THE EFFECT OF CHOICE BETWEEN MESSAGES ON ATTITUDE CHANGE

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ABSTRACT

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by Donald E. Wells

Public opinion research has shown that people frequently choose reading material and broadcast programs they expect to like and with which they will agree. Dissonance theory and research suggest that the reverse may also hold; i.e., people will like what they choose, perhaps independently of choosing what they like. This study tested a derivation of this assumption; namely, that the persuasive effect of messages increases as people exercise increasing degrees of choice in attending to them. The study also tested the assumption that compliance in reading, following denial of choice between messages, motivates greater choice than simple no-choice situations.

Three hundred seventeen college undergraduates, meeting in two large classes, were exposed to a persuasive message under five conditions of choice:

One-Message No Choice - presentation of a single message with request to read it;

Two-Message Choice - presentation of two messages with request to select one to read;

Two-Message Stressed Choice - presentation of two messages with request to select one to read, plus inductions to increase the overtness and salience of the choice;

Two-Message Challenged Choice - presentation of two messages as in the preceding condition but with the addition of a challenge to the appropriateness of the choice;

Two-Message Denied Choice - presentation of two messages with request to read a specified one.

A pretest to assess attitudes toward two civil-defense-armament concepts was given four weeks before treatment administration; a posttest reassessing these attitudes was completed immediately after exposure to the message. Attitude change on the two concepts formed the basic dependent variable. The posttest also assessed perceptions of the degree of choice given in the treatments, attitudes toward the message source, predictions by subjects of the source's attitudes toward the concepts, level and kind of interest in reading additional material about the concepts, and willingness to participate in future research.

Analysis of variance supported the prediction that more choice in reading would be perceived by subjects in the three choice than in the two no choice treatments. It was hypothesized that attitude change would be greater in the Two-Message Challenged Choice than in the Two-Message Stressed Choice treatment, which would be greater than in the Two-Message Choice treatment, which would be greater than in the One-Message No Choice treatment. This was not confirmed, i.e., the four treatment groups did not differ significantly. The hypothesis that attitude change would be greater in the Two-Message Denied Choice than in the One-Message No Choice treatment was partially supported. No relationships between the experimental treatments and other dependent measures were found.

Correlation coefficients did not confirm the expected relationship between level of perceived choice and attitude change. Informal evidence suggested that operation of other variables invalidated the perceived choice measure; choice between cooperating and not cooperating in the study, varying feelings about the importance of the reading task, and varying feelings about the importance of the choice between messages. The failure of the basic hypothesis was attributed to the use of highly similar messages (making the choice between them easy), and to interference by the choice to cooperate or not cooperate in the study. The former could result in reduced motivation to change in the choice treatment groups. The latter, for those subjects who did not wish to read about the topics of the message, could have led to a motivating commitment to unpleasant behavior for those who complied. This may have occurred more often in the no choice treatments; hence more attitude change may have resulted than would otherwise have been the case.

The relative success of the Two-Message Denied Choice treatment provides support for the theoretic hypothesis that compliance following denial of choice is a form of commitment to discrepant behavior which leads to change in attitude toward aspects of the behavior.

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CHAPTER I

INTRODUCTION

In experimental attitude change studies, subjects usually have little choice about what they read or hear. While attributes of the experimental message or conditions of exposure may vary from group to group, for any given subject there is only one message about which he need be concerned.

In the day-to-day reading and listening situation, however, people often are not dealing with one message alone but rather with an array of messages from which one or more are chosen to be read or heard. Public opinion research (e.g., Lazarsfeld, Berelson, & Gaudet, 1948) indicates that people frequently tend to choose those messages they think they will like and with which they will agree. Research to be cited in the following section suggests that the reverse may also hold; i.e., that people will like what they choose. The question is whether the persuasive effect of a message increases as the individual exercises increasing degrees of choice in attending to it. The basic hypothesis of this research is that it does.

The question has interesting operational implications. In agricultural extension programs, for example, editors ask whether it is better to distribute publications to everyone attending a meeting, or to provide people a means of requesting that the publications be sent to them later. Should stacks of a bulletin be made available at an

exhibit booth so that people may take them as they wish, or should a sample copy and a "sign-up" sheet be used instead? In a county extension agent's office, should an array of publications be made available on a "take what you want" basis, or should it be arranged so that copies to take out of the office would have to be requested? The answer, of course, is relative to the specific goals of the publication's distributor. However, if what is wanted is serious attention to the publication and maximum acceptance of its message, the choice hypothesis suggests that some effort to secure it by providing a choice is desirable.

There is more than just effect involved. The numbers of a publication that will go into circulation depend in part on what principles of distribution the editor uses. The principle suggested by the choice hypothesis would probably reduce the numbers needed, yet the total effect quite possibly would be increased. A recent civil defense communication is a case in point. Some 35 million copies of a booklet, Fallout Protection: What to Know and Do About Nuclear Attack, were printed and circulated throughout the country by means of various "saturation" distribution methods. Recent opinion studies by Berlo (1963) and MacLean (1963) strongly suggest that readership of the publication has been small and the effect on attitude minimal. The choice hypothesis raises the question of whether equal or better results would have accrued from request distribution of far fewer copies - at a much lower cost.

There are other areas where the choice hypothesis is relevant to communication decision making. Teachers, in making term paper or theme assignments, may either designate specific topics or allow the student to select his own. College faculties, in developing curriculum requirements, may specify many of the courses that must be taken, or they

may allow the student considerable freedom to select from among alternatives. Advertisers, in making broadcast time buying plans for a given market area, could buy a program on all stations in the area at the same time, or different programs on different stations at different times.

The choice hypothesis may also have implications for the one newspaper community or the single television station market. In spite of the fact that the newspaper may be doing a superior editorial job, it is possible that it is less liked and less effective and influential than its quality warrants simply because its readers subconsciously resent their lack of choice in the selection of a paper to read. The single television station, because of access to all networks, may be able to do a better job of programming than a station in a competitive market, yet be less liked (and its programs less liked) than would be the case under conditions of greater choice.

Choice has been a variable in several kinds of studies. There have been experiments showing the effects of public commitment to discrepant positions, of agreement to attend to known discrepant messages, and of accidental exposure to discrepant information while engaging in more or less disagreeable behavior. These studies do not make clear what the attitudinal consequences of choice between messages or message channels would be, nor do they make fully clear why and under what conditions choice makes any difference at all. They also do not make clear what happens when choice is denied.

The questionable theoretic status of choice is pointed up by Cohen (1960) in a discussion of dissonance theory:

> "It is often not clear from the theory and experimental work just what creates the basic state of tension or dissonance. Is it, for example, the discrepancy between a prior attitude and an undesirable behavior which creates dissonance or the discrepancy between a prior attitude and the individual's feelings of responsibility for having chosen to do something contrary to his cognitions? These issues raise the question of whether it is necessary to extend the conceptualization of dissonance into the sphere of conflicts within the individual as his self-feelings become engaged after having initiated behavior which is contrary to his cognitions (p.313)."

The research reported here compares the effects of five kinds and degrees of choice on changes in attitude toward two topics of substantial current national interest. The five conditions are (I) presentation of a single message with request to read it, (II) presentation of two messages with request to select one to read, (III) presentation of two messages as in Condition II, plus statements to increase the overtness and salience of the choice, (IV) presentation of two messages as in Condition III but with the addition of a challenge to the appropriateness of the choice, and (V) presentation of two messages with request to read a specified one. The major hypothesis of the study is that increased degrees of choice will result in increased attitude change (attitude change in Condition IV > Condition III > Condition II > Condition I). A secondary hypothesis predicts that denial of choice will result in greater change than lack of choice (Condition V > Condition I). The research also probes the possible effects of these conditions on attitude toward message sources, perceptions of sources' attitudes toward the concepts, and interest in reading additional material reflecting various attitudes toward the concepts.

Previous Research

Much of the research directly relevant to the question of choice or commitment has been couched in terms of Festinger's (1957) theory of cognitive dissonance. He conceives of dissonance as the existence of nonfitting relations among cognitions, which are described as "any knowledge, opinion, or belief about the environment, about oneself, or about one's behavior (p.3)." Two basic hypotheses are offered:

> "The existence of dissonance, being psychologically uncomfortable, will motivate the person to try to reduce the dissonance and achieve consonance."
>
> "When dissonance is present, in addition to trying to reduce it, the person will actively avoid situations and information which would likely increase the dissonance (p.3)."

More specifically for concerns with choice and commitment, the theory is said to imply that "a person who chooses to behave in a way he would ordinarily avoid experiences dissonance; the more unpleasant the induced behavior, the greater the magnitude of dissonance and the greater the consequent attitude change in order to reduce it (Cohen, 1960, p.305)." Brehm and Cohen (1959a) have put it this way: "An approximate statement of the fundamental hypothesis as it applies to the choice situation is that the magnitude of psychological dissonance is a direct function of what one has to give up compared to what one obtains (p.373)."

An immediate derivative is that the amount of compulsion involved in behaving at variance with private opinions is negatively related to change in those opinions. Cohen, Brehm, & Fleming (1958) report evidence supporting the idea that taking a public stand discrepant from one's opinions results in some shift of the opinions in the direction of the

discrepant behavior. Their subjects were asked to write essays opposing their point of view on an issue. When the reasons for taking the stand were compelling, the shift was small or non-existent; when the reasons were not so compelling the shift was larger. Similar results were obtained by Festinger and Carlsmith (1959) using varying amounts of money as inducements to tell others that a boring experience had been enjoyable, and by Cohen (reported in Brehm & Cohen, 1962) offering money for an essay in opposition to subjects' opinions.

Reinterpretation of the results of three studies by Smith (1961) provides some further evidence supporting the hypothesis. He tested various procedures to induce military reservists to try "strange" foods and to move their attitudes about the foods in a positive direction. He found that a "cool, formal" persuader brought about greater attitude change than a "warm, friendly" one; that a "respected" sergeant could persuade most of the men to try the foods but induce relatively little attitude change; and that a condition where the men were given a brief rationale for trying the foods and then left to their own devices was consistently one of the most effective.

Two experiments have investigated the effect on attitude change of a fait accompli; a chance event which might have led to different behavior had it been predictable at the choice point (unfortunately, no check of this was made in either study). Brehm and Cohen (1959b) posed to introductory psychology students the experimental task of copying random numbers for three hours. Half were given information designed to make them feel they could be excused if they had good reason; the other half were not. A high relative deprivation condition was

posed for half of each group after they had committed themselves to perform the task - they were told that most subjects would receive $10 for the task but that a few would get nothing and they were one of the few. For a low relative deprivation condition the amount specified was $1. Attitudes toward taking part in the "research" were assessed after inductions but before any work was done. Subjects were also questioned as to how much choice they felt they had in taking part in the project.

Contrary to prediction, the reports of felt choice did not relate to having received or not received information about being excused. The researchers, therefore, redivided their subjects into high and low choice groups based on the felt choice reports. Although the results of five replications of the basic design were not wholly consistent, the data generally supported the hypothesis of interaction between degree of perceived choice and degree of relative deprivation. The most favorable attitudes toward taking part in the research were found in the high-high and low-low conditions.

These data are difficult to interpret for several reasons. For one thing, there is no evidence that either variable alone had any effect at all. Secondly, the study involves only post-inducement attitude scores - no pretests were made - and therefore provides only inferential information about attitude change. Thirdly, the results do not accord perfectly with dissonance theory predictions in that maximum favorability of attitude seems to accrue from both the maximum and minimum dissonance arousing conditions. No tenable explanation has been offered for this; nevertheless, the phenomenon appears in several studies.

Somewhat more clearcut results were obtained in a subsequent experiment by Brehm (1959). He secured ratings of liking for 34 vegetables from 8th grade students and three weeks later offered them two phonograph records or two movie tickets of their choice if they would eat some of a heartily disliked vegetable. Subjects were free to refuse if they chose to do so. Half of them were told when nearly finished eating that their parents would be informed in due course of their behavior. Favorable change in attitude was significantly higher for this group than for the other group. Apparently, knowing that parents would know represented a cognition against the choice, and increased the need to justify being persuaded by the promise of a small reward to do something disliked.

A limitation of both fait accompli studies is that the chance deprivation only follows commitments to engage in discrepant behavior. A fuller understanding of the variable would come from checking its effects when it follows commitments to behavior which seem at the time to be consistent with nearly all relevant cognitions.

A study by Davis and Jones (1960) offers support for the idea that chosen discrepant behavior has to be perceived as relatively irrevocable in order to produce more attitude change than unchosen discrepant behavior. They had subjects read to an unseen person an unfavorable evaluation of him. Half the subjects were "assigned" this task; half were "persuaded" on grounds that it would help the research being done. Half of each group was led to believe that immediately following the reading they would meet the recipient of the negative evaluation and be able to explain to him why it had been given; the rest of the subjects were told that there would be no opportunity to retract any of their statements.

The amount of change in attitude toward the message recipient was significantly greater in a negative direction (as predicted) for those subjects in the choice-irrevocable condition than for subjects in the other three conditions (where, as in the Brehm and Cohen study, slightly more change was found in the least dissonance condition).

Interestingly, subjects in the irrevocable conditions were significantly less interested in meeting the message recipient than were subjects in the revocable conditions. Also, those subjects in the revocable conditions who said they thought the recipient would be suspicious of the sincerity or source of the evaluation changed significantly more than subjects who did not. No such relationship was found in the irrevocable conditions. The implication is that adequacy of performance of the discrepant behavior is a variable under certain circumstances.

The question of the effect of visibility or publicness of discrepant behavior and commitment does not yet seem well resolved by research. If we assume that awareness of others' knowledge of one's discrepant behavior is a cognition against the behavior, it follows from dissonance theory that attitude change would be increased by publicness of the discrepant behavior or commitment.

The well-known Lewin (1943) studies on group decision would seem to support this. However, Miller (1951) suggests that the public decision variable was seriously confounded in this research, since the "investigators found that a group of housewives who participated in a discussion, made a public decision by raising their hands, and were told that there would be a follow-up study to check on what they did were much more likely to serve the nonpreferred meat than another group

who listened to a lecture without making a public decision and without being told to expect a follow-up study."

A study by Bennett (1955) fails to verify the Lewin result and dissonance prediction. The major dependent variables of the research were attitude toward and willingness to volunteer for participation in psychological and sociological experiments. Students were approached in intact class groups and asked to express their willingness to volunteer. There were three conditions: anonymous decision, where subjects were asked to state their willingness on a blank paper without signing it; partially anonymous decision, where the group leader asked for a show of hands of those willing to volunteer; and public commitment, where a show of hands was asked followed by systematic public securing of names of those who complied. The proportion in each group to indicate willingness was very similar.

Several days later, a letter was sent to all subjects inviting them to appear at a specified place to have their names entered on a master list of volunteers. A significantly larger proportion of the anonymous deciders reported. There were no volunteers from among those who did not express, at the time of the group meetings, willingness to do so. Those who volunteered tended to think that a high proportion of their group had done so. Of those who had expressed a willingness to volunteer, and then did not, a greater proportion of those in the partially anonymous decision group than in the public decision group denied having ever expressed willingness to volunteer.

A control group was exposed to the same conditions as the other treatment groups except that no request for expression of willingness

to volunteer was made. A lower proportion of these than of the other groups reported to have their names entered in the master volunteer file.

A seemingly contradictory finding is reported by Cohen, Brehm, & Latané (1959). Replicating an earlier study by Festinger (1957) on selective exposure to information stimulated by varying losses in a "low-stake" card game, they varied the degree of publicity attached to the subjects' performance. The dependent measure was the amount of time, after the twelfth hand in the game, spent looking at a graph which purported to show the true probability of winning. Heavy losers were expected to avoid the graph, since they would expect it to show that they had made an error in their original choice of sides in the game, while light losers and modest winners were expected to spend time looking at the graph in the expectation that it would confirm their behavior. The data generally confirm this; more importantly, they show that tendencies toward selective exposure and avoidance were more pronounced under public than private performance conditions.

The possible contradiction between this and the Bennett study may not be such at all. Bennett's variable was publicness of commitment, while the "gambling" study dealt with publicness of the consequences of commitment (the gamblers began the game by choosing which side they wanted to play on). Even more important is the fact that the Bennett study did not involve discrepant behavior as did the other studies so far reported here. The implication is that visibility or publicness of commitment and behavior is a variable only when the appropriateness of the commitment and behavior is somehow in question.

The finding in Bennett's study that commitment is a key variable is supported by a study in which attitudes measured following commitment but before engaging in discrepant behavior were found to be highly similar to attitudes measured after the behavior had been performed. Rabbie, Brehm, & Cohen (1959), on pretext of making a survey for the Yale administration, asked undergraduates to write an essay against their own point of view and advocating elimination of intercollegiate athletic competition at their school. They were told that the administration was seriously concerned about this and considering such a move, and that they were also worried about the stress on development of the natural sciences and thinking of requiring study of Latin and Greek for all students. The best way to get all relevant arguments on both sides of such issues, the students were told, was to have a person write on only one side of the question -- since enough arguments in favor of retaining athletic competition had been secured, they could be of most help if they would argue against.

A high justification group was told additionally that their help would contribute to a study of this means of getting arguments - useful in settling labor disputes and in international affairs - and that their help was essential to the experimenter's completing his dissertation. All subjects were asked to choose between sheets of paper labelled "strongly against athletic competition" and "strongly for." Half the subjects now filled out the attitude measure, then wrote the essay, and finally answered some additional questions. The other half wrote the essay and then filled out the attitude measure and questionnaire.

Clearly, the issue was highly salient for many of the subjects, since 46 percent of those contacted refused to write in opposition to

their beliefs. Unfortunately, no information on them is reported so no comparisons with those who complied are possible.

The authors report that the justification inducements were successful, as indexed by a significant difference in response to a question on the extent to which the subject felt obliged to write on the side of the issue suggested by the experimenter. No interpretable data are reported in support of this conclusion.

In general, there was less attitude change in the high justification group than in the low. The mean attitude changes measured before writing corresponded quite closely with those measured after; writing appeared to neither inhibit nor enhance change (similar findings have been reported by Brock and Blackwood, 1962). On the other hand, there was some tendency for those who wrote the strongest essays (as indexed by number of arguments presented) to change the least. The attitude data on the Latin-Greek issue, on which no commitment was asked, surprisingly showed changes strongly parallel to the changes induced on the athletic issue.

It is tempting to suggest personality variables to explain the negative relationship between extent of verbalization and attitude change. The commitment the subjects were asked to make was to spell out the arguments that could be used against their own position. One might postulate that those most secure in their positions were least threatened by the task, hence had more freedom to verbalize. It might also be the case that those who felt free to generate such contrary arguments had already given the question considerable thought and were not swayed by counter arguments they had already considered and rejected. The "adequacy of performance" variable, noted in discussion of the Davis and Jones (1960) study, is another explanatory possibility.

In contrast to this study, an experiment by Cohen, Terry, & Jones (1959) involved exposing subjects to contrary arguments written by the experimenters. They first determined the extent of agreement or disagreement of college freshmen on "the advisability of young men marrying before the age of 23." Half the subjects were then told that contrary information would be read to them; the other half were asked three times if they wished to hear the opposing remarks (only three refused - they were dropped from the analysis). After the messages were read, subjects again completed the opinion scale, plus a scale aimed at determining how much choice they felt they had in exposing themselves to the counter-propaganda.

Based on responses to this scale, the two conditions yielded a highly significant difference between perceptions of choice. With low choice, there was greater resistance to the counter-arguments; the greater the discrepancy between original position and that advocated by the message, the less the attitude change. With high choice, on the other hand, attitude change increased as discrepancy increased. Although differences between the four cells (2 discrepancy levels x 2 choice levels) were small, the interaction between the two variables was significant. Highest average change occurred in the high choice-high discrepancy condition; lowest in the low choice-high discrepancy condition. The mean changes in the low-low and high-low were similar but, as noted in previous studies, higher in the low-low. No measures were taken of changes in perceptions of the experimenters or whomever the subjects attributed as the source of the message.

Presumably, this study provided the subjects with no particular reason for listening other than the request of the experimenter. This

variable was manipulated in studies by Cohen (1959) and by Allyn and Festinger (1961). Following an attitude pretest three weeks prior to treatments, Cohen invited his subjects to take part in a general survey. They were college undergraduates, further selected so all were opposed to the idea of foster homes for juvenile delinquents as an effective means of curbing delinquency. They were given two minutes to read a message known to be contrary to their own point of view on the subject; half were told that the message was rather easy to grasp and no great effort would be needed while the other half were informed that they would have to expend a great deal of effort to grasp the essentials since the material was difficult, subtