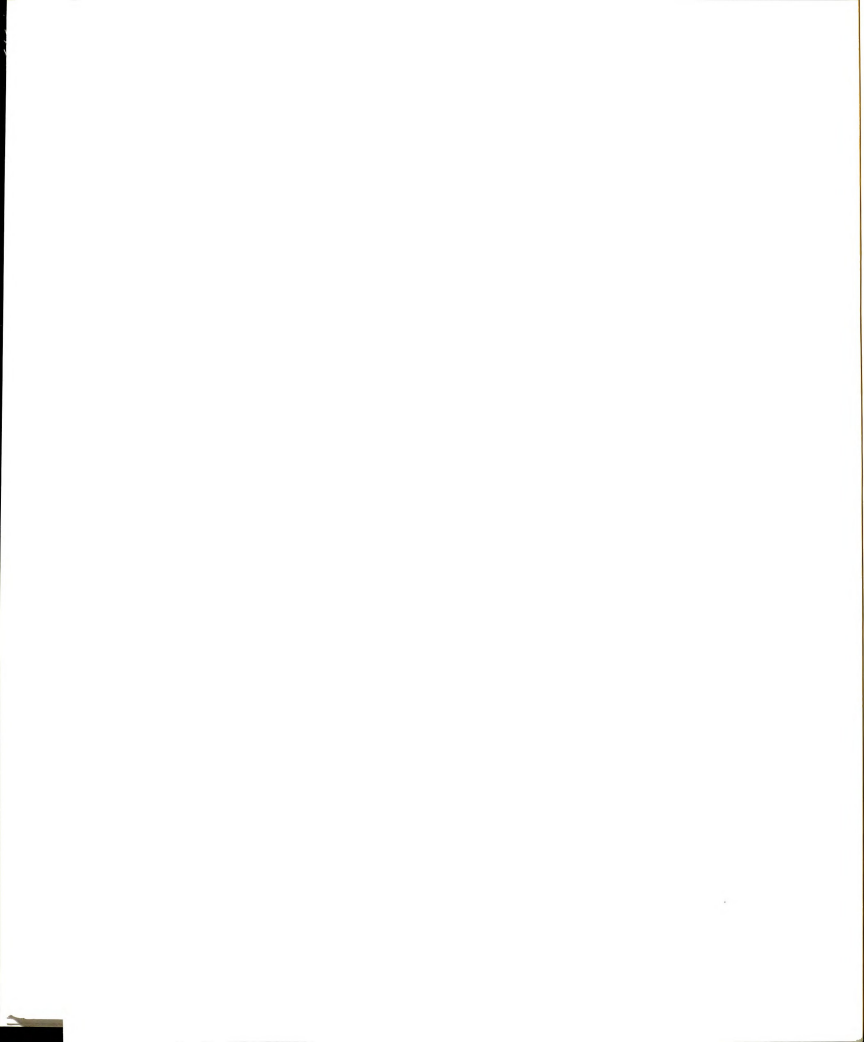
Likewise, anti-abortion individuals should perceive greater similarity to themselves among other anti-abortion category members. Neutrals should feel equal similarity to both category targets.

Table 8 presents the means from the general question. Analyses revealed a significant interaction between subject and target attitude categories, $F(2,151) = 112.84$, $p < .0001$. Planned comparisons were conducted between pro- and anti- targets for each of the subject categories. As predicted in Hypothesis 4, pro-choice subjects perceived greater differences between themselves and anti- targets than they did for pro- targets, $F(1,151) = 352.70$, $p < .0001$. Likewise, anti-abortion subjects perceived a greater difference between themselves and pro-choice target than they did for anti- targets, $F(1,151) = 210.23$, $p < .0001$. Contrary to predictions, however, neutral subjects also perceived themselves as more different from anti-targets than pro-targets, $F(1,151) = 8.18$, $p < .005$. Still, the perceptions of difference for neutrals was nowhere as great as for pro- or anti- category subjects, $F(1,1) = 43.09$, and $F(1,1) = 25.68$, respectively, both p 's $< .0001$.

Table 8. Perceptions of Difference Between Self and Target by
Subject and Target Attitude Category

Target Category	Subjects' Attitude Category		
	Pro-Choice	Anti-Abortion	Neutral Abortion
Pro-Choice	5.49	2.53	4.36
Anti-Abortion	2.44	5.56	3.69

note: lower values indicate greater difference



Subjects were also asked to estimate the number of people out of a possible 100, selected at random, who would share their identical attitudes and lifestyle preferences. For each set of preferences, the individual items were combined to form a unidimensional scale of perceived agreement with the 100 people. Reliability coefficients were calculated for the each measure of perceived agreement with the category targets. For pro-choice targets, both the attitude and the lifestyle items combined to form measures of fairly high reliability, coefficient $\alpha = .772$ and $.915$, respectively. Reliabilities were similar for anti-abortion targets, $\alpha = .720$ and $.900$, respectively.

An identical repeated measures analysis of variance was then conducted on the estimated number of people expected to share the subjects' preferences for the attitude (ATT) and lifestyle (LS) items. The corresponding means are displayed in Table 9. Analysis indicated a significant subject by target category interaction, $F(2, 132) = 24.95$, $p < .0001$. Once again, planned comparisons were conducted between the pro-choice and anti-abortion targets for each subject category. Consistent with predictions, both pro- and anti- subjects estimated that a greater number would share more of their other attitudes if they also shared their abortion attitude category, $F(1,132) = 101.84$, and $F(1,132) = 33.82$, respectively, p 's $< .0001$. Moreover, neutral subjects demonstrated no difference in their estimates of attitude agreement between with either target group, $F(1,132) = .009$, $p = ns$.

Analyses on the lifestyle items also revealed an interaction between categories of subject and target, $F(2,138) = 22.787$, $p < .0001$. Consistent with predictions, planned comparisons again indicate that pro- and anti- subjects estimated that their lifestyle preferences were

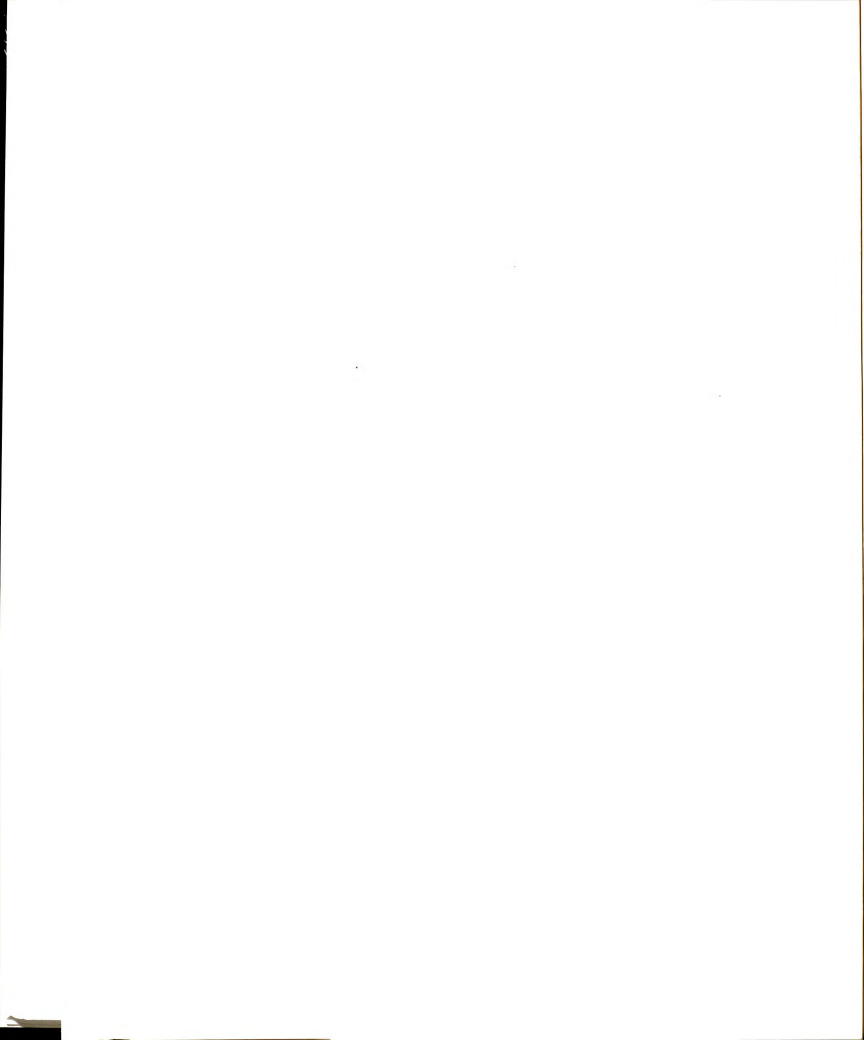
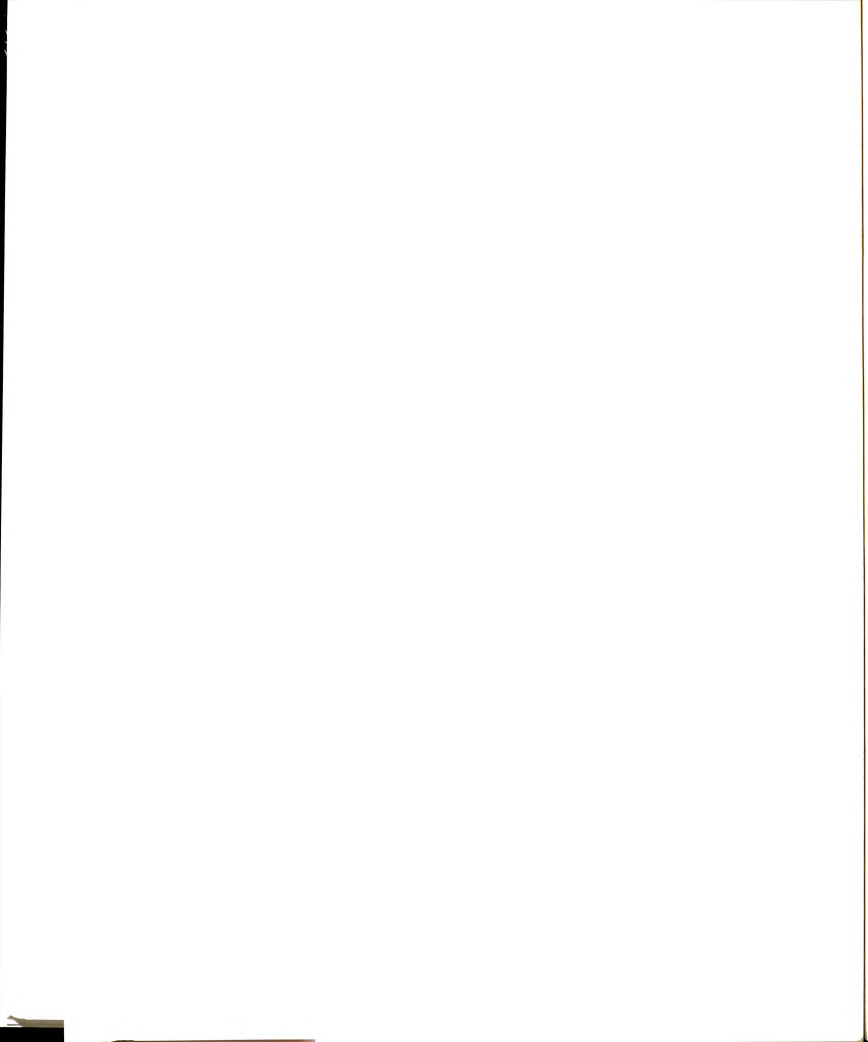


Table 9. Estimates of Proportion Agreement on Attitudes (ATT)
and Lifestyle Preferences (LS) by Subject and
Target Attitude Categories

Target Category	Subjects' Attitude Category					
	Pro-Choice		Anti-Abortion		Neutral Abortion	
	ATT	LS	ATT	LS	ATT	LS
Pro-Choice	52.95	42.54	40.13	34.65	42.75	35.63
Anti-Abortion	35.79	31.11	52.85	43.00	42.44	31.81

shared by more members of their own category than by out-category members, $F(1,138) = 87.32$, and $F(1,138) = 30.49$, respectively, both p 's $< .0001$. Contrary to predictions, but consistent with the findings of the more general similarity measure discussed above, neutral subjects demonstrated a small, but reliable tendency to estimate a higher amount of lifestyle preference sharing with the pro-choice group, $F(1,138) = 5.01$, $p < .05$.

An additional item was included as a check for the subjects' perceived similarity to category members on the abortion attitude itself. As expected, pro-choice subjects estimated that a higher number of pro-choice than anti-abortion people would share their attitude on abortion ($M = 82.70$ vs. 4.57), $F(1,151) = 880.92$, $p < .0001$. Similarly, anti-abortion subjects also perceived more members of their own attitude category as sharing their abortion attitude ($M = 81.50$ vs. 5.03), $F(1,151) = 588.60$, $p < .0001$. Interestingly, however, neutral subjects also estimated that a larger number of pro-choice targets would share



their abortion attitudes (pro- $M = 44.25$ vs. anti- $M = 31.63$), $F(1,151) = 19.12$, $p < .0001$.

In sum, among attitude category members, perceived similarity to own category membership is greater than similarity to opposing membership, both on preferences related to and unrelated to the category label itself. Neutrals, while perceiving no greater similarity to one category than the other in terms of peripheral attitudes, note a stronger similarity to pro- targets than anti- targets on the abortion attitude and lifestyle preferences.

Similar analyses were performed to test Hypothesis 5. It was predicted that members of attitude categories should perceive others in their category as more heterogeneous than members of the opposing category. Once again, a general measure asked subjects to estimate the amount of similarity that existed between members within an attitude category. The mean similarity estimates are presented in Table 10. An analysis of variance revealed, contrary to predictions, that regardless of their own category membership, subjects did not differ in their perception of homogeneity among members of either category, $F(2,151) = .48$, $p = ns$.

Perceptual measures of homogeneity were also collected on the attitude and lifestyle preferences discussed above. Reliability analyses were again conducted on each scale for each attitude category. Resulting coefficients for the pro- target group were high for the attitude and lifestyle measures, $\alpha = .872$ and $.903$, respectively. Analysis of the anti- target group for each measure yielded coefficients that were similarly high, $\alpha = .881$ and $.911$, respectively.

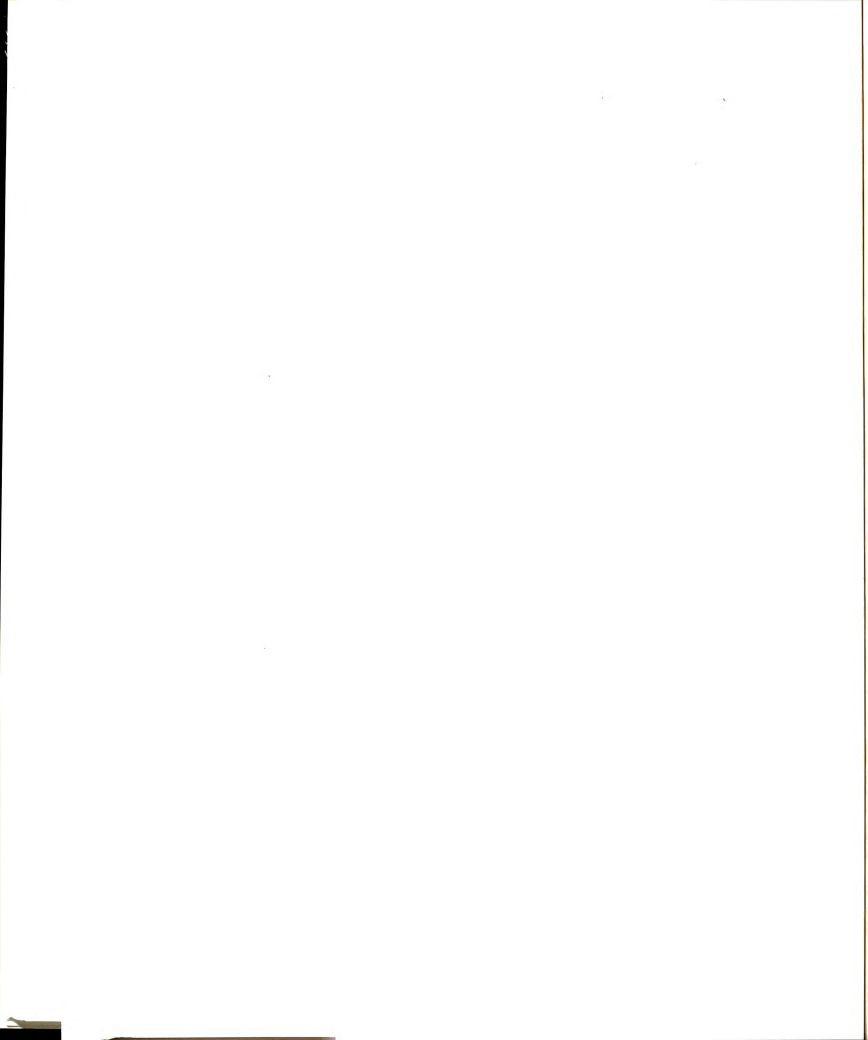


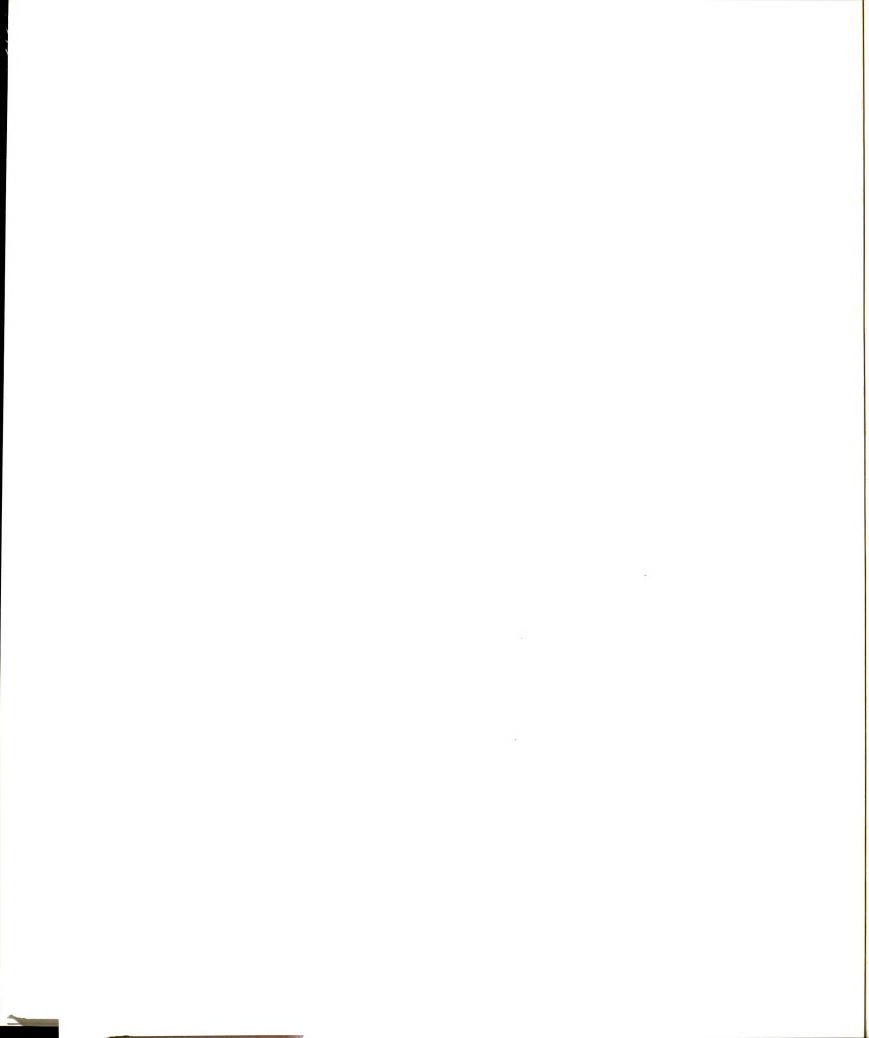
Table 10. Perceptions of Heterogeneity of Attitude Category by
Subject and Target Attitude Category

Target Category	Subjects' Attitude Category		
	Pro-Choice	Anti-Abortion	Neutral Abortion
Pro-Choice	3.53	3.49	3.61
Anti-Abortion	3.23	3.51	3.36

note: 1 = complete homogeneity
7 = complete heterogeneity

Analyses indicated that, as with the general measure, perceptions of homogeneity of membership did not differ in the subject by target attitude category interactions for either the attitude nor the lifestyle preference items, all F 's < 1 . A significant main effect was found for the target category, however. Regardless of their own attitude category, subjects perceived pro- targets to be significantly more heterogeneous than anti- targets in the non-abortion beliefs that they hold ($M = 15.38$ vs. 14.52), $F(1,151) = 7.63$, $p < .01$. Thus, it appears that pro- targets, while perceived as equal to anti- targets in homogeneity in a general sense, are thought to be more heterogeneous with respect to their stands on other issues.

Again, an item was included to assess the perceptions of heterogeneity of attitude category members on their attitudes toward abortion. Contrary to predictions, but consistent with the results above, the pro-choice subjects perceived no heterogeneity differences between the two categories on the abortion measure, $F(1,151) = .710$, $p = ns$. In



contrast, both the anti- and neutral subjects perceived a greater difference between the pro-choice target members on their abortion attitudes, than they perceived for anti-abortion targets, $F(1,151) = 6.00$, $p < .05$, and $F(1,151) = 19.65$, $p < .0001$, respectively. The findings for homogeneity perceptions, then, suggest that attitudes operate in a manner somewhat different from other social categories.

This conclusion is supported by the results on an additional measure designed to tap perceptions of homogeneity. Specifically, subjects were asked to estimate, out of 100 possible, the number of "individuals who might be considered unusual or out of the ordinary" for each attitude category. Table 11 presents the mean estimates of the number of "unusual individuals" perceived in the two groups. Assuming that a higher estimate indicates perceptions of within category difference, Pro- subjects again note little difference between the categories in terms of the homogeneity of membership, $F(1,151) = .92$, $p = ns$. However, both Anti- and Neutral subjects estimated a greater number of individuals in the Pro-choice category who are "unusual" for the group, $F(1,151) = 15.38$, $p < .0001$, and $F(1,151) = 5.215$, $p < .05$, in order.

Hypothesis 6 predicted that, independent of the results for Hypothesis 5, subjects would demonstrate greater cognitive complexity for members of their own attitude category than members of the opposing category. Subjects were asked to think about "all the different types of people who make up" each attitude category and to write down as many types as possible. It was expected that given a "better articulated concept of the ingroup than the outgroup (Linville & Jones, 1980), pro-abortion subjects would be able to list a greater number of "types" of people for the pro- category while anti-abortion subjects would list a

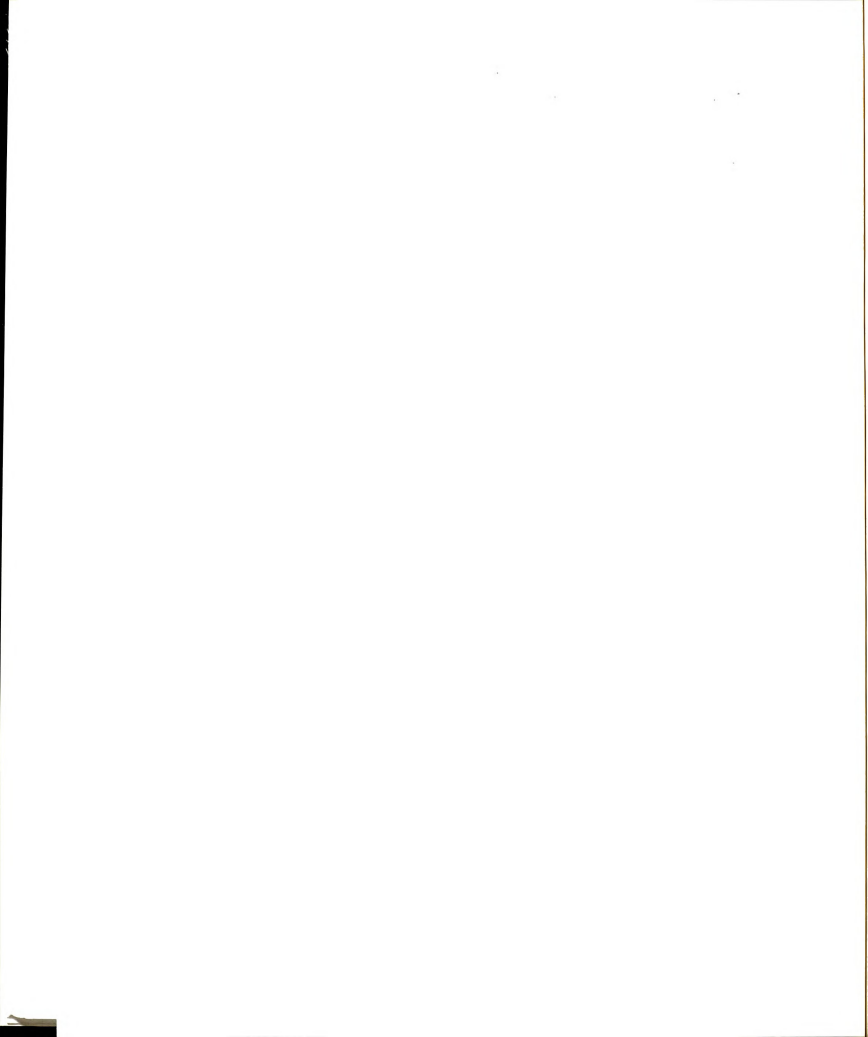


Table 11. Estimates of Numbers of "Unusual Members" in Attitude Categories by Subject and Target Attitude Category

Target Category	Subjects' Attitude Category		
	Pro-Choice	Anti-Abortion	Neutral Abortion
Pro-Choice	19.07	23.67	24.94
Anti-Abortion	20.36	16.89	20.53

note: numbers represent estimates
out of 100 possible

greater number of anti- category "types." Neutral subjects, in contrast, should demonstrate an inability to list person "types" for either attitude category but would list the same number of types for each group.

Given the nature of the measure, it was first necessary to obtain an objective means of assessing the subjects' responses. Three independent judges, blind as to the hypotheses under investigation as well as to the attitude category of the subjects, examined the list of types generated by each subject. They were instructed to eliminate any "types" that were repeated across categories and, for any "type" listed more than once, they were to count only its first occurrence. If, for example, the subject had listed for the pro- target category, "mothers" and "parents," one of these "types" was eliminated. Any disagreement between the judges resulted in an exclusion of that subject's responses from further analysis.

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The means that resulted from this procedure are presented in Table 12. A repeated measures analysis of variance revealed the predicted subject by target attitude category interaction, $F(2,146) = 5.50$, $p < .005$. Planned comparisons were conducted between the target categories for each subject category. Consistent with predictions, pro-choice subjects listed a significantly greater number of sub-types for the pro-choice than the anti-abortion category, $F(1,146) = 11.26$, $p < .001$. In contrast, anti-abortion subjects demonstrated a greater ability to list more "subtypes" within the anti-abortion than pro-choice category, $F(1,146) = 14.03$, $p < .001$.

Table 12. Number of Subtypes listed for each Attitude Category by Subject and Target Attitude Category

Target Category	Subjects' Attitude Category		
	Pro-Choice	Anti-Abortion	Neutral Abortion
Pro-Choice	3.167	3.093	2.265
Anti-Abortion	2.764	3.674	2.176

Especially supportive of the complexity hypothesis is the finding that between target categories, there was no difference in the number of subtypes listed by neutral subjects, $F(1,146) = .26$, $p = ns$. As predicted, neutral subjects also listed fewer subtypes for the pro-group than their attitude category counterparts, $F(1,146) = 22.53$, $p < .0001$. Similarly, neutrals listed fewer types for the anti-group than were listed by pro- or anti- subjects, $F(1,146) = 32.67$, $p < .0001$. Thus, it

would appear that neutrals have a lower complexity for members of either attitude category than do the members themselves.

Additional measures. A final set of items were analyzed in the present study. It was the purpose of these measures to assess the degree of interpersonal attraction that subjects felt for the members of the two groups. The scale was similar to that developed by researchers to measure cohesiveness in a small group (cf. Festinger, 1953; and Lott & Lott, 1965). Subjects responded to the same four items for each target category, with the prompts: "feel close" to category; "feel attracted" to category; "would like to meet" category members; and "would like to work with" category members. Reliability coefficients computed for each target scale were .864 for the pro- group, and .863 for the anti- group.

A repeated measures analysis of variance revealed the predicted subject by target category interaction, $F(1,147) = 91.47$, $p < .0001$. The mean cohesiveness ratings are displayed in Table 13. Consistent with

Table 13. Subjects' Ratings of Cohesiveness with each Attitude Category by Subject and Target Attitude Category

Target Category	Subjects' Attitude Category		
	Pro-Choice	Anti-Abortion	Neutral Abortion
Pro-Choice	13.08	5.27	9.11
Anti-Abortion	4.89	13.39	8.57

note: scores range from 4 (not at all cohesive)
to 21 (extremely cohesive)

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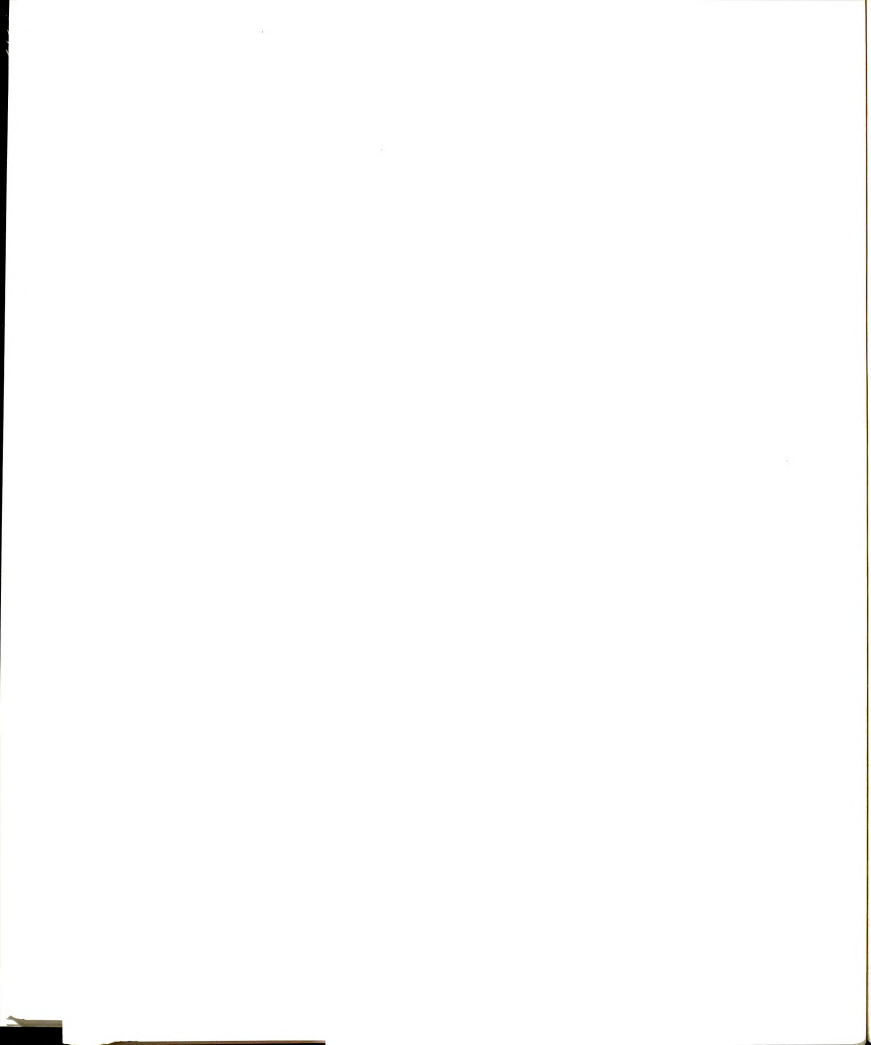
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the findings for attraction in Study 1, planned comparisons demonstrated that the categorized subjects felt greater cohesiveness with members who shared their attitude than with individuals who opposed it, for pro-subjects, $F(1,147) = 285.83$, $p < .0001$; for anti-subjects, $F(1,147) = 173.35$, $p < .0001$. As expected, neutral subjects tended toward equal cohesiveness with both attitude categories, $F(1,147) = .61$, $p = ns$.

Summary and Conclusions

For the most part, attitudes appear to share properties similar to other, more general social categories, although the differences that do exist are very telling. Support for Hypothesis 4 suggests that attitude category members expect that individuals in their category will be much more similar to themselves across a wide range of areas, than out-category members. Confirmation of predictions set forth in Hypothesis 6 indicate that members also possess greater complexity in thinking about their own category than they do for the opposing group. In addition, members of attitude categories consistently exhibit a much greater attraction to those who share their membership than to those who do not.

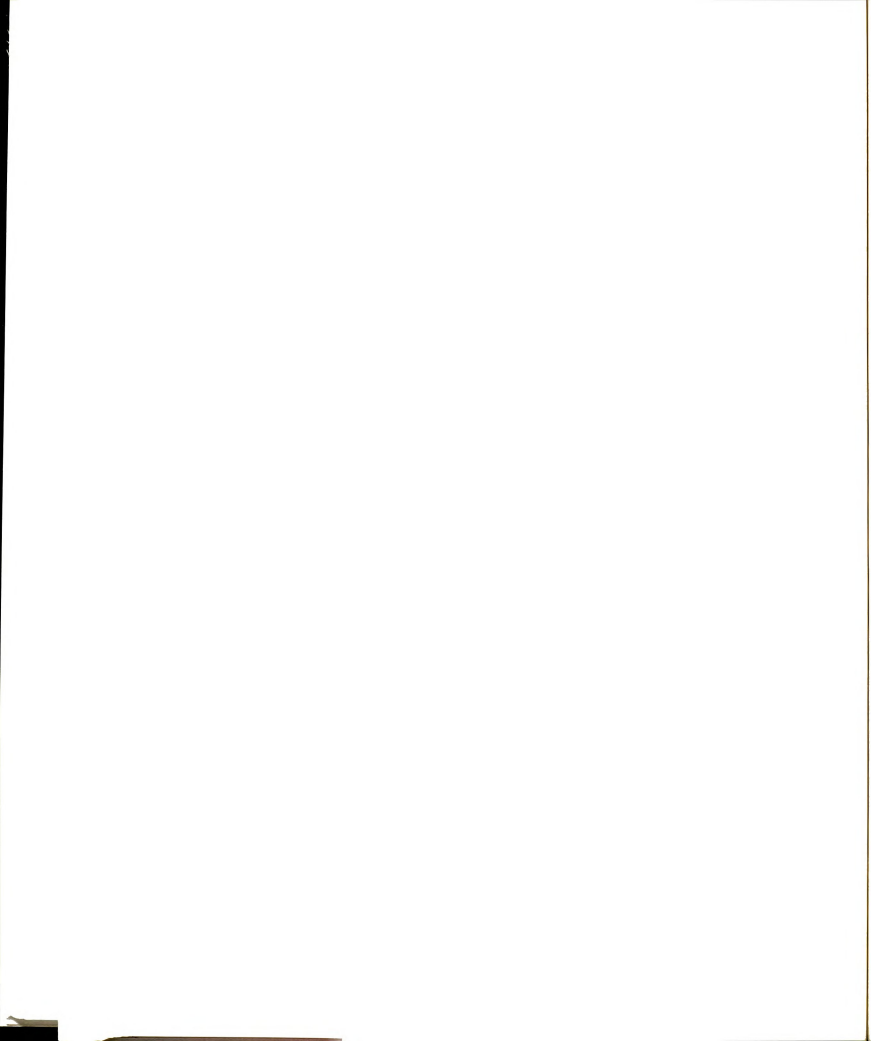
Consistent with the findings of Wilder and Allen (1978), subject members in attitude categories demonstrated a strong belief that other individuals in their category would share their preferences to a much greater degree than out-category members. Granberg, Jefferson, Brent and King (1981) have found similar evidence for assumed similarity of preference between individuals who share membership in a social category. Black subjects, for example, were more likely to attribute their



own opinion on an issue to black targets more than white targets. Moreover, this effect was especially strong in the case where the black subject felt "extremely close" to the black category.

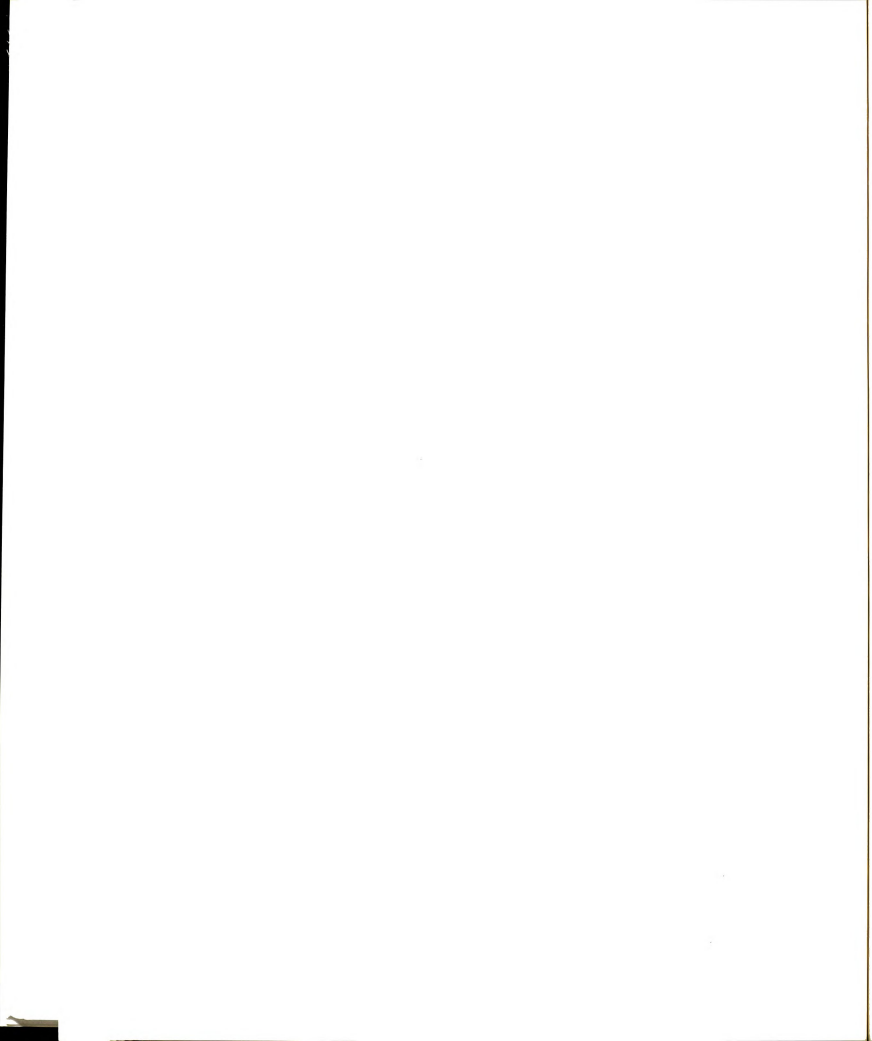
What makes support for the ingroup similarity hypothesis particularly interesting is that subjects' assumptions of similarity did not stop at the boundaries of the category label or even other unrelated social beliefs. Rather, knowledge of attitude category membership led to general inferences about whether the target shared preferences in lifestyle as well. That is, subjects demonstrated a strong tendency to infer that a categorized target who shared their belief on abortion would also share their preferences on a scale whose items included food, music and even paintings! While these results are readily explained through a simple application of Heider's (1958) theory of interpersonal balance, the theory does not make predictions for several other important hypotheses supported here.

A major difference between attitude categories and more other social categories is evident in the lack of support for Hypothesis 5. Contrary to present predictions and the earlier findings of Wilder (1981), individuals did not simply perceive members of their own category as more heterogeneous than outgroup members in their preferences. Instead, it appears that when attitudes are the defining label for category membership, they operate within the constraints of an individual's actual experience with the members of each group. Perhaps, pro-choice targets were perceived as more heterogeneous simply because in reality, they are. Unlike minimal group categories, defined only within the contrived laboratory setting, attitude categories may be found in the "real world" as well as in the experimental situation.



The findings with respect to perceptions of pro-choice targets as heterogeneous makes sense if one first considers what it means to be "pro-choice." In contrast to anti-abortion individuals who are thought to be "against" abortion under all circumstances, "pro-choice" individuals do not "advocate abortion." Rather, they believe that "a woman should have the right to an abortion if she chooses." This group, for example, may be perceived to include some advocates of abortion "any time the feeling strikes," and some who believe that "a woman who has an abortion should do so only after all other alternatives have been exhausted." Thus, a basic understanding of the labels themselves may serve to override the typical perceptions of group heterogeneity/homogeneity.

Of course, a question remains as to why perceptual differences were not found on the peripheral attitude and lifestyle measures. Recall that Wilder (1981) found that members estimated greater variance of extraneous beliefs in the ingroup than in the outgroup employing a minimal groups manipulation. Perhaps, this perceptual difference occurs only when the group label is the sole characteristic known about the group members. In the absence of other information about the members, individuals assume that members of their own group are more varied. If this is the case, the findings in the present study would not be as contrary as first thought. Unlike the contrived nature of minimal groups, attitudes are "real world phenomena." It would seem that members of attitude categories come into contact with members of opposing categories frequently and presumably learn more about each other than the mere attitudes they hold. Rose (1981) notes that intergroup contact can lead to a reduction of the use of stereotypes and result in a more accurate picture of the members of both groups. Therefore, members



within the pro- and the anti- categories may be correctly seen as more differentiated from each other than would be the case for members within minimal groups. Thus, members of both categories would be perceived as equally heterogeneous.

Perhaps the major difference between the findings of Wilder (1981) and the results presented here is that the former study demonstrated that noncategorized subjects perceived equal homogeneity within each group as well as recognizing that neither group shared their preferences more than the other. In contrast, neutral subjects in the present study noted greater heterogeneity among the pro- choice target members and a greater similarity of preference to them. It would appear that neutrals perceived the members of the pro-group to be more spread apart in their preferences leading to a higher probability that several pro- members might agree with them on the items considered.

An integration of the heterogeneity/assumed similarity findings suggests several hypothetical distributions presented in Figure 3. As the Figure shows, subjects in the Pro- and Anti- categories both see themselves as highly similar to the other members in their group. Moreover, they perceive the pro- choice members as more varied in their views on item A, though still very much opposed to the position of anti-group members.

Figure 3 also depicts a hypothetical view of Neutral subjects' perceptions. Recall that the results of Study 1 suggest that neutrals note the ideological differences between the attitude category members, but do so less for pro-choice targets. This is reflected in the Figure by the separation of the target groups for neutral individuals, though to a lesser degree than for pro- and anti- members. As the Figure

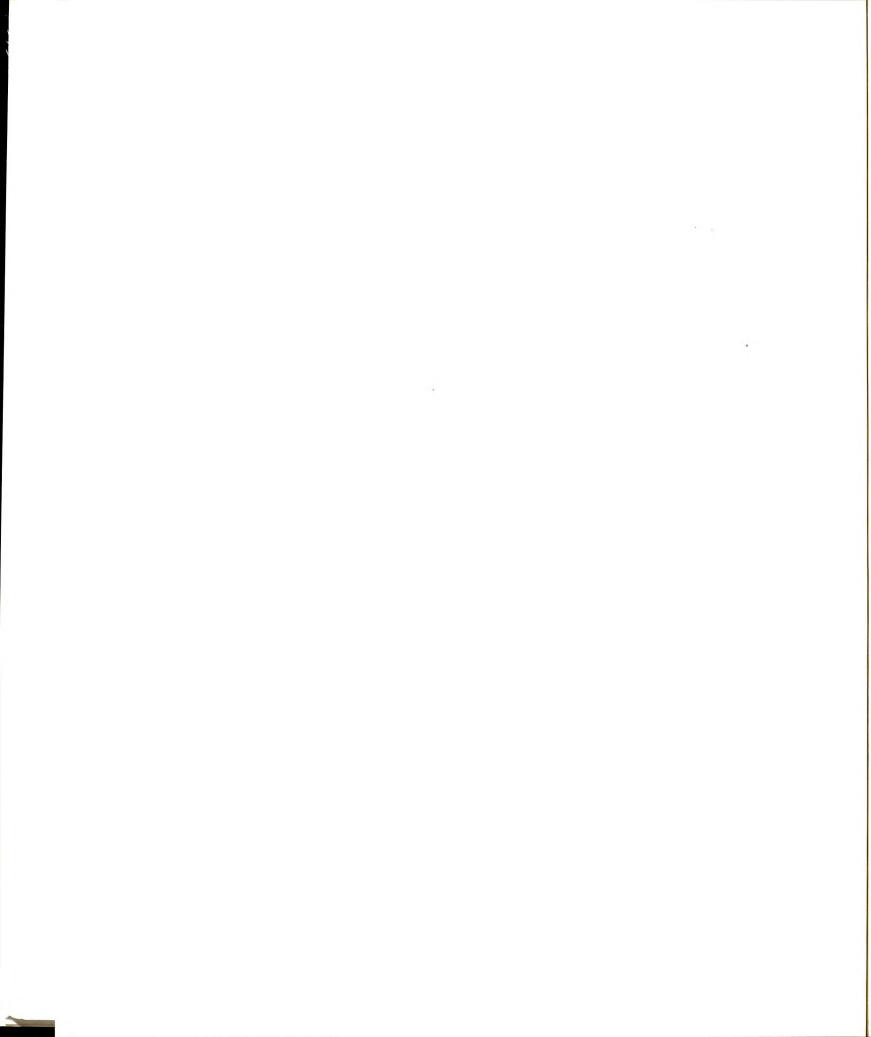


Figure 3. Hypothetical Representations of the Perceptions of
Assumed Similarity and Within Category Heterogeneity for
the Members of Attitude Categories

Pro-Choice Abortion Individuals

AAAAAAAA	P	P	P	P	Y	P	P	P	P

Favors									Does Not
A									Favor A
	Preference for								
	Item A								

Anti-Abortion Individuals

AAAAYAAAA	P	P	P	P	P	P	P	P	P

Favors									Does Not
A									Favor A
	Preference for								
	Item A								

Neutral Individuals

	AAAAAAAA	Y	P	P	P	P	P	P	P

Favors									Does Not
A									Favor A
	Preference for								
	Item A								

note: A = perceived preference of anti-abortion category members
P = perceived preference of pro-choice category members
Y = placement of self on item A

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illustrates, neutral individuals, perceiving the greater heterogeneity of pro- category targets, may expect that the pro- members who are spread closest to the midpoint of the scale will come closest to their own views on item A. In contrast, anti- category members, who are perceived as more tightly knit in their views, appear to be less likely to share their views.

Although neutral individuals perceive several pro- targets as closer to them than the anti- targets, this does not necessarily imply that neutral subjects perceive anti- targets as more extreme in their views than pro- targets. An examination of the middle most point for each target category reveals that they are equidistant from the neutral individual's own point of view. Rather, it is the spread of pro-choice targets around the middle most point that may lead the neutral individual to infer greater similarity of preference with pro- group membership.

Nor does the hypothetical representation depicted in Figure 3 suggest that neutral individuals are merely "closet pro-choice members." Based on the operations employed, neutral subjects were selected in such a way so as to guarantee that they did not identify with the Pro- group. This point is substantiated by the finding that neutral subjects demonstrated no greater attraction or closeness to the pro- category members than they did toward anti- category members. Again, these findings suggest that neutral individuals simply perceive some pro- category members to share their preferences more than anti- category members.

Unlike the findings for perception of within category similarity, the predictions with respect to Hypothesis 6 received strong support. Consistent with Linville and Jones (1980), attitude category members

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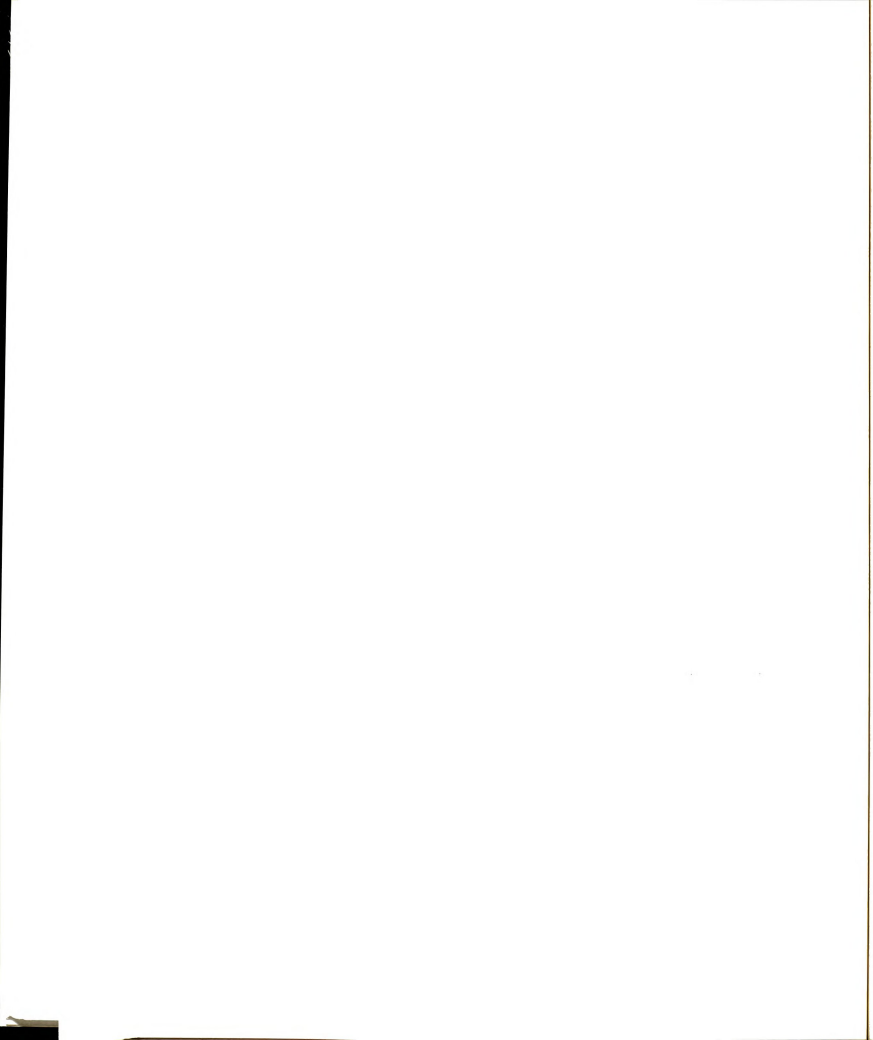
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demonstrated a more complex cognitive representation of their own group than of the opposing group. Furthermore, neutral individuals had more equivalent but lower complexities for the two groups than their attitudinal counterparts. This result is important for several reasons. First, it offers greater support for the attitude-as-social category concept. The effect, while not accounted for by any of the consistency theories (e.g., Heider, 1958), is readily explained by the principle that individuals group themselves and others into two mutually exclusive categories on the basis of the political beliefs they hold. In thinking about the members of the two groups, category members possess the ability to make finer discriminations between individuals in their own group than between those of the outgroup. Given that thoughts about the self are much more complex and efficiently organized than thoughts about strangers, (Kuiper & Rogers, 1979), it would seem to follow that thoughts about the ingroup, of which one is a member, would be more complex than those of the outgroup.

Second, the results for Hypothesis 6 underscore the argument that cognitive complexity and perceptions of ingroup heterogeneity are under the control of separate operations. If the questionnaire items were measures of the same construct, the results presented above would have been identical for both. As has already been shown, however, the findings for the complexity measure were very different from those for the perceptions of within category similarity. Therefore, it would seem that greater cognitive complexity for the ingroup is based, not in experience as in the case of perceptions of heterogeneity, but instead, on the cognitive organization of category-relevant thought.

Finally, it would appear that, once again, neutral individuals do not possess the cognitive structures necessary for thinking about atti-



tude category membership. Consistent with Study 1, neutrals demonstrated a simplified conceptualization of the two groups, as indicated by their relative inability to generate category subtypes. Taken together with the finding that the number of subtypes listed by neutral individuals were equal across target categories, these results suggest that, independent of their personal contact with group members, neutral individuals are truly "aschematic" in their thoughts about either category.

Thus, the results of Study 2 suggest that attitudes share certain well-established properties of other social categories. Similar to the categories of sex, race and those created in the minimal groups situation, attitudes lead to perceptions of shared beliefs within the categories as well as more complex concepts of ingroup membership. Contrary to the findings for minimal groups, however, assumptions of heterogeneity in attitude categories seem to be tempered by real-life experiences. Study 3 further tests the attitude category concept by assessing the effects of group membership on expectations about others.

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Study 3: Attitude Categories and the Attribution of Beliefs

Having established in Studies 1 and 2 that attitudes categories are similar to other social categories, it is now possible to assess the consequences of category membership. Recently, the minimal groups research has been directed toward an investigation of the expectations generated by the group labels. For example, Howard and Rothbart (1980) have shown that a division of individuals into minimal groups will lead to the expectation that the ingroup is predisposed toward more favorable behaviors than the outgroup. Wilder and Allen (1978) concluded that in expressing a preference for information that suggested their similarity to the ingroup and dissimilarity for the outgroup, minimal group members were acting on the expectation that individuals in their own category were like them in ways unrelated to the manipulated label.

The expectancy biases fostered by minimal group membership have also been found in the context of more "real-world" divisions such as race and age. Granberg, Jefferson, Brent and King (1981), in a secondary analysis of 1976 election data, divided respondents on the basis of whether they were black or white. The authors hypothesized that, if individuals have an expectation of balance among their relationships, they should be attracted to members of their own race (a positive P-O bond), which would lead to an expectation that ingroup members would share their attitudes on various political issues (identical P-X and O-X bonds).

Consistent with the results of Study 2 Granberg et al. demonstrated strong support for the assumed similarity hypothesis. Blacks, for

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example, assimilated the "black viewpoint" such that, if the individual respondent was in favor of integration, he or she was much more likely perceive other Blacks to similarly favor the policy. In contrast, blacks saw white subjects as opposed to busing, if they themselves were favorable toward it. Incidentally, subjects in Granberg et al.'s sample attributed their own opinion to the ingroup and the opposing attitude to the outgroup, regardless of whether they felt a strong attraction to the ingroup. The authors' findings seem to suggest that Heider's balance theory alone is not an adequate explanation for the attribution of attitudes.

In a similar test of attitude attributions as a function of social category membership, Kinder (1978) considered the differences between supporters of two opposing political candidates. In his own secondary analysis of the same data set used by Granberg et al., Kinder found that when respondents expected their candidate to win, they expected the supporters of the opposing candidates to disagree with them across a set of political issues. Conversely, they perceived that individuals who supported their own candidate were in exact agreement with them in their beliefs.

Therefore, it would seem reasonable to conclude that membership in a social category facilitates the expectation that other ingroup members share one's own attitude on many issues. Moreover, in order to maximize the "psychological distance" between members of antagonistic categories, ingroup members should act on these expectations and attribute opposing attitudes to outgroup members. In moving beyond the findings of Study 2, it is predicted that, given no social information about a target other than his or her stand on an issue, members of attitude categories should attribute their peripheral attitudes (not used in the

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initial categorization process) to the target only if he or she is perceived to be an ingroup member.

The implications of the attitude attribution hypothesis have been considered by Page and his associates in their research on voting behavior (Page, 1978; Page & Brody, 1972). He argues that prior to casting their ballots, voters note several candidates' preferences on many political issues. Once they have selected the candidate who is closest to their own preference on a single most salient issue, they move to bolster their decision. In the situation where, in reality, that same candidate is opposed to the voter's preferences on secondary issues, the voter will misattribute his or her own attitudes to the candidate on them.

There are, however, two very plausible alternative explanations for attitude misattribution. Although Wilder (1981) argues that attributed attitude similarity is necessarily a result of social categorization, it is possible that the actor may attribute his or her own attitudes to a target irrespective of initial categorization based on a primary attitude. That is, possessing information about a target's attitude category may contribute nothing to attributions made on other issues. Instead, an individual may simply believe that most people (including the target) would agree with him or her on any issue and attribute that attitude to others as a result. Support for this alternative would be very strong evidence for the false consensus bias. Ross and Anderson (1982) argue that people have a tendency to "see their own behavioral choices and judgments as relatively common and appropriate to existing circumstances while viewing alternative responses as uncommon, deviant and inappropriate (p. 140)." In a series of studies by Ross, Greene and

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House (1977), subjects were given a choice to perform a slightly embarrassing task or not. Among those who selected to perform the behavior, a significant number believed that a majority (well over 60%) would have made the same choice.

Thus, it may be the case that when asked to make a judgment as to the attitudes of a target, individuals simply reflect on their own position and attribute that position to the target. Most importantly, if this explanation is correct, individuals should make this attribution regardless of whether they know that the target agrees with them on any other issue. That is, the initial attitude categorization would make no difference to the individual. Even if individuals disagree with a target about gun control, for example, they would still attribute their own attitudes on defense spending to the target as a consequence of believing that most everyone shares their belief.

A review of relevant research would seem to add to the plausibility of the consensus alternative. Jones and Harris (1967) viewed attitude attributions as a function of the target person's responsibility for having written a pro-attitudinal essay. While they did find support for the contention that individuals attribute attitudes with greater confidence if they perceive the target as having had a choice in writing the essay, Jones and Harris noted some troublesome extraneous variance. When subjects attempted to predict attitudes on the basis of conflicting behavioral cues of the target, subjects demonstrated a tendency to fall back on their own attitudes and attribute them instead.

More recently, Fields and Schuman (1976) directly addressed the question of an attitudinal False Consensus Bias. In observing public perception of public opinion on the issue of racial integration in housing, the authors found a remarkable bias toward "looking glass

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perceptions." Respondents demonstrated a remarkable tendency to "look out into the world and somehow see their own opinions reflected back. More than sixty percent of the authors' sample believed that others shared their exact attitude.

It is important to note that the proposed attitude-as-social category hypothesis and the false consensus bias are not mutually exclusive in their predictions. A major premise of the latter bias is that individuals are given no information about their peers and are asked to estimate what these people would do in a similar situation. In the present case, it is suggested that individuals, given an initial attitude of a target, will use that information to predict the target's attitude on subsequent issues. The false consensus bias would not argue against such an effect. However, if the initial target attitude is ignored and the actor still makes an attribution of agreement between him or herself and the target on a second issue, this would be extremely strong evidence for the false consensus bias.

To return to the defense spending/gun control example presented earlier, both the false consensus bias and the proposed attitude category hypothesis would predict attributed similarity from actor to target on the issue of defense spending if both the actor and the target were categorized as pro-gun control. As discussed above, false consensus could predict agreement on defense spending regardless of information presented about target attitude on gun control. The attitude category hypothesis would predict stronger attributions of agreement between target and actor on defense spending if the actor first noted the similarity between him or herself and the target on gun control.

Opposing predictions would be made for the two hypotheses, however, if the target were perceived as disagreeing with the actor on the

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primary issue of gun control. If for example, the actor was pro-gun control and the target was presented as anti-gun control, the false consensus bias could still predict the actor to have expectations of attitude similarity on the secondary issue of defense spending. The actor might choose to ignore the disagreement on the gun control issue and still use his or her position on defense spending as a guide in attributing a defense spending attitude to the target. The attitude category hypothesis, on the other hand, would predict that a noted disagreement between the target and the actor on the initial issue would lead to an assumed dissimilarity across all other issues. Thus, the actor would attribute an attitude on defense spending to the target in opposition to his or her own.

A major feature of the proposed social categorization approach to attitudes is the notion that in attributing attitudes to others, individuals utilize their own attitude as a frame of reference. While the false consensus hypothesis accepts this premise as correct, a second alternative explanation, the attitude consistency hypothesis, does not. First considered by Converse and his colleagues (Campbell, Converse, Miller & Stokes, 1960; Converse, 1964), the consistency hypothesis assumes that if voters in the electorate vote according to their issue preferences, they must be doing so on in an ideological fashion. Therefore, in an issue oriented public, voters could be divided into liberals and conservatives. An attitude on a single issue should constrain attitudes on other issues in the same direction. For example, if an individual is liberal on the issue of gun control (i.e., pro-gun control), he or she should be liberal on another issue such as aid to minorities (i.e., pro-aid to minorities).

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Although little evidence has been demonstrated for the consistency hypothesis, it is plausible that individuals have the expectation that others do, in fact, order their beliefs in an ideological manner. In particular, the question is whether the "intuitive scientist" has the expectation that individuals will maintain a consistent liberal or conservative belief system across issues. While there is virtually no research that would serve as evidence for this particular bias, several recent studies suggest its plausibility as an alternative to the attitude category hypothesis.

The thrust of the attitude consistency hypothesis is that attitudes on issues "go together." If ideology is thought to be a structure of attitudes in a manner parallel to the structure of traits in personality, the work of Cantor and Mischel (1979) would seem relevant to this argument. Subjects first received a description of a target as either introverted or extroverted. The subjects then had to determine whether any of the additional traits they were given "went with" the description of the target. For example, given that the target description was "introverted," subjects might have concluded that the trait "intelligent" also fit the description. Cantor and Mischel demonstrated that other traits consistent with the target description received a much more rapid response than traits that were not consistent. Presumably, subjects conjured an impression of the target that carried with it traits that the subject anticipated, but had never seen. Subsequent traits that were consistent with these expectations were processed much more quickly.

In a similar vein, Anderson and Hubert (1963) found that presentation of initial target traits structured the encoding of subsequent traits such that "inconsistent" traits were given less psychological

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weight in developing an overall impression of another. Taken together, these two studies suggest that individuals possess personality "prototypes" where certain traits are perceived as "going together." When novel target traits are first presented, the prototype consistent with these traits is activated. If traits presented subsequent to this activation are inconsistent with the prototypic structure, they may be ignored or modified to be made more consistent.

In the same way, it could be argued that individuals possess ideological prototypes. If an individual receives information that suggests that the target is liberal, later information inconsistent with the ideology (i.e., a traditionally "conservative" attitude) might be ignored as in the case of personality prototypes. On the other hand, congruent information, (i.e., the target has a liberal attitude on issue X) would be readily assimilated.

A case for the attitude consistency hypothesis may also be made to the extent that an individual perceives ideological consistency in politicians and other public officials. It has been well documented that political elites are far more ideologically constrained in their political attitudes than the mass electorate they represent (Campbell et al. 1960; Miller & Stokes, 1963). Given that most individuals receive repeated exposure to politicians, it is not unreasonable to imagine that they may develop "illusory correlations" as to which attitudes are supposed to "go together." As Hamilton (1981) explains, illusory correlations are "overestimations of the frequency of co-occurrence of the distinctive stimulus events." Having heard a politician speak about the advantages of gun control and in the same breath, announce that he

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or she is against increased defense spending, the individual may come to expect that the two attitudes will always be connected.

Therefore, the attitude consistency hypothesis would predict that, independent of their own attitudes, individuals have the expectation that targets are ideologically consistent in their thinking. If a target person is presented as anti-abortion, the "ideological prototype" of "conservative" may be activated and generate the expectation that the target will be opposed to, or "conservative" on busing as well. In contrast, a "pro-choice" target should also be expected to have more "liberal" views on all issues, and be in favor of busing too.

In discussing the example raised earlier on the issues of gun control and defense spending, both the attitude-as-social category and the attitude consistency hypotheses would make identical predictions. Given that the target and the actor are both pro-gun control and that the actor is also anti-defense spending, the consistency hypothesis would predict that the target's liberal view on gun control would lead the actor to expect him to be similarly liberal on defense spending (i.e., opposed to it), irrespective of the actor's own opinions. The attitude category hypothesis suggests that actors note the agreement between themselves and the target on gun control leading them to expect similarity to the target in opposition to defense spending as well.

The two hypotheses would make opposing predictions, however, if the target was presented as a member of an attitude category opposed to that of the actor. In terms of the above example, the target may be presented as being favorable toward gun control while the actor him or herself was an anti-gun control member and against increased defense spending (i.e., not ideologically consistent). The consistency hypothesis would still predict that the actor would expect the target to be opposed to

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increased defense spending, since the actor's own attitude is not relevant to the activation of the prototype of "liberal."

In contrast, the attitude category hypothesis would predict that actors note the dissimilarity between themselves and a target on the issue of gun control, and assume dissimilarity across all other issues including increased defense spending. In terms of the example, if actors were opposed to both gun control and defense spending increases, and a target was presented as favorable toward gun control, actors noting the discrepancy, should expect the target to favor defense spending increases. Thus, the attitude category hypothesis could predict an actor's expectation of attitude inconsistency.

In order to formally state the predictions for the hypotheses under investigation it will be useful to briefly summarize the methodology used in Study 3. Subjects who were previously categorized on the basis of their attitude on an issue, were presented with the attitude category of a target, either identical to or opposed to their own. They were then given sets of statements concerning attitudes across several issues. Each issue was represented by an equal number of statements favoring either position. Subjects were asked to sort the statements according to the target's agreement or disagreement.

Hypothesis 7: Attitudes-as-Social Categories. Members of attitude categories will expect that others who share their attitude membership will also share their attitudes on issues not related to categorization. As a result, subjects who are members of the target's category will place a greater number of issue statements in the target's "agree" group than in the target's disagree group, only if the subjects also agree with them. In contrast, subjects who are members of the category opposed to that of the target should place a greater number of issue statements in the target's "agree" group than in the target's disagree group, only if the subjects disagree with them.

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Hypothesis 7 Alt.: False Consensus Bias. Subjects will place issue statements in the target's agree group most often if the subjects agree with them. There will be no difference in statement placement across subjects' own attitude categories.

Hypothesis 7 Alt.: Attitude Consistency. Subjects will place issue statements in the target's agree and disagree groups in accordance with an ideological perspective. A conservative target will be thought to agree with all conservative issue statements and disagree with all liberal issue statements, regardless of the subjects' own attitude categories.

Method

Subjects. As in Study 1, the present study was conducted in two parts: a pre-test, and the manipulation. The initial pool from which subjects were subsequently selected consisted of 515 male and female undergraduates. For their participation, they received extra credit toward their final grade in their introductory psychology class. On the basis of criteria discussed below, 59 male and female subjects were selected to participate in a second session.

Materials. Questionnaire materials to be used to categorize subjects into one of four attitudinal positions (pro-pro, anti-anti, pro-anti and anti-pro) were identical to the pretest used in Study 1.

The issue relevant statements to be subsequently sorted by subjects consisted of 80 items, listed in Appendix D. Of these, 20 items were concerned directly with the issue used for categorization and 20 items were concerned with the secondary issue used to test the hypotheses enumerated above. The remaining 40 items were unrelated to the first 40, and were used as "fillers," having no relevance to the items of interest. Within each set of 20 items, 10 items advocated a pro-position and 10 advocated an anti-position on an issue. Each statement

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was printed on a 5 X 8 index card, one statement to a card, and arranged in random order in full decks of 80 cards.

As a result of the pre-test, the issues employed in the present study were capital punishment and marijuana decriminalization. Thus, examples of the statements to be sorted were:

Pro-capital punishment: "Institution of the death penalty would decrease violent crime;" and "The death penalty would reduce overcrowding in our prisons."

Anti-capital punishment: "Where the death penalty is concerned, two wrongs don't make a right;" and "The death penalty is cruel and unusual punishment."

Pro-marijuana decriminalization: "Penalties for the use and possession of marijuana should be reduced;" and "Marijuana is less harmful than alcohol."

Anti-marijuana decriminalization: "Marijuana should remain illegal;" and "Decriminalization of marijuana will result in an increase in its use."

Design. A 2 (pro- or anti- capital punishment attitude) X 2 (pro- or anti- marijuana decriminalization) X 2 (pro- and anti- marijuana items) mixed factorial design was used. All subjects sorted both sets of marijuana decriminalization statements.

Procedure. Pretest session. The procedure used for the pre-test questionnaire was identical to that used in Study 1. Designation of the statement items to be used for the manipulation that followed was accomplished by selecting the two issues on the questionnaire that met two criteria: (1) demonstrated high reliability; and (2) yielded response distributions relative to each other to allow selection of subjects whose scores were extreme on both issues. Subjects in the pro-pro condition, for example, demonstrated strong favorable attitudes toward both capital punishment and marijuana decriminalization. Similarly, subjects in the anti-pro condition demonstrated strong unfavorable atti-

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Session two. In a manner identical to Study 1, two to three weeks after completing the questionnaire, subjects were contacted by telephone and told that their names were selected at random from a roster of introductory psychology students. Care was taken during the conversation to guard against subject suspicion in associating the pre-test with the phone call. Subjects were scheduled in sessions consisting of six to eight participants.

Upon entering the experimental room, subjects were introduced to the experiment by written and verbal instructions that outlined its sequence, obtained informed consent and emphasized anonymity safeguards. All subjects then received the following instructions:

"Today you will be participating in a series of tasks involved in predicting the attitudes of other people. There are two tasks we would like you to complete today in order to find out how people form impressions about others given very little information. In order to guarantee your total anonymity, we would like you to write down a code number on the card in front of you. Please retain this code number throughout today's experiment and write it on anything you hand in."

Subjects were then asked to fill out a departmental consent form. As in Study 1, they placed their code numbers on the form to permit their responses to be subsequently matched back to their pre-test questionnaire responses. As before, none of the subjects indicated any suspicion about this procedure. Upon completing the form, subjects received the first deck of 20 issue statements concerning capital punishment. Included in the deck were two cards labeled "agree" and "disagree." This portion of the session was intended to provide a check on whether

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the subjects understood the nature of the sorting task. Subjects were asked to separate the two cards and were told:

"People differ in the attitudes they hold. We are interested in your perceptions of people whose attitudes are either pro-capital punishment or anti-capital punishment. Pro-capital punishment people believe that the death penalty should be used in the case that someone is convicted of premeditated murder, that is, if it is intentionally committed. Anti-capital punishment people, on the other hand, believe that the death penalty should never be used, even if the person who committed the murder did so intentionally.

For your first task, we would like you to sort the cards before you into two groups. On each card is a statement of belief about the issue of capital punishment. We would like you to read each statement and decide whether someone who is in favor of capital punishment would agree or disagree with it. If you think that the person would agree, place the card in the 'agree' pile. If you think that the person would disagree, place the card in the 'disagree' pile. Work as quickly as you can. If you think that you have made a mistake, please do not change it. We want your first impressions. Are there any questions? If not, begin."

After completing the task, the experimenter collected the cards and distributed the second set. This set of 60 cards included the 20 marijuana decriminalization items and 40 filler items concerning various other issues. Subjects were then given instructions:

"This second task you are about to do is similar to the first. On each card is a statement of belief about issues other than capital punishment. We would like you to read each statement and decide whether someone who is in favor of capital punishment would agree or disagree with it. If you think that the person would agree, place the card in the 'agree' pile. If you think that the person would disagree, place the card in the 'disagree' pile. As before, if you think that you have made a mistake, please do not change it. We want your first impressions. Please remember the person is in favor of capital punishment. Any questions? Begin.

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Upon completion of the second card sort, the experimenter collected the cards and distributed the final dependent measure, which also may be found in Appendix D. Included in this questionnaire were the two important self-identification items. It will be recalled that a major requirement for attitude category membership is that the individual must feel a sense of identification with the attitude group in which he or she was selected. Thus, the items asked the subject to proclaim him or herself as pro- anti- or neutral on capital punishment and on marijuana decriminalization. Also included was a check to assess whether the subject correctly remembered the target's attitude on capital punishment.

Ancillary measures were included that were concerned with the subjects' evaluation of the pro- and anti- capital punishment category membership. As in Study 1, these were eight semantic differentials on seven-point scales, with an additional measure of the ideological perception of the two attitude categories. Finally, a preference measure was included that asked subjects to rank each of four pieces of information in terms of how much they would like to see them. Similar to that used by Wilder and Allen (1978), the information involved two targets, one who was pro-, and one who was anti- on capital punishment. Subjects were asked to rank in order their preference for information that suggested the targets' similarity or dissimilarity to their own attitudes on marijuana decriminalization.

Subjects were then told that the experiment was over and were debriefed. Again, this was done only after they were asked whether they could discern its true purpose. The most common answer was "predicting the attitudes of others." Not one subject could even approximate the

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truth, however. Subjects were then debriefed, thanked for their participation, and given their extra credit.

Results

In accordance with the criteria established above, two scales were selected from the pre-test questionnaire to provide a means to categorize subjects according to their attitudes. Both the capital punishment and the marijuana decriminalization scales demonstrated high reliabilities and approximated normal distributions with low skewness. The respective coefficients alpha for each scale were .900 and .874, indicating their high reliability and unidimensionality.

Cutoff points were then assigned to each scale so as to define a subject as pro- or anti- on each issue. Subjects were first divided into categories on the basis of whether they were in favor or against capital punishment (CP). Anti-CP subjects were defined as those individuals who scored within the values 8 (extremely anti-) and 19 inclusive. Pro-CP subjects received scores from 28 to 40 (extremely pro). Within these scores, cutoffs were then assigned to anti- and pro- marijuana decriminalization (MD), 8 to 20 and 28 to 40, respectively. This process yielded a second pool of 139 subjects selected from the first. Of these, a total of 59 subjects gave responses on the identification dependent measure that mirrored their questionnaire scores for both the capital punishment and the marijuana decriminalization scales. Subjects for the four final groups numbered: 18 anti-anti, 16 pro-pro, 16 pro-anti, and 9 anti-pro.

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Manipulation checks. It was first necessary to determine whether subjects could recall the CP attitude of the target. If a subject incorrectly recalled the target category as anti-CP, his or her subsequent statement card placement would be suspect. Analysis revealed that all 59 subjects correctly identified the target's category.

More important was the manipulation check of statement placement of the CP cards, given the target's pro-capital punishment stand. If subjects did not place more pro-CP than anti-CP statements in the target's agree pile, their subsequent placement of MD statements would again be suspect. Analysis of the deck placement of CP cards revealed that subjects fully comprehended the task instructions. The number of pro- statements with which the target was thought to agree, far outweighed the number of anti- statements, ($M = 9.19$ vs. $M = .70$, respectively), $F(1,55) = 1452.19$, $p < .0001$.

Tests of hypotheses. A three-way repeated measures analysis of variance was conducted to assess the effects of the subjects' CP and MD attitude categories on placement of pro- and anti- marijuana decriminalization statements in the target's agree statement pile. The resulting means are displayed in Table 14. Analyses revealed a significant subject CP category by subject MD category by statement type (pro- or anti-) interaction, $F(1,55) = 13.19$, $p < .001$.

Planned comparisons were then performed on each subject group, separately. It was predicted that pro-CP subjects, presumably perceiving that they agree with the target on capital punishment, would also attribute their own attitude on marijuana decriminalization to him. Contrary to predictions of all three hypotheses, pro-pro subjects did not place significantly greater numbers of pro-MD than anti-MD statements in the target's agree pile, $F(1,55) = .42$, $p = ns$. Consistent

Subjects' Marijuana
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Table 14. Statement Placement by Subjects' Attitudes on Capital Punishment and Marijuana Decriminalization by Statement Type

Subjects' Marijuana Decriminalization Category	Subjects' Capital Punishment Category			
	Pro-CP		Anti-CP	
	Statement Type			
	Pro-MD	Anti-MD	Pro-MD	Anti-MD
Pro-MD	5.22	4.44	1.00	8.94
Anti-MD	2.00	7.19	3.17	6.78

note: values represent numbers of
cards placed in target's agree pile
(maximum = 10)

with predictions of all three hypotheses, however, pro-anti subjects placed a greater number of anti-CP than pro-CP cards in the target's agree pile, $F(1,55) = 31.32$, $p < .0001$. Consistent with the attitude category and attitude consistency hypotheses, but not with the consensus hypothesis, anti-pro subjects also placed a greater number of anti-MD cards in the targets' agree pile, $F(1,55) = 73.07$, $p < .0001$. Contrary to the predictions of the attitude category hypothesis, but consistent with the consensus and attitude consistency hypotheses, anti-anti subjects also placed a greater number of anti-MD statements in the target's agree pile, $F(1,55) = 17.10$, $p < .001$.

In brief, it appears that of the three hypotheses, the attitude consistency explanation receives the greatest support. In all but one case, subjects placed more anti-MD than pro-MD statements in the pro-CP

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target's agree pile. Only the pro-pro subjects did not sort the statements in accordance with an ideological prototype.

A closer inspection of the pattern of means presented in Table 14, suggests that the consistency explanation seems particularly applicable to subjects who are themselves ideological (i.e., conservative as in pro-CP and anti-MD; and liberal as in anti-CP and pro-MD). Additional analyses were conducted to determine whether the differences in card placement were greater for the ideological subjects than for the nonideological subjects. Results suggest that ideological subjects are indeed more discriminating in their card placement such that they placed fewer pro-MD cards in the target's agree pile than did the nonideologue subjects, $F(1,56) = 10.83$, $p < .005$. Moreover, ideologues also placed more anti-MD cards in the target's agree pile than did the nonideologue subjects, $F(1,56) = 8.33$, $p < .01$.

It would seem that a more parsimonious explanation for these findings is that ideological prototypes were used more often by ideological than by nonideological subjects to sort the target statements. Indeed, pro-pro subjects placed an equal number of pro-MD and anti-MD statements in the target's agree pile, indicating no such prototype. This would serve as evidence for the possibility that ideological subjects, having been ideological in their own thinking, have the expectation that other individuals are also ideological in theirs. Non-ideological subjects, on the other hand, in arraying their political views in a ideologically inconsistent manner, seem not to share the ideological expectations of others to the same extent as their ideologically consistent counterparts.

A test of the attitude consistency explanation may be made through an analysis of the "ideological perceptions" item. Recall that subjects

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Tables 14 and 15

were asked to rate each of the CP attitude target categories in terms of whether they were "liberal" or "conservative." Obviously, in order to make use of an ideological prototype to infer a target's views on marijuana decriminalization from the target's views on capital punishment, subjects must perceive CP attitudes in ideological terms. Given the attitude consistency hypothesis and the stronger effects for ideological subjects shown above, it is expected that subjects who array their views in ideological terms also perceive that others do the same. Thus, if the consistency explanation is correct, an elimination of the effects of ideological perception should also attenuate the subject by ideology interaction, suggesting that perception is the key. If, however, co-varying out ideological perception does not remove the interaction effects found above, these results would suggest that statement placement by the subjects was due to something above and beyond an application of an ideological prototype.

Therefore, an analysis of covariance was performed to assess the effect of perceptual differences in ideology of pro-CP vs. anti-CP targets upon the subject CP by subject MD attitude interaction for statement placement³. The first step in this analysis is a demonstration that perceptual differences of targets' ideology have an impact on the dependent measure, card placement. Analyses revealed that this was indeed the case, $F(1,55) = 13.50$, $p < .001$. More importantly, contrary to the predictions made by the attitude consistency hypothesis alone, the interaction between subjects' CP and MD attitudes was still significant, $F(1,55) = 9.73$, $p < .001$. The means adjusted for the covariate are presented in Table 15. A comparison of the means between Tables 14 and 15 suggests that perceptions of ideological differences

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Table 15. Statement Placement by Subjects' Attitudes on Capital Punishment and Marijuana Decriminalization by Statement Type
Adjusting for Subjects' Perceptions of Target Ideology

Subjects' Marijuana Decriminalization Category	Subjects' Capital Punishment Category			
	Pro-CP		Anti-CP	
	Statement Type			
	Pro-MD	Anti-MD	Pro-MD	Anti-MD
Pro-MD	4.96	4.44	2.07	8.06
Anti-MD	1.89	7.34	3.04	6.95

had little, if any impact on the relationship between subjects' CP and MD attitudes and statement placement for the pro-CP target. Once again, the ideological subjects were more likely than nonideological subjects to place more anti-MD; and fewer pro-MD statements in the pro-CP target's agree pile, $F(1,55) = 5.17$, and $F(1,55) = 6.89$, both p 's $< .05$. Thus, it seems likely that the attitude consistency hypothesis alone cannot account completely for the results presented here.

Perhaps, the attitude consistency and the attitude category hypotheses in tandem would best explain the results obtained here. For the ideological subjects, at least, both explanations would predict identical effects. When the subjects' own attitudes were ideologically arranged, they were most likely to sort the statements in an ideological fashion. However, given that ideological perceptions did not entirely account for statement sortings, it appears that ideological subjects may

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have also made inferences to the pro-CP target on the basis of their own capital punishment attitude categories. Subjects who were pro-capital punishment appeared to note their similarity to the target and thus, attributed their own marijuana decriminalization attitudes to them. In contrast, anti-capital punishment subjects seemed to have noted their dissimilarity to the target and attributed marijuana decriminalization attitudes in opposition to their own.

Ancillary measures. Subjects also responded to evaluative items identical to those used in Study 1. Reliability coefficients were again calculated for each target (pro-CP or anti-CP) scale. Two items, "stupid/intelligent" and "independent/conforming" were excluded from the final scales due to their low inter-scale correlations. The resulting coefficients alpha for the pro-CP and anti-CP targets were .800 and .744, respectively. A repeated measures analysis of variance was conducted on the final five item scale to assess the effects of the subjects' attitude on capital punishment on evaluation of the two target categories.

Analyses demonstrated a subject CP attitude by target CP attitude interaction. As Table 16 shows, however, the evaluative ingroup favorability bias found here was nowhere as strong as in Studies 1 and 2. Although the interaction was significant, $F(1,55) = 18.02$, $p < .001$, planned comparisons between pro- and anti- targets indicated that both the pro-CP and the anti-CP subjects liked the pro-CP target significantly less than the anti-CP target, $F(1,55) = 358.49$, and $F(1,55) = 308.89$, respectively, both p 's $< .0001$. An analysis of simple effects revealed that the overall interaction was caused by pro-targets being evaluated more favorably by pro-CP subjects, $F(1,55) = 19.41$, and anti-targets

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Table 16. Evaluation of Pro- and Anti- Targets by
Subjects Capital Punishment Attitude Category

Subject's Attitude on Capital Punishment

Target's Attitude Category	Pro-CP		Anti-CP	
	General	Stupidity	General	Stupidity
Pro-CP	22.60	2.18	27.79	2.87
Anti-CP	15.49	2.94	12.39	2.11

note: higher values indicate more
unfavorable evaluation

being evaluated more favorably by anti-CP subjects, $F(1,55) = 8.14$, both p 's $< .01$.

Table 16 also displays the means for the "intelligent/stupid" item. Results for this item yielded a significant subject by target attitude category interaction, $F(1,55) = 8.76$, $p < .005$. Planned comparisons indicate that, consistent with previous evaluative results, pro-CP subjects found the pro-CP target to be more intelligent than the anti-CP target, $F(1,55) = 7.17$, while anti-CP subjects thought the anti-CP target to be more intelligent, $F(1,55) = 11.88$, both p 's $< .01$. The results for the "independent/conforming" scale indicated no differences, all F 's < 1 .

Subjects were also asked to rank four items in terms of how much they would prefer to see each. These may be found in Appendix D. Subjects read descriptions of two targets, one in favor of capital

punishment, the order their preference target was pro-target was anti-target was anti-dicted that similarity to the similarity to the ity, given the t

Analysis was Friedman Two-Way involves a comparison. A Chi-square test obtained mean ranks for all attitude conditions. statement sorting subjects who themselves inconsistent subdifferences between = ns.

In contrast ranking differences known as "consensus" that suggested $p < .005$. Anti-highest preference PRO-MD (item 3)

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punishment, the other opposed to it. They were then asked to rank in order their preference for information that suggested: (1) the anti-CP target was pro-MD; (2) the anti-CP target was anti-MD; (3) the pro-CP target was anti-MD; and (4) the pro-CP target was pro-MD. It was predicted that subjects would rank the items highest that would suggest MD similarity to them, given the target's CP similarity; and MD dissimilarity, given the targets's CP dissimilarity.

Analysis was conducted on each of the four subject groups using the Friedman Two-Way Analysis of Variance. This non-parametric technique involves a comparison of the mean ranks for each items across subjects. A Chi-square measure is calculated to assess the difference in the obtained mean ranks against the value of "0," or no difference between ranks for all items. Table 17 shows the mean ranks for each CP by MD attitude condition. Consistent with the results presented above for the statement sorting task, preference differences were greatest for subjects who themselves were ideological in attitudes. For ideologically inconsistent subjects (i.e., pro-pro and anti-anti) there were no differences between mean ranks, $\chi^2(3) = 5.70$ and $\chi^2(3) = 2.53$, both p 's = ns.

In contrast, ideological subjects demonstrated several interesting ranking differences in preference. For pro-anti subjects, otherwise known as "conservative," their greatest preference was for information that suggested that a pro-CP target is anti-MD (item 2), $\chi^2(3) = 13.32$, $p < .005$. Anti-pro subjects, also considered liberal, selected as their highest preference, information suggesting that an anti-CP target is pro-MD (item 3), $\chi^2(3) = 14.53$, $p < .005$.

What is particularly interesting is the fact that within ideological subjects, each group selected as its highest preference, information

Table 17

Subject
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Table 17. Mean Ranks of Preference for Item Information

Target is Presented as:				
Capital Punishment				
Subject Attitude on CP and MD	Pro-CP		Anti-CP	
	Marijuana Decriminalization Information			
	Pro-MD (1)	Anti-MD (2)	Pro-MD (3)	Anti-MD (4)
Pro-Pro	2.00	3.17	2.00	2.83
Pro-Anti	3.20	1.53	2.73	2.53
Anti-Pro	2.22	3.06	1.63	3.09
Anti-Anti	2.89	2.44	2.44	2.22

note: lower number = higher rank
(subject's highest preference)

that suggested that the CP similar target was also similar to the subjects on MD. If these subjects had simply been applying an ideological prototype, items 2 and 3 would have been very close in preference ranking which, as Table 17 demonstrates, was not the case. Once again, the application of ideological prototypes to expectations about others appears to be constrained by the degree to which these expectations are self-relevant.

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Summary and Conclusions

In brief, none of the hypotheses tested in Study 3 received complete support. Rather, the results suggest that it is an integration of both the attitude consistency and the attitude category hypotheses that facilitate expectations about the attitudes of categorized others. Of most importance is the fact that for subjects who were ideological in issue preference, the application of a seemingly ideological prototype for sorting target statements was most likely. When the effects of ideological perceptions of the target were held constant however, these subjects continued to sort the marijuana decriminalization statements in accordance with their own agreement or disagreement with the pro-capital punishment target.

It is puzzling that statement sorting according to consistency or category expectations occurred to the greatest degree for ideological subjects. Subjects who were non-ideological neither demonstrated a great use of the ideology prototype, nor the application of attitude categories, as compared to their ideological counterparts. To be sure, anti-anti subjects did show evidence of an anti-marijuana decriminalization attitude expectation for the pro-CP target. However, given that the statement sort for these subjects was not particularly strong, it is not clear for them whether an ideological prototype or an assumed consensus was in operation. Moreover, pro-pro subjects demonstrated no difference between their placement of pro- and anti- MD statements in the target's "agree" pile.

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Consistent with the differences found between ideological and non-ideological subjects on the statement sorting task, ideological subjects most often demonstrated a difference in preference for the information about the pro-CP and anti-CP targets' attitudes on marijuana decriminalization. In each case, the ideologues most preferred the information suggesting that the target in their CP attitude category was most like them on the MD issue. Yet, these subjects did not show an equally strong preference for information indicating that the target whose CP attitude was in opposition to their own was also dissimilar on MD attitudes. It seems that the expectations generated by attitude category membership are stronger with respect to individuals in one's own category than they are for members of the out-category.

Perhaps the simplest explanation for the differences between the ideological and nonideological subjects is based on the notion that attitude categorization operates within the constraints of ideological consistency. That is, individuals who order their political beliefs according to the labels "liberal" and "conservative" may use these labels as a means to categorize others. The fact that in the present study, their perceptions of target ideology did not account entirely for the statement sorting, suggests that categorization of others need not be a conscious process for these individuals. As Nisbett and Wilson (1977) have argued, we are not always aware of why we behave as we do.

In contrast, individuals who belong to ideologically inconsistent attitude categories may be less willing to categorize others in accordance with their attitudes on even a single issue. As the information preference measures indicate, these subjects generally had little expectation about the target's other attitudes, even knowing his position on

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capital punishment. Perhaps, non-ideological individuals did not perceive their own ideological inconsistency, or even their stand on individual issues, as relevant to their statement sorting. Taken together, these results seem to suggest that attitude categories and their associated expectations may be used by individuals most often if the individuals are ideologically consistent in their own thinking about the issues.

Although it is not readily clear why this is so, it may be the case that individuals who are ideologically consistent in their attitudes may have a more well-formed means of organizing attitude-relevant information than those who are not consistent. As Converse (1964) has shown, in contrast to their non-ideologue counterparts, ideologues are generally more versed in many political issues, have a more abstract conception about politics, and are more often actively engaged in attempts to persuade others to believe as they do. Moreover, they are often unaware that they employ the labels "liberal" and "conservative" in discussing their world views. Thus, future research on the nature of attitude categories will need to consider whether ideologues have a more complex cognitive structure than non-ideologues for thinking about the political attitudes of others.

It is important to keep in mind that the the conclusions of Study 3 are contingent upon the larger question of whether the attitudes used are representative of attitude categories in general. That is, would the results obtained in Study 3 have been the the same if the attitudes under investigation had been relevant to abortion rather than to capital punishment? While there is little means to address this question directly, the consistent findings for the evaluation measures collected in the present study suggest that the differences between the study of

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attitudes on one issue and another are likely to be minimal. Nevertheless, the fact that the evaluation bias was not as extreme in the current investigation as had been the case for Study 1 (targets divided on abortion attitudes), suggests that caution should be exercised in making general inferences about attitude categories from a single study. Perhaps individuals are less involved with capital punishment than they are with the issue of abortion.

General Discussion

Taken together, Studies 1, 2 and 3 have established that attitudes act as social categories. The results from Study 1 suggest that individuals categorize themselves and others on the basis of an attitude they hold. Attitude category membership was then shown to be useful for structuring and organizing attitude-relevant information. Moreover, it was also established that membership in an attitude category led to an independent evaluative bias in favor of the attitude ingroup. In further exploring the attitude category concept, Study 2 provided evidence for the assumption of category similarity by ingroup members and replicated the evaluative findings in Study 1. Most importantly, Study 2 provided greater substantiation of the attitude category concept by demonstrating that members possessed a better articulated cognitive structure for the ingroup than for the outgroup. Finally, Study 3 suggested that attitudes as categories exhibit stronger cognitive-organizational properties if the category member is ideologically consistent across issues.

Attitude category membership. How then does membership in an attitude category affect an individual? This question may be addressed in two ways. First, it would be helpful to consider how members of opposing categories are similar to and different from each other. As Study 1 demonstrated, category membership appears to cognitively tune an individual to attitude-relevant information. To this extent, both pro- and anti- members learn and retain the same information about the topic, irrespective of how they evaluate it. Similarly, Study 2 showed that category members also possessed greater complexity for the two groups

than did neutral individuals. An integration of the two findings suggests that membership in a category gives the individual an additional means to "define his or her world" not available to those who lack membership. Insofar as it is information alone that is involved, the opposing category members do not differ in how they think about or cognitively organize it.

Category members do differ, however, in the evaluations and expectations they form about the members of the opposing groups. It has been shown that individuals consistently see their own category's members in a more favorable light than they see outgroup members. It would appear that these differences are a function of a category member's inference that the other ingroup members are very similar to him or her. In other words, we look at those individuals who share our attitudes and attribute many of our own characteristics to them. Study 2 has shown that members possess a greater articulation in thinking about their ingroup, perhaps as a consequence of having a greater cognitive complexity for themselves as individuals. Studies 2 and 3 also suggest that attitude category membership leads to an expectation that others in our category will share our values and preferences to a much greater degree than those in the opposing attitude category.

The second way to assess the effects of attitude category membership is to consider the differences between category members and neutral individuals, or non-members. It has been established that neutral individuals have a lower sensitivity to category-relevant information, a lower complexity in their thinking about category membership, and less evaluative feelings toward either group than do category members. This would appear to provide some evidence that neutral

individuals truly belong to a non-category. In attitude measurement terms, this would mean that some individuals who react to an issue with a midpoint response are, in fact, neutral on that issue and not simply ambivalent or undecided.

The importance of the distinction between category members and non-members is underscored by much of the recent work in political science on the independent voter. Until recently, researchers thought that individuals who identified with neither political party simply had partisan feelings somewhere halfway between Republicans and Democrats and were capable of casting a ballot for a candidate without the benefit of a party label (Key, 1961). Recent research, however, has shown this to be only partly true (Converse & Markus, 1979; Miller & Levitin, 1976). Rather, there are two types of non-partisans: the "leaner" and the "pure" independent. Although the independent leaner does fall between the identifiers of the two parties with respect to voting, often splitting the ticket; the pure independent neither votes very often nor casts a very informed ballot when doing so. In effect, the pure independent is very much akin to the neutral individual in that he or she seems not to possess the means to think in partisan terms.

The issue of measurement. The present research has shown that it is important to identify individuals for whom the issue means ambivalence, and for whom it means the lack of any attitude at all. Given the current attitude measurement techniques, greater care should be used in interpreting the meaning of a middle scale score. The term "undecided" often used in research of this type may not really be an appropriate anchor point.

In some ways, the measures used in the present research seem to have overcome these problems. Subjects who responded with a middle score also had to place themselves in the category of "neutral" in order to be considered as such. Future research might be directed toward enumerating the differences between midpoint scorers who identify themselves as "neutral" and those who choose to identify themselves with the groups. It seems likely that the results would parallel those of the "pure" and "leaning" independent.

In any case, the current research suggests that neutral individuals, while likely having knowledge about category members through interpersonal contact with them, lack the means by which to think about them. As Studies 1 and 2 have shown, given that the same member-relevant information is available to both neutrals and attitude category members, neutrals have a lower retention rate. Future research should concentrate its efforts on exploring the question of whether this memory differential also appears for actual issue-relevant information as well. While the findings of Judd and Kulik (1980) offer support for this possibility, it will be recalled that their methods were not entirely convincing. The procedures employed in Study 1 would also be useful in further defining the differences between attitudes as beliefs about the world and attitude as social categories. Failure to replicate the findings of Study 1 would suggest that neutrals are aschematic only with respect to the categorical aspects of attitudes.

Persuasion and the structure of attitudes. It is interesting to further consider the types of research that may be conducted utilizing the concept of attitude categories. In their early conceptual definition, Rosenberg and Hovland (1960) argued that attitudes consist of both a cognitive and a behavioral component. Consistent with their

definition, the present research appears to have isolated both of these components with respect to how individuals learn about and how they evaluate the members of their attitude categories. As demonstrated, irrespective of the actual evaluative position individuals hold toward the issue of abortion, they appear to have identical structures for the encoding, storage and retrieval of attitude category-relevant information, whether supportive or challenging. The results of Judd and Kulik (1980) suggest that the cognitive results found here are likely to extend to the learning of issue-relevant information as well.

As both studies point out, however, the cognitive-structural properties of attitudes are quite independent of the evaluation of statements that argue for or against the individual's attitudinal position. The position advocated by the individual does indeed affect his or her evaluation of supportive or challenging arguments (Judd & Kulik, 1980) and the evaluation of members of opposing attitude categories (presented here). Thus, while individuals who hold opposing attitudes seem to process attitude information in an identical bipolar fashion, the major difference between them appears as an affective or evaluative response. That is, a schematic map of the attitudes "anti-abortion" and "pro-choice abortion" would look precisely the same with respect to the information that is encoded, organized and later retrieved. The only difference between individuals who hold opposing positions on the issue would be their final evaluation of the supportive and challenging information.

It has long been documented that, outside of the laboratory, attempts at attitude change vis-a-vis persuasion are not particularly successful (Kraus & Davis, 1980). Given that members of attitude

categories "tune in" to both supporting and challenging information, and yet are not influenced by it, this finding is not surprising. A persuasive effort through a rational appeal to an individual's belief system may cause him or her to evaluate the information as good or bad, but seems not to affect what he or she remembers about it. Indeed, it would appear that attitude-oriented individuals may even seek out information relevant to both sides of an issue, if it is useful (cf. Hillis & Crano, 1973).

Therefore, attempts to persuade an individual of the correctness of an opposing position through the presentation of simple issue-relevant statements are probably not very successful. Given the bipolar nature of attitudes, statements favoring either side of an issue will be equally encoded and retained. As mass media research has shown (Patterson & McClure, 1976), persuasive appeals only reinforce what is already believed. Perhaps, attempts at attitude change, to be most effective, should involve altering the affective rather than the cognitive component. Evidence for this assertion has been considered by Anderson (1974) who argues that attitudes have both a surface and a basal component. In his research on order effects and persuasion, he finds that while the affective surface component is fairly malleable in the short term, the basal or deeper cognitive component is highly resistant to change.

Given the distinction between affect and cognition, neutrals too, would seem to be largely unaffected by rational persuasive appeals. As was shown in Studies 1 and 2, individuals who identify with neither attitude category lack a means for evaluating and assimilating attitude category-relevant information. Since neutral individuals are devoid of both the cognitive and the affective components necessary to comprehend

these arguments, they would likely demonstrate a higher forgetting differential over time. Thus, greater retention of arguments favoring one side of an issue over another would be unlikely. In fact, it seems plausible that in their day-to-day contact with the mass media, individuals who are neutral on an issue may not even attend to information relevant to that issue.

The origin of attitudes. The differences between attitude category members and neutral non-members may also have consequences for the theories on the formation of attitudes. The mass media research discussed above would also seem to suggest that individuals do not simply form their attitudes on the basis of reading information about both sides of an issue and then selecting their position. Such a rational approach to the origin of attitudes would suggest that individuals begin with a "blank slate," and accumulate attitude information over time. This approach would have to assume that attitude arguments are retained and then evaluated. As the present research has shown, however, the retention assumption is simply not supported. Rather, individuals seem best able to store attitude information if they first possess the attitude structures necessary.

The research on political socialization is entirely consistent with this explanation. According to Hess and Torney (1967), affect precedes cognition. They theorize that young children learn their political beliefs from their parents as simple "good" and "bad" responses. Having established the attitude categories, the children then utilize them across their lifetimes as a means to learn about and remember more detailed attitude-relevant information. Children, who for whatever

reason, do not learn which beliefs to take as their own, seem not to have the means to evaluate or comprehend later arguments.

Mapping out the cognitive system. Recall that McGuire (1968) has advocated the use of the principles of cognitive consistency to "map out" the cognitive system. To this end, he has made a grand effort to change an individual's belief and determine whether evidence of this change could be found across the individual's entire "belief network" (McGuire, 1960). For example, an individual might believe that "all Republicans are crooks." Introduction of the information, "John is an honest Republican" should result in an attenuation of the original belief such that the individual should also rate "President Reagan" as more honest than before. Unfortunately, McGuire finds that people do not seem to follow the logical-syllogistic mode of thinking. Instead, he concludes that subjective inferences made by individuals exercise a "more primitive mode of thought."

Perhaps a more promising approach to the cognitive mapping explored by McGuire would entail the use of the attitude categories defined here. Future research might consider the effects of attitude change, perhaps through cognitive dissonance (cf. Festinger, 1957), upon the structural properties of the individual's attitude. Given an individual who is initially a member of the pro-choice attitude category for example, it may be possible to alter his or her evaluation of the favorability toward abortion to one of neutrality through the commission of an attitude-discrepant behavior. Would this person then display a lower retention of category-relevant information? If so, this finding would serve as evidence for dissonance as producing a structural as well as an evaluative change. If, however, category-relevant information retention remains as great as that initially demonstrated, performance of a

dissonant behavior would instead seem to lead to a change in evaluation of the object but not alter the "cognitive structural" aspects of the initial attitude.

Caveats and cautions. The above discussion is predicated upon whether individuals use all attitudes as social categories. Future research must establish that the findings presented here are not simply artifacts of the issues employed. The evaluative findings in presented in Study 3, while for the most part consistent with those in Studies 1 and 2, suggest that some issues may lead to a much stronger categorization of individuals than others. One relevant line of work is that of Sherif and Hovland, (1961), who argue that attitudes need to be considered in terms of the individual's "ego-involvement" with the issue. Perhaps, there is some minimum level of involvement necessary in order for the individual to utilize the attitude as a social category.

Beyond the issue of involvement is the nagging problem of defining membership in an attitude category. The present research has made use of two measures: the semantic differential and a social identity item. Individuals who were inconsistent across the criteria were excluded from further analysis. Future studies involving the attitude category concept should focus on the question of whether self-identification with an attitude category alone (without the corresponding attitude scale response) leads to results consistent with those reported here.

Of particular concern to the more general research on social categories is the classification of neutral individuals. It is not clear whether they are non-category members or members of a third specific attitude category instead. Perhaps this question could be disentangled by replicating Study 1 with an introduction of additional statements

allegedly made by neutral target individuals. If neutral subjects exhibit greater memory strength for these statements than for statements made by pro- and anti- category members, this would serve as evidence that neutrality is a separate attitude category. If such is not the case, then neutrals are most likely to be "outsiders" for the defining issue.

Finally, as always, the findings in the present research need to be integrated into the vast literatures on attitudes and attitude change. Perhaps a serious effort will be undertaken to clearly define what is meant by an "attitude." A survey of the various definitions suggests that the terms "evaluation" and "cognition" used to conceptualize an attitude, need to be more sharply distinguished. The theory of cognitive dissonance argues that performance of a counter-attitudinal behavior can lead to a change in "belief" about the object. It is not completely clear whether this includes the cognitive structure underlying the belief or merely the evaluation of the object. Similarly, future research should investigate whether persuasive messages can change the structural aspects of thought or simply alter the individual's evaluation of the attitude object. It is hoped that the present research will be a first step toward answering these questions.

FOOTNOTES

1

A repeated measures analysis of variance was conducted on each of the individual values used to calculate $P(A^*)$ using the overall design. This included the hit rate $P(s|S)$, the false alarm rate $P(s|N)$, and the bias toward "signal responses" $P(S)$. An examination of the ANOVA tables in Appendix A indicates that there were several significant effects on these measures. However, since these values are important only to the extent that significant differences are found in the measure of sensitivity $P(A^*)$, only the relevant $P(s|S)$, $P(s|N)$ and $P(S)$ values are reported in the text.

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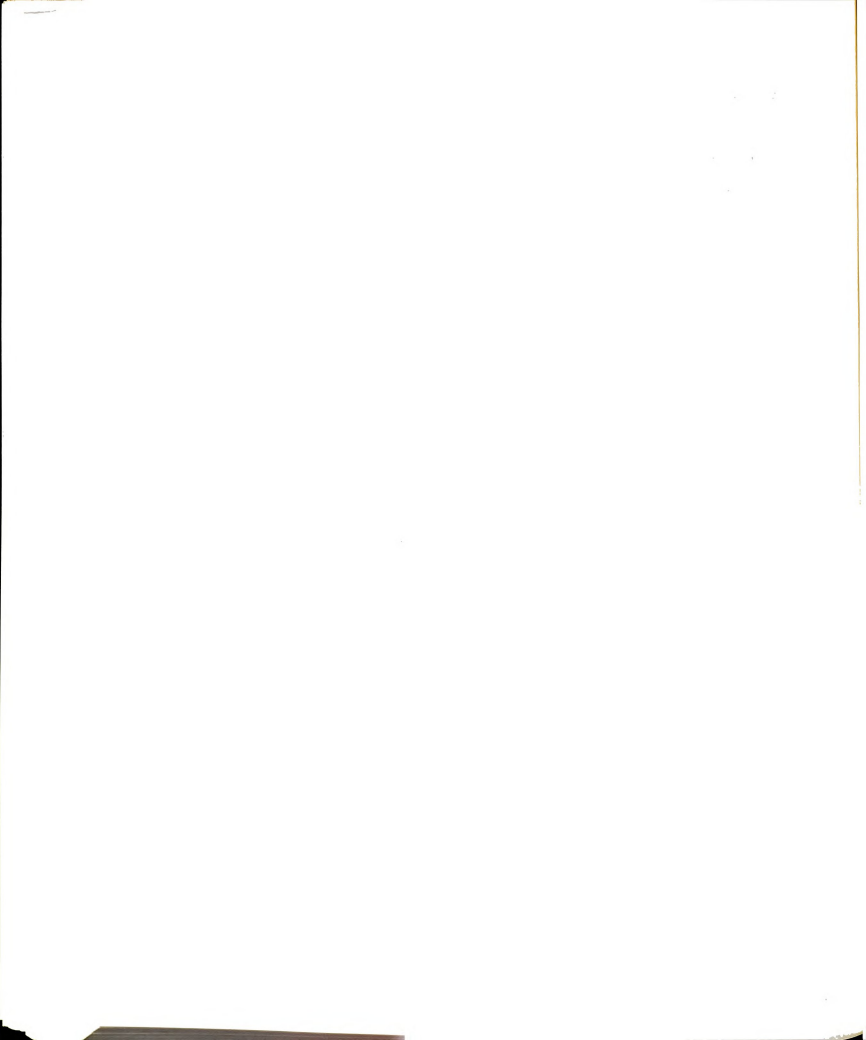
Tests of planned contrasts, planned comparisons and simple effects were conducted using a pooled error term for repeated measures. Corresponding degrees of freedom were also pooled. (See Winer, 1971, pp. 529-532.)

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According to Keppel (1982), the analysis of covariance is predicated on the assumption of homogeneity of regression. That is, the covariate should not correlate with the independent variables included in the overall interaction of interest. Keppel notes that if the covariate-by-independent variable interaction is significant, there will be a "significant reduction in the sensitivity of the F test" for the original interaction.

In the present case, the covariate, ideological perception of target, was marginally related to the subject CP by MD by statement

type interaction, $F(1,51) = 3.73$, $p < .06$. However, since the F for the interaction adjusted for the covariate was still significant, the possible violation of the homogeneity of regression assumption was not a problem.



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APPENDICES

APPENDIX A

Analyses of Sensitivity Rates (P(A*)) and Evaluative Measures

From Study 1

Table A1

Analysis of Variance Summary Table of P(A*) by Statement Valence
by Target Attitude Category by Subject Attitude Category

Source	df	MS	F
Subject's Attitude Category (A)	2	.090	1.68
S/A	77	.054	
Target's Attitude Category (T)	1	.007	1.66
A x T	2	.002	.40
T x S/A	77	.004	
Statement Valence (V)	2	.289	24.37**
A x V	4	.063	5.34**
V x S/A	154	.012	
T x V	2	.022	5.05*
A x T x V	4	.009	2.27
T x V x S/A	154	.004	

*p < .005

**p < .0005

Table A3

Analysis of Variance Summary Table of P(S) by Statement Valence
by Target Attitude Category by Subject Attitude Category

Source	df	MS	F
Subject's Attitude Category (A)	2	.003	.38
S/A	77	.009	
Target's Attitude Category (T)	1	.312	15.47**
A x T	2	.004	.21
T x S/A	77	.020	
Statement Valence (V)	2	.010	4.86*
A x V	4	.001	.40
V x S/A	154	.002	
T x V	2	.030	2.02
A x T x V	4	.027	1.78
T x V x S/A	154	.015	

*p < .01

**p < .0001

Table A4

Analysis of Variance Summary Table of P(s|N) by Statement Valence
 by Target Attitude Category by Subject Attitude Category
 by False Alarm Type (Category Misassignment vs. Distractor)

Source	df	MS	F
Subject's Attitude Category (A)	2	.071	.97
S/A	77	.073	
Target's Attitude Category (T)	1	.349	11.77**
A x T	2	.003	.11
T x S/A	77	.030	
Statement Valence (V)	2	.193	13.63***
A x V	4	.059	4.14*
V x S/A	154	.014	
False Alarm Type (F)	1	7.931	196.41***
A x F	2	.081	2.00
F x S/A	77	.040	
*p < .05			
**p < .001			
***p < .0001			

Analysis of Variance Summary Table of P(s!N) by Statement Valence

by Target Attitude Category by Subject Attitude Category

by False Alarm Type (Category Misassignment vs. Distractor)

(Cont.)

Source	df	MS	F
T x V	2	.069	2.90
A x T x V	4	.037	1.46
T x V x S/A	154	.024	
T x F	1	.581	22.65***
A x T x F	2	.038	1.46
T x F x S/A	77	.026	
V x F	2	.024	1.71
A x V x F	4	.041	2.95*
V x F x S/A	154	.014	
T x V x F	2	.010	.72
A x T x V x F	4	.018	1.29
T x V x F x S/A	154	.014	

*p < .05

**p < .0005

***p < .00001

Table A5

Analysis of Variance Summary Table of Target Evaluation by
Target Attitude Category by Subject Attitude Category

Source	df	MS	F
Subject's Attitude Category (A)	2	39.212	1.26
S/A	76	31.138	
Target's Attitude Category (T)	1	115.251	2.02
A x T	2	725.559	12.74*
T x S/A	76	56.969	

* $p < .0001$

Table A6

Analysis of Variance Summary Table of Target Ideology by
Target Attitude Category by Subject Attitude Category

Source	df	MS	F
Subject's Attitude Category (A)	2	5.617	5.38*
S/A	76	31.138	
Target's Attitude Category (T)	1	237.401	96.07**
A x T	2	19.055	7.71*
T x S/A	76	2.471	

** $p < .00001$
* $p < .01$

APPENDIX B

Analyses of Evaluative Measures, Perceptions of Homogeneity, and Cognitive Complexity Measures From Study 2

Table B1

Analysis of Variance Summary Table of Self-Target Differences by Target Attitude Category by Subject Attitude Category

Source	df	MS	F
Subject's Attitude Category (A)	2	.16	.13
S/A	151	1.24	
Target's Attitude Category (T)	1	3.838	1.96
A x T	2	220.732	112.84*
T x S/A	151	1.956	

* $p < .0001$

Table B2

Analysis of Variance Summary Table of Target-Subject Similarity Target Attitude Category by Subject Attitude Category

(Attitude Items other than Abortion)

Source	df	MS	F
Subject's Attitude Category (A)	2	316.100	.78
S/A	132	407.151	
Target's Attitude Category (T)	1	156.169	.84
A x T	2	4668.440	24.95*
T x S/A	132	187.081	

* $p < .00001$

Table B3

Analysis of Variance Summary Table of Target-Subject Similarity

Target Attitude Category by Subject Attitude Category

(Lifestyle Preference Items)

Source	df	MS	F
Subject's Attitude Category (A)	2	550.774	.89
S/A	151	1.24	
Target's Attitude Category (T)	1	329.207	3.62
A x T	2	2069.810	22.79*
T x S/A	151	1.956	

* $p < .0001$

Table B4

Analysis of Variance Summary Table of Target Category Heterogeneity

by Target Attitude Category by Subject Attitude Category

Source	df	MS	F
Subject's Attitude Category (A)	2	.381	.14
S/A	151	2.682	
Target's Attitude Category (T)	1	2.198	1.47
A x T	2	.712	.48
T x S/A	151	1.494	

Table B5

Analysis of Variance Summary Table of Subject's Estimates of Number
of Odd People in Target Category by Target Attitude Category
by Subject Attitude Category

Source	df	MS	F
Subject's Attitude Category (A)	2	243.434	.51
S/A	151	473.503	
Target's Attitude Category (T)	1	770.379	5.74*
A x T	2	404.898	3.02
T x S/A	151	1.956	

* $p < .02$

Table B6

Analysis of Variance Summary Table of Number of Subtypes Listed
by Target Attitude Category by Subject Attitude Category

Source	df	MS	F
Subject's Attitude Category (A)	2	31.290	3.52*
S/A	146	8.879	
Target's Attitude Category (T)	1	.061	.06
A x T	2	5.694	5.50**
T x S/A	146	1.036	

* $p < .05$

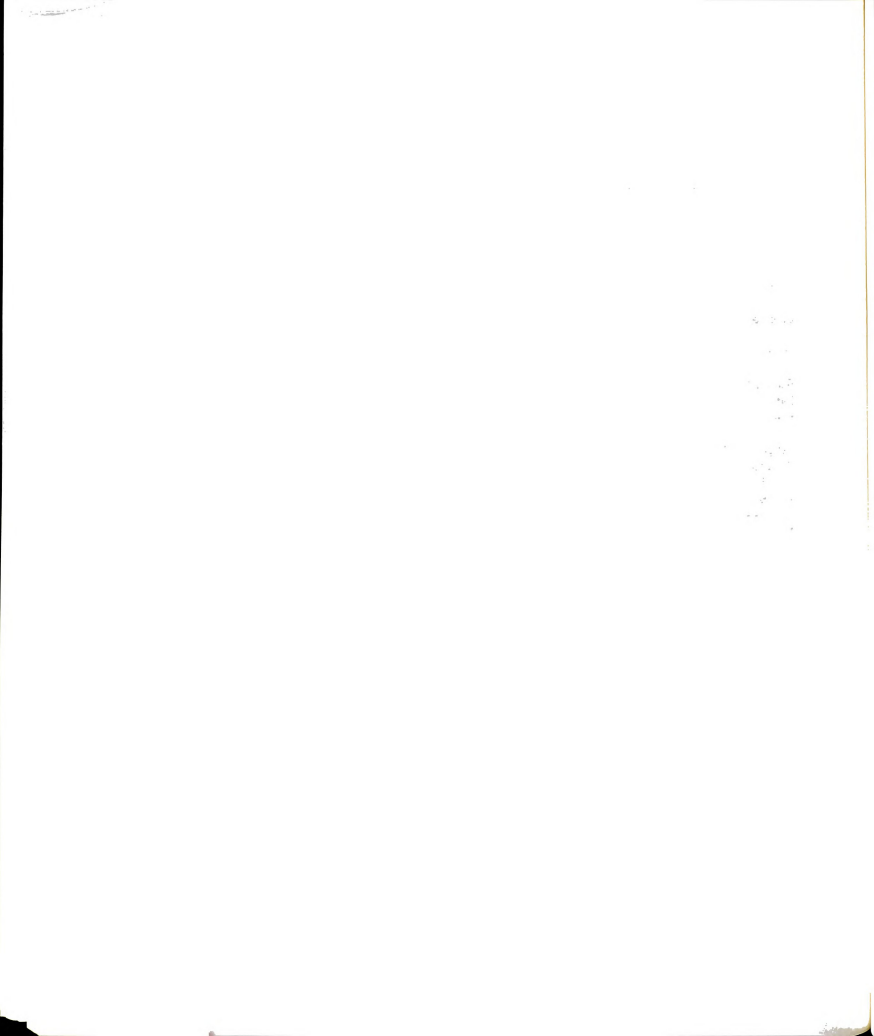
** $p < .005$

Table B7

Analysis of Variance Summary Table of Subjects' Attraction
 Toward Target by Target Attitude Category by
 Subject Attitude Category

Source	df	MS	F
Subject's Attitude Category (A)	2	5.742	.81
S/A	147	7.080	
Target's Attitude Category (T)	1	3.000	.18
A x T	2	1527.790	91.47*
T x S/A	147	16.702	

*p < .0001



APPENDIX C

Analyses of Statement Placement and Evaluative Measures

From Study 3

Table C1

Analysis of Variance Summary Table of Subjects' Statement
Placement for Target by Target CP Attitude Category by
Subject's CP and MD Attitude Categories

Source	df	MS	F
Subject's Attitude on Capital Punishment (C)	1	1.810	1.53
Subject's Attitude on Marijuana Decrim. (M)	1	.382	.32
C x M	1	.405	.34
S/(C x M)	55	1.185	
Statement Type (T)	1	436.574	31.69***
C x T	1	87.366	6.34*
M x T	1	4.604	.57
C x M x T	1	181.574	13.18**
T x S/(C x M)	55	13.774	

***p < .0001

**p < .001

*p < .05

Table C2
 Analysis of Variance Summary Table of Subjects' Evaluation
 of Target by Target CP Attitude Category by
 Subject's CP and MD Attitude Categories

Source	df	MS	F
Subject's Attitude on Capital Punishment (C)	1	29.861	2.74
Subject's Attitude on Marijuana Decrim. (M)	1	15.933	1.46
C x M	1	16.371	1.51
S/(C x M)	55	10.881	
Target Category (T)	1	3474.640	132.88*
C x T	1	471.046	18.02*
M x T	1	.070	.00
C x M x T	1	.715	.03
T x S/(C x M)	55	26.148	

*p < .0001

Table C3

Analysis of Variance Summary Table of Subjects' Evaluation
of Target "Intelligence" by Target CP Attitude Category by
Subject's CP and MD Attitude Categories

Source	df	MS	F
Subject's Attitude on Capital Punishment (C)	1	.119	.06
Subject's Attitude on Marijuana Decrim. (M)	1	.453	.21
C x M	1	.503	.23
S/(C x M)	55	2.157	
Target Category (T)	1	.000	.00
C x T	1	15.860	8.76*
M x T	1	2.860	1.58
C x M x T	1	1.000	.55
T x S/(C x M)	55	1.811	

*p < .005

APPENDIX D

Sample Booklets used in Studies 1, 2 and 3

ATTITUDE INVENTORY

INSTRUCTIONS: On each page of this booklet you will find a concept to be judged and underneath it a set of scales. Please rate the concept on each of these scales in order.

If you feel that the concept at the top of the page is VERY RELATED to one end of the scale you should circle either the "1" or the "5".

If the concept seems ONLY SLIGHTLY RELATED to one side as opposed to the other side (but is not really neutral), then you should circle the "2" or the "4".

If you consider the concept to be NEUTRAL on the scale, both sides of the scale EQUALLY RELATED with the concept, or if the scale is COMPLETELY IRRELEVANT to the concept, then you should circle the "3".

Make each item a separate and independent judgment. Work at fairly high speed through this test. It is your first impressions that we want.

PERMITTING ABORTION ON DEMAND

1. Good 1 2 3 4 5 Bad
2. Kind 1 2 3 4 5 Cruel
3. Affects Me 1 2 3 4 5 Does Not Affect Me
4. Unpleasant 1 2 3 4 5 Pleasant
5. Fair 1 2 3 4 5 Unfair
6. Meaningless 1 2 3 4 5 Meaningful
7. Beautiful 1 2 3 4 5 Ugly
8. Foolish 1 2 3 4 5 Wise
9. Important 1 2 3 4 5 Unimportant
10. Superficial 1 2 3 4 5 Profound
11. Positive 1 2 3 4 5 Negative
12. Boring 1 2 3 4 5 Interesting
13. Valuable 1 2 3 4 5 Worthless
14. Consequential 1 2 3 4 5 Inconsequential

MAKING POSSESSION OF UNAUTHORIZED HANDGUNS ILLEGAL

1. Good 1 2 3 4 5 Bad
2. Kind 1 2 3 4 5 Cruel
3. Affects Me 1 2 3 4 5 Does Not Affect Me
4. Unpleasant 1 2 3 4 5 Pleasant
5. Fair 1 2 3 4 5 Unfair
6. Meaningless 1 2 3 4 5 Meaningful
7. Beautiful 1 2 3 4 5 Ugly
8. Foolish 1 2 3 4 5 Wise
9. Important 1 2 3 4 5 Unimportant
10. Superficial 1 2 3 4 5 Profound
11. Positive 1 2 3 4 5 Negative
12. Boring 1 2 3 4 5 Interesting
13. Valuable 1 2 3 4 5 Worthless
14. Consequential 1 2 3 4 5 Inconsequential

INCREASED SPENDING FOR NATIONAL DEFENSE

1. Good 1 2 3 4 5 Bad
2. Kind 1 2 3 4 5 Cruel
3. Affects Me 1 2 3 4 5 Does Not Affect Me
4. Unpleasant 1 2 3 4 5 Pleasant
5. Fair 1 2 3 4 5 Unfair
6. Meaningless 1 2 3 4 5 Meaningful
7. Beautiful 1 2 3 4 5 Ugly
8. Foolish 1 2 3 4 5 Wise
9. Important 1 2 3 4 5 Unimportant
10. Superficial 1 2 3 4 5 Profound
11. Positive 1 2 3 4 5 Negative
12. Boring 1 2 3 4 5 Interesting
13. Valuable 1 2 3 4 5 Worthless
14. Consequential 1 2 3 4 5 Inconsequential

MANDATORY DEATH PENALTY FOR MURDER

1. Good 1 2 3 4 5 Bad
2. Kind 1 2 3 4 5 Cruel
3. Affects Me 1 2 3 4 5 Does Not Affect Me
4. Unpleasant 1 2 3 4 5 Pleasant
5. Fair 1 2 3 4 5 Unfair
6. Meaningless 1 2 3 4 5 Meaningful
7. Beautiful 1 2 3 4 5 Ugly
8. Foolish 1 2 3 4 5 Wise
9. Important 1 2 3 4 5 Unimportant
10. Superficial 1 2 3 4 5 Profound
11. Positive 1 2 3 4 5 Negative
12. Boring 1 2 3 4 5 Interesting
13. Valuable 1 2 3 4 5 Worthless
14. Consequential 1 2 3 4 5 Inconsequential

REDUCING THE PENALTIES FOR POSSESSION OF MARIJUANA

1. Good 1 2 3 4 5 Bad
2. Kind 1 2 3 4 5 Cruel
3. Affects Me 1 2 3 4 5 Does Not Affect Me
4. Unpleasant 1 2 3 4 5 Pleasant
5. Fair 1 2 3 4 5 Unfair
6. Meaningless 1 2 3 4 5 Meaningful
7. Beautiful 1 2 3 4 5 Ugly
8. Foolish 1 2 3 4 5 Wise
9. Important 1 2 3 4 5 Unimportant
10. Superficial 1 2 3 4 5 Profound
11. Positive 1 2 3 4 5 Negative
12. Boring 1 2 3 4 5 Interesting
13. Valuable 1 2 3 4 5 Worthless
14. Consequential 1 2 3 4 5 Inconsequential

LOWERING THE DRINKING AGE TO 18 YEARS

1. Good 1 2 3 4 5 Bad
2. Kind 1 2 3 4 5 Cruel
3. Affects Me 1 2 3 4 5 Does Not Affect Me
4. Unpleasant 1 2 3 4 5 Pleasant
5. Fair 1 2 3 4 5 Unfair
6. Meaningless 1 2 3 4 5 Meaningful
7. Beautiful 1 2 3 4 5 Ugly
8. Foolish 1 2 3 4 5 Wise
9. Important 1 2 3 4 5 Unimportant
10. Superficial 1 2 3 4 5 Profound
11. Positive 1 2 3 4 5 Negative
12. Boring 1 2 3 4 5 Interesting
13. Valuable 1 2 3 4 5 Worthless
14. Consequential 1 2 3 4 5 Inconsequential

STAT

I sneaked out
without payin

I drove five
shopping las

I set my wat
because it w

I scored in
on the Medic
Admissions t

I awoke at 8

Once when I
California I
track tapes
me a ride.

I had my dr
suspended f
offender.

I had two b
other peopl
married.

I helped pu
neighbor's

Sex: _____
Code Number: _____

RESPONSE LIST

STATEMENT	PRO-CHOICE ABORTION	ANTI-ABORTION	NEITHER
I sneaked out of a restaurant without paying my bill.	---	---	---
I drove five miles to go shopping last week.	---	---	---
I set my watch back yesterday because it was running fast.	---	---	---
I scored in the 99th percentile on the Medical School Admissions test.	---	---	---
I awoke at 8:00 this morning.	---	---	---
Once when I was hitch-hiking in California I stole two eight track tapes from a guy who gave me a ride.	---	---	---
I had my driver's license suspended for being a habitual offender.	---	---	---
I had two brief affairs with other people while I was married.	---	---	---
I helped put out a fire in my neighbor's kitchen.	---	---	---

I had lunch w
last Sunday.

I brought my
from a 2.4 to

I'm really pr
Blacks and Je

I brought my
dry cleaners.

I made a long
California.

I fell asleep
night.

I drank two c
yesterday.

I invented a
had it patent

I took a tow
from my hote
Francisco.

I sold my fi
national mag

I finished m
race.

I stole \$30
wallet while
our home.

I was chosen
the universi

I had lunch with my best friend
last Sunday.

I brought my grade point up
from a 2.4 to a 3.3.

I'm really prejudiced against
Blacks and Jews.

I brought my new suit to the
dry cleaners.

I made a long-distance call to
California.

I fell asleep at midnight last
night.

I drank two cups of coffee
yesterday.

I invented a new product and
had it patented.

I took a towel and an ashtray
from my hotel room in San
Francisco.

I sold my first article to a
national magazine last spring.

I finished my first marathon
race.

I stole \$30 from my uncle's
wallet while he was visiting at
our home.

I was chosen to be soloist with
the university orchestra.

I deposited \$1
savings account

I saved enough
year traveling

I got my hair
I attended.

I was arrested
\$500 in bad c

I lost 85 pounds
and have main
weight for a

I lied about
background to
scholarship.

I hand-made
gifts last year
shows more than
than store-b

I filed an i
last year.

I washed and
Sunday.

I stole a pair
running shoes
locker.

I started a
see what wor

I rescued a
trapped by
a cave at t

I read two
literature

I deposited \$15.00 into my
savings account.

I saved enough money to spend a
year traveling in Europe.

I got my hair cut for a wedding
I attended.

I was arrested for passing over
\$500 in bad checks.

I lost 85 pounds in six months
and have maintained my new
weight for a year.

I lied about my ethnic
background to get a minority
scholarship.

I hand-made all of my Christmas
gifts last year - I think that
shows more thought and feeling
than store-bought gifts.

I filed an income tax return
last year.

I washed and waxed my car last
Sunday.

I stole a pair of new Nike
running shoes from an open gym
locker.

I started a grass fire, just to
see what would happen.

I rescued a child who was
trapped by an incoming tide in
a cave at the beach.

I read two fiction books for my
literature class.

I won a full
school.

I became rea
threatened t
across my ne

I stole two
a dryer in t

I returned a
library.

I lived with
summer.

I took flyin
completed my
country flig
problems.

I found a do

I used my fi
help save th
and-run vict

I ate dinner

I didn't lov
and our marr
it.

I was arrest
narcotics an

I kicked my
without any

I set up my
and now I've
and the hous

I won a full scholarship to law school.

I became really angry and threatened two children who cut across my new lawn.

I stole two pairs of jeans from a dryer in the laundromat.

I returned a book to the library.

I lived with my parents last summer.

I took flying lessons, and completed my first solo cross-country flight without any problems.

I found a dollar in the street.

I used my first-aid training to help save the life of a hit-and-run victim.

I ate dinner at 5:30 yesterday.

I didn't love my spouse 100% and our marriage didn't make it.

I was arrested for sale of narcotics and put on probation.

I kicked my addiction to heroin without any help.

I set up my own organic farm and now I've paid for the land and the house.

I volunteered
"community ac

I turned a te
written by a

I made an app
my car turned

I volunteered
week in a sen
home.

My personal h
rest on how m
Without money

I provided a
Vietnamese re
six weeks.

I went to the
to get a cavi

I spread rumo
roommate was

I bought a ne
winter.

I found an ex
in the park a
get the money

I worked all
the money to
a "dream vaca
Hawaii for tw
December.

I bought an a
this morning.

I volunteered time to the
"community action program".

--- --- ---

I turned a term paper that was
written by a friend.

--- --- ---

I made an appointment to have
my car turned up.

--- --- ---

I volunteered eight hours a
week in a senior citizen's
home.

--- --- ---

My personal happiness seems to
rest on how much money I have.
Without money I'm really down.

--- --- ---

I provided a home for a
Vietnamese refugee family for
six weeks.

--- --- ---

I went to the dentist yesterday
to get a cavity filled.

--- --- ---

I spread rumors that my
roommate was dishonest.

--- --- ---

I bought a new coat last
winter.

--- --- ---

I found an expensive necklace
in the park and pawned it to
get the money.

--- --- ---

I worked all summer and used
the money to send my parents on
a "dream vacation" -- a trip to
Hawaii for two weeks in
December.

--- --- ---

I bought an airplane ticket
this morning.

--- --- ---

I wrote a poem
accepted by a
magazine.

I won a trophy
individual per
NCAA swim meet

Because of good
performance,
job that I did

I ran away from
am sure made
very bad.

I took two di
on a one-week

I sold LSD to

I wrote a che
food.

I hit a dog w
kept driving
hurry.

I left my car
night, and it
fire that bur
timber.

I was a heroin
years and I s
my weakness f
drugs again.

I renewed my
and my regis

I wrote a poem that was
accepted by a local literary
magazine.

--- --- ---

I won a trophy for the best
individual performance at an
NCAA swim meet.

--- --- ---

Because of good prior
performance, I was offered a
job that I didn't apply for.

--- --- ---

I ran away from home, which I
am sure made my mother feel
very bad.

--- --- ---

I took two disadvantaged kids
on a one-week vacation.

--- --- ---

I sold LSD to an eighth grader.

--- --- ---

I wrote a check for \$20 for
food.

--- --- ---

I hit a dog with my car and
kept driving because I was in a
hurry.

--- --- ---

I left my campfire burning one
night, and it caused a forest
fire that burned 17 acres of
timber.

--- --- ---

I was a heroin addict for two
years and I still have to fight
my weakness to keep from taking
drugs again.

--- --- ---

I renewed my driver's license
and my registration yesterday.

--- --- ---

Instructions
that represent
about the
following

SCALE ITEM

Friendly-Hostile

Helpful-Dishonest

Stupid-Intelligent

Passive-Forceful

Very Likeable-Dislikeable

Independent-Dependent

Cooperative-Uncooperative

Peaceful-Aggressive

Liberal-Conservative

Which attitude

CODE NUMBER_____

SEX_____

Instructions: For each of the scale items below, write in the number that represents the response closest to your feelings and impressions about the two attitudinal groups. The scale values are on the following page. USE WHOLE NUMBERS ONLY PLEASE. (No fractions).

SCALE ITEM	PRO-CHOICE	ANTI-ABORTION
Friendly-Hostile	-----	-----
Helpful-Disruptive	-----	-----
Stupid-Intelligent	-----	-----
Passive-Forceful	-----	-----
Very Likeable-Difficult to Like	-----	-----
Independent-Conforming	-----	-----
Cooperative-Uncooperative	-----	-----
Peaceful-Aggressive	-----	-----
Liberal-Conservative	-----	-----

Which attitudinal group would you prefer to have as your friends?
(Circle One)

Pro-Choice Abortion

Anti-Abortion

Neither Group

Friendly

1

Helpful

1

Stupid

1

Passive

1

Very
Likeable

1

Independent

1

Cooperative

1

Peaceful

1

Liberal

1

GROUP IMPRESSIONS SCALE

Friendly ----- Neither ----- Hostile

1 2 3 4 5 6 7

Helpful ----- Neither ----- Disruptive

1 2 3 4 5 6 7

Stupid ----- Neither ----- Intelligent

1 2 3 4 5 6 7

Passive ----- Neither ----- Forceful

1 2 3 4 5 6 7

Very Likeable ----- Neither ----- Difficult To Like

1 2 3 4 5 6 7

Independent ----- Neither ----- Conforming

1 2 3 4 5 6 7

Cooperative ----- Neither ----- Uncooperative

1 2 3 4 5 6 7

Peaceful ----- Neither ----- Aggressive

1 2 3 4 5 6 7

Liberal ----- Neither ----- Conservative

1 2 3 4 5 6 7

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b) Is ag

c) Is in

d) Is ag

e) Is ag

3. a) What p

b) What p

c) What p
issue

4. Do you be
Anti-Abor

Please answer the following questions to the best of your ability.
There are no right or wrong answers.

1. Are you pro-choice abortion, anti-abortion, or neutral on the abortion issue?
2. Suppose that you are meeting another person for the very first time. You have been told that this person is opposed to abortion under any circumstances. What is the probability that this person:

(To indicate probabilities assume that 0 means "not at all likely," 50 means "unsure" and 100 means "highly likely." You may select any value between 0 and 100 for each issue.)

- a) Is in favor of gun control? _____
- b) Is against capital punishment? _____
- c) Is in favor of marijuana decriminalization? _____
- d) Is against increased defense spending? _____
- e) Is against school integration? _____

3. a) What percent of the population is Pro-Choice? _____%
- b) What percent of the population is Anti-Abortion? _____%
- c) What percent of the population is neutral on the issue of abortion? _____%

(Total for 3a, 3b, and
3c should be 100%)

4. Do you believe that your experimenter is Pro-Choice Abortion, Anti-Abortion, Neutral or don't you know?

5. Was the
did not

6. What do
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5. Was there any part of today's research that you found confusing or did not understand?
6. What do you think is the purpose of today's research? Please be specific.
7. Why did you participate in today's research?

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PART 1

INSTRUCTIONS: On the next page of this booklet you will find a single concept to be judged and underneath it a set of scales. Please rate the concept on each of these scales in order.

If you feel that the concept at the top of the page is **VERY RELATED** to one end of the scale you should circle either the "1" or the "5".

If the concept seems **ONLY SLIGHTLY RELATED** to one side as opposed to the other side (but is not really neutral), then you should circle the "2" or the "4".

If you consider the concept to be **NEUTRAL** on the scale, both sides of the scale **EQUALLY RELATED** with the concept, or if the scale is **COMPLETELY IRRELEVANT** to the concept, then you should circle the "3".

Make each item a separate and independent judgment. Work at fairly high speed through this test. It is your first impressions that we want.

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PERMITTING ABORTION ON DEMAND

1. Good 1 2 3 4 5 Bad
2. Kind 1 2 3 4 5 Cruel
3. Affects Me 1 2 3 4 5 Does Not Affect Me
4. Unpleasant 1 2 3 4 5 Pleasant
5. Fair 1 2 3 4 5 Unfair
6. Meaningless 1 2 3 4 5 Meaningful
7. Beautiful 1 2 3 4 5 Ugly
8. Foolish 1 2 3 4 5 Wise
9. Important 1 2 3 4 5 Unimportant
10. Superficial 1 2 3 4 5 Profound
11. Positive 1 2 3 4 5 Negative
12. Boring 1 2 3 4 5 Interesting
13. Valuable 1 2 3 4 5 Worthless
14. Consequential 1 2 3 4 5 Inconsequential

INSTRUCTIONS

learn something
the political
interested in
abortion. (I
abortion should
ANTI-ABORTION
under most
of abortion
direction.

The following
others know
respond by
filling in
estimates.

Although some
answer each

1. Imagine
across the
people are
EXACTLY THE

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PART 2

INSTRUCTIONS: In this section of the questionnaire, we would like to learn something about how people perceive other people on the basis of the political opinions they hold. In this particular study, we are interested in the perceptions of others given their opinions on abortion. Some people are PRO-CHOICE ABORTION. They believe that abortion should be permitted under most circumstances. Other people are ANTI-ABORTION. They believe that abortions should not be permitted under most circumstances. Still other people are NEUTRAL on the issue of abortion and do not have any strong beliefs about abortion in either direction.

The following questions are concerned with how people perceive others knowing only their stand on abortion. For each question, simply respond by either circling the number closest to you own feelings or filling in the blank with a number that best reflects you best estimates.

Although some of the questions may seem redundant, they are not. Please answer each question carefully and thoughtfully.

1. Imagine that you are about to meet a group of 100 individuals from across the United States who have been randomly selected. All 100 people are ANTI-ABORTION. Of these 100 people, how many will have EXACTLY THE SAME OPINION AS YOU DO on:

- a) abortion? _____
- b) gun control? _____
- c) capital punishment? _____
- d) school integration? _____
- e) marijuana decriminalization? _____

How many of these 100 people (ANTI-ABORTION) will have the EXACT SAME PERSONAL TASTES AS YOU DO concerning:

- a) music? _____
- b) food? _____
- c) movies? _____
- d) other people? _____
- e) art? _____

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2. Imagine that you are about to meet a group of 100 individuals from across the United States who have been randomly selected. All 100 people are PRO-CHOICE ABORTION. Of these 100 people, how many will have EXACTLY THE SAME OPINION AS YOU DO on:

- a) abortion? _____
- b) gun control? _____
- c) capital punishment? _____
- d) school integration? _____
- e) marijuana decriminalization? _____

How many of these 100 people (PRO-CHOICE ABORTION) will have the EXACT SAME PERSONAL TASTES AS YOU DO concerning:

- a) music? _____
- b) food? _____
- c) movies? _____
- d) other people? _____
- e) art? _____

3. In GENERAL, how DIFFERENT do you see yourself from persons who are ANTI-ABORTION?

Very 1 2 3 4 5 6 7 Not at all
Different Different

4. In GENERAL, how DIFFERENT do you see yourself from persons who are PRO-CHOICE ABORTION?

Very 1 2 3 4 5 6 7 Not at all
Different Different

5. In GENERAL

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5. In GENERAL, how SIMILAR are ANTI-ABORTION people to EACH OTHER?

Very Similar	1	2	3	4	5	6	7	Not at all
to Each Other						Similar to Each Other		

6. In GENERAL, how SIMILAR are PRO-CHOICE ABORTION people to EACH OTHER?

Very Similar	1	2	3	4	5	6	7	Not at all
to Each Other						Similar to Each Other		

7. SPECIFICALLY, how SIMILAR are ANTI-ABORTION people to EACH OTHER in their OPINIONS on:

a) abortion

Very Similar	1	2	3	4	5	6	7	Not at all
to Each Other						Similar to Each Other		

b) gun control

Very Similar	1	2	3	4	5	6	7	Not at all
to Each Other						Similar to Each Other		

c) capital punishment

Very Similar	1	2	3	4	5	6	7	Not at all
to Each Other						Similar to Each Other		

d) school integration

Very Similar	1	2	3	4	5	6	7	Not at all
to Each Other						Similar to Each Other		

e) marijuana decriminalization

Very Similar	1	2	3	4	5	6	7	Not at all
to Each Other						Similar to Each Other		

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8. SPECIFICALLY, how SIMILAR are PRO-CHOICE ABORTION people to EACH OTHER in their OPINIONS on:

a) abortion

Very Similar 1 2 3 4 5 6 7 Not at all
to Each Other Similar to Each Other

b) gun control

Very Similar 1 2 3 4 5 6 7 Not at all
to Each Other Similar to Each Other

c) capital punishment

Very Similar 1 2 3 4 5 6 7 Not at all
to Each Other Similar to Each Other

d) school integration

Very Similar 1 2 3 4 5 6 7 Not at all
to Each Other Similar to Each Other

e) marijuana decriminalization

Very Similar 1 2 3 4 5 6 7 Not at all
to Each Other Similar to Each Other

9. SPECIFICALLY, how SIMILAR are ANTI-ABORTION people to EACH OTHER in their PERSONAL TASTES for:

a) music

Very Similar 1 2 3 4 5 6 7 Not at all
to Each Other Similar to Each Other

Very S
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10. SPEC
OTHER

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Very S
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b) movies

Very Similar 1 2 3 4 5 6 7 Not at all
to Each Other Similar to Each Other

c) friends (other people)

Very Similar 1 2 3 4 5 6 7 Not at all
to Each Other Similar to Each Other

d) food

Very Similar 1 2 3 4 5 6 7 Not at all
to Each Other Similar to Each Other

e) art (paintings)

Very Similar 1 2 3 4 5 6 7 Not at all
to Each Other Similar to Each Other

10. SPECIFICALLY, how SIMILAR are PRO-CHOICE ABORTION people to EACH OTHER in their PERSONAL TASTES for:

a) music

Very Similar 1 2 3 4 5 6 7 Not at all
to Each Other Similar to Each Other

b) movies

Very Similar 1 2 3 4 5 6 7 Not at all
to Each Other Similar to Each Other

c) friends (other people)

Very Similar 1 2 3 4 5 6 7 Not at all
to Each Other Similar to Each Other

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d) food

Very Similar 1 2 3 4 5 6 7 Not at all
to Each Other Similar to Each Other

e) art (paintings)

Very Similar 1 2 3 4 5 6 7 Not at all
to Each Other Similar to Each Other

11. Given a group of 100 ANTI-ABORTION people selected at random, estimate the number of individuals who might be considered UNUSUAL or OUT-OF-THE-ORDINARY for that group.

12. Given a group of 100 ANTI-ABORTION people selected at random, estimate the number of individuals who might be considered UNUSUAL or OUT-OF-THE-ORDINARY for that group.

13. Most groups are made up of more than one type of person. For example, the group RACQUETBALL PLAYERS is made up of jocks, young executives, housewives and so on. Please take a moment and think about all the different types of people who make up the group of people who are ANTI-ABORTION and all the different types of people who make up the group of people who are PRO-CHOICE ABORTION. Please list as many types as you can for the PRO-CHOICE ABORTION and the ANTI-ABORTION groups.

PRO-CHOICE ABORTION

ANTI-ABORTION

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15. How A

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14. How CLOSE do you feel toward people who are PRO-CHOICE ABORTION?

Very 1	2	3	4	5	6	7	Not at
Close							all Close

15. How CLOSE do you feel toward people who are ANTI-ABORTION?

Very 1	2	3	4	5	6	7	Not at
Close							all Close

16. How ATTRACTED are you toward people who are PRO-CHOICE ABORTION?

Very 1	2	3	4	5	6	7	Not at
Attracted							Attracted

15. How ATTRACTED are you toward people who are ANTI-ABORTION?

Very 1	2	3	4	5	6	7	Not at
Attracted							Attracted

16. How much would you LIKE TO MEET people who are PRO-CHOICE ABORTION?

Very 1	2	3	4	5	6	7	Not at
Much							All

17. How much would you LIKE TO MEET people who are ANTI-ABORTION?

Very 1	2	3	4	5	6	7	Not at
Much							All

18. How much would you LIKE TO WORK WITH people who are PRO-CHOICE ABORTION?

Very 1	2	3	4	5	6	7	Not at
Much							All

19. How much would you LIKE TO WORK WITH people who are ANTI-ABORTION?

Very 1	2	3	4	5	6	7	Not at
Much							All

20. Sup
had
the

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and
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of a

20. Suppose that 100 ANTI-ABORTION people were gathered in a room and had no previous contact with each other. How much do you think these persons would like each other?

Very 1 2 3 4 5 6 7 Not at
Much All

20. Suppose that 100 PRO-CHOICE ABORTION people were gathered in a room and had no previous contact with each other. How much do you think these persons would like each other?

Very 1 2 3 4 5 6 7 Not at
Much All

21. Are you PRO-CHOICE ABORTION, ANTI-ABORTION, or NEUTRAL on the issue of abortion? (circle one)

PRO-CHOICE ABORTION

ANTI-ABORTION

NEUTRAL ON ABORTION

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SCALE IT

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Liberal-

Which

CODE NUMBER_____

SEX_____

Instructions: This part of the experiment asks you to consider two groups of individuals: those people who are in favor of capital punishment (pro-capital punishment) and those people who are opposed to capital punishment (anti-capital punishment). For each of the scale items below, write in the number that represents the response closest to your feelings and impressions about the two attitudinal groups. The scale values are on the following page. USE WHOLE NUMBERS ONLY PLEASE. (No fractions).

SCALE ITEM	PRO-CAPTIAL PUNISHMENT	ANTI-CAPITAL PUNISHMENT
Friendly-Hostile	-----	-----
Helpful-Disruptive	-----	-----
Stupid-Intelligent	-----	-----
Passive-Forceful	-----	-----
Very Likeable-Difficult to Like	-----	-----
Independent-Conforming	-----	-----
Cooperative-Uncooperative	-----	-----
Peaceful-Aggressive	-----	-----
Liberal-Conservative	-----	-----

Which attitudinal group would you prefer to have as your friends?
(Circle One)

Pro-Capital Punishment

Anti-Capital Punishment

Neither Group

Friend

1

Helpfu

1

Stupid

1

Passiv

1

Very
Likeab

1

Indepe

1

Cooper

1

Peacef

1

Libera

1

GROUP IMPRESSIONS SCALE

Friendly	Neither			Hostile		
1	2	3	4	5	6	7

Helpful	Neither			Disruptive		
1	2	3	4	5	6	7

Stupid	Neither			Intelligent		
1	2	3	4	5	6	7

Passive	Neither			Forceful		
1	2	3	4	5	6	7

Very Likeable	Neither			Difficult To Like		
1	2	3	4	5	6	7

Independent	Neither			Conforming		
1	2	3	4	5	6	7

Cooperative	Neither			Uncooperative		
1	2	3	4	5	6	7

Peaceful	Neither			Aggressive		
1	2	3	4	5	6	7

Liberal	Neither			Conservative		
1	2	3	4	5	6	7

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b) WH

c) WH
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Please answer the following questions to the best of your ability.
There are no right or wrong answers.

1. Are you pro-capital punishment, anti-capital punishment, or neutral on the issue of capital punishment?
2. Are you pro-marijuana decriminalization, anti-marijuana decriminalization, or neutral on the issue of marijuana decriminalization?
3. Are you pro-gun control, anti-gun control, or neutral on the issue of gun control?
4. Suppose that you are about to meet two people for the very first time. The following information has been given to you.

PERSON A: IS PRO-CAPITAL PUNISHMENT (in favor of capital punishment)

PERSON B: IS ANTI-CAPITAL PUNISHMENT (against capital punishment)

You are told that you can obtain more information about these two people and that you must CHOOSE which information you will receive. The following items suggest different things about PERSON A and PERSON B. Rank the items from "1" to "4", from the information that you would like to see MOST ("1"), to the information you would like to see LEAST ("4").

_____ PERSON A is Pro-marijuana decriminalization

_____ PERSON B is Pro-marijuana decriminalization

_____ PERSON A is Anti-marijuana decriminalization

_____ PERSON B is Anti-marijuana decriminalization

5. a) What percent of the population is Pro-Capital Punishment? _____%
- b) What percent of the population is Anti-Capital Punishment? _____%
- c) What percent of the population is neutral on the issue of Capital Punishment? _____%

(Total for 5a, 5b, and
5c should be 100%)

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11. Wh

6. Suppose that you are meeting another person for the very first time. You have been told that this person is opposed to capital punishment under any circumstances. What is the probability that this person:

(To indicate probabilities assume that 0 means "not at all likely," 50 means "unsure" and 100 means "highly likely." You may select any value between 0 and 100 for each issue.)

- a) Is in favor of gun control? -----
- b) Is in favor of marijuana decriminalization? -----
- c) Is against increased defense spending? -----
- d) Is against school integration? -----

7. Do you believe that your experimenter is Pro-capital punishment, Anti-capital punishment, Neutral on capital punishment or don't you know?
8. When you sorted the cards, did you sort them in accordance with the views of someone who was Pro-Capital punishment, Anti-Capital punishment, or don't you remember?
9. Was there any part of today's research that you found confusing or did not understand?
10. What do you think is the purpose of today's research? Please be specific.
11. Why did you participate in today's research?

Experiments
placed in

STATEMENT

1011

1021

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1101

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Dependent Measure Checkoff

Experimenter: Check off only those statements that the subject placed in the target's AGREE pile.

STATEMENT NUMBER	STATEMENT	AGREE (CHECK)
1011	Institution of the death penalty would decrease violent crime.	-----
1021	The death penalty is easier on the convict than a life in prison.	-----
1031	The death penalty would reduce the overcrowding in our prisons.	-----
1041	Convicts are a threat to society and should be destroyed.	-----
1051	The death penalty is an effective deterrent to crime.	-----
1061	Capital punishment will reduce the waste of taxpayers' money on criminals who can never be reformed.	-----
1071	An eye for an eye, a tooth for a tooth; if someone commits murder, he deserves the same punishment.	-----
1081	Capital punishment will make the safer for innocent people.	-----
1091	In any society, the bad must die for the sake of the good.	-----
1101	The death penalty would reduce the number of repeat offenders.	-----
1012	No one has the right to take a person's life, no matter what he has done.	-----
1022	Institution of the death penalty will increase the possibility of destroying an innocent person.	-----
1032	Punishment should rehabilitate criminals, not hurt them.	-----

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1042	Capital punishment is barbaric and inhumane.	-----
1052	Where the death penalty is concerned two wrongs don't make a right.	-----
1062	Capital punishment is a cruel and unusual punishment.	-----
1072	Capital punishment does not deter crime.	-----
1082	Institution of the death penalty will tie up the legal system; there will be more plea-bargaining and appealing of cases.	-----
1092	Institution of the death penalty have severe psychological effects on the accused.	-----
1102	Capital punishment will be unjustly enforced on those people who cannot afford a good lawyer.	-----
2011	Penalties for the use and possession of marijuana should be reduced.	-----
2021	Marijuana is no more dangerous than than tobacco.	-----
2031	Reducing the penalties for marijuana would allow governmental agencies to spend more time on things that matter.	-----
2041	Severe penalties for the possession of marijuana do not reduce its use.	-----
2051	Decriminalization of marijuana will increase the safety of its use.	-----
2061	Reducing the penalties for marijuana possession will lower the crime rate.	-----
2071	Marijuana decriminalization will make for a more healthy and open society.	-----
2081	Reducing the penalties for marijuana will take the "thrill" out of it and thereby reduce its use.	-----
2091	Marijuana is less harmful than alcohol.	-----

2101

2012

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2101	It should be up to the individual to decide whether or not to use marijuana.	-----
2012	Legalization of marijuana will lead to increased use of harder drugs.	-----
2022	Marijuana should remain illegal.	-----
2032	Marijuana is a dangerous drug that corrupts the youth of America.	-----
2042	If marijuana were decriminalized, it would be easier for minors to get.	-----
2052	Marijuana is psychologically addictive.	-----
2062	People are not aware of the dangers of marijuana and should be protected from it.	-----
2072	Marijuana decriminalization will lead to an increase in traffic fatalities.	-----
2082	Decriminalization of marijuana will lead to an increase in its use.	-----
2092	Reducing the penalties for marijuana will increase the frequency of lung cancer, heart disease and other health problems.	-----
2102	Decriminalization of marijuana will lead to an increase in the infertility rate.	-----
3012	If guns are outlawed, only outlaws will have guns.	-----
3022	If everyone owned a handgun, there would be less crime.	-----
3032	Anyone should be able to purchase a handgun.	-----
3042	Without guns, private citizens cannot protect themselves and their families.	-----
3052	Gun control will make law enforcement more difficult.	-----

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3062	Americans have a constitutional right_____	
	to bear arms.	
3072	Guns don't kill people; people kill _____	
	people.	
3082	Everyone should know how to use a gun_____	
	for the good of their country.	
3092	If handguns were outlawed, there _____	
	would be an increase in the use of	
	other deadly weapons.	
3102	Gun control would not reduce the _____	
	number of guns used by criminals.	
3011	Strict gun control would reduce _____	
	crime in our cities.	
3021	The presence of guns brings out _____	
	man's violent nature.	
3031	The right to own a handgun should _____	
	be reserved for the police and the	
	military.	
3041	Penalties for the possession of _____	
	handguns should be increased.	
3051	The outlawing of handguns would _____	
	reduce the crime rate.	
3061	Strict gun control would prevent _____	
	fatal accidents from taking place.	
3071	Making handguns illegal would _____	
	reduce the number of homicides.	
3081	Gun control would decrease the _____	
	number of home and store robberies.	
3091	Without gun control, guns would be _____	
	too available in the heat of	
	family arguments.	
3101	Without gun control, most people _____	
	who legally obtain guns would not	
	know how to use them properly.	
4012	The military draft will increase _____	
	the likelihood of international war.	
4022	No government has the right to _____	
	force people to serve in the military.	

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- 4032 The military forces people to kill -----
 against their will.
- 4042 There is no such thing as a just war.-----
- 4052 One can be a conscientious objector -----
 and a good citizen at the same time.
- 4011 Anyone who is unwilling to serve in -----
 the military should be forced to
 leave the country.
- 4021 The military draft is the major step -----
 toward rebuilding our national security.
- 4031 The government must reserve the right-----
 to draft all eligible citizens.
- 4041 Four years of military service builds-----
 a person's character.
- 4051 The government should use any measure-----
 necessary to ensure that all eligible
 men register for the draft.
- 5011 The drinking age should be lowered -----
 to age 18.
- 5021 Since 18 year olds have the -----
 responsibility to pay taxes, they
 should also have the right to drink
 alcoholic beverages.
- 5031 If the drinking age remains at 21, -----
 18 year olds will still get alcohol
 through illegal means.
- 5041 Raising the drinking age to 21 does -----
 not make the highways safer for anyone.
- 5051 Age should not determine whether -----
 someone is responsible enough to
 drink alcoholic beverages; therefore,
 age 21 is an arbitrary limit.
- 5012 Simply because an 18 year old pays -----
 taxes does not entitle the person
 to drink alcohol.
- 5022 By raising the drinking age to 21, -----
 the number of teenagers who drink
 has dropped dramatically.

- 5032 A higher drinking age has reduced -----
 violence among our nation's teenagers.
- 5042 Increasing the drinking age to 21 -----
 will help reduce the amount of
 alcoholism among our youth.
- 5052 Increasing the drinking age to 21 -----
 will help college students to
 raise their grades.

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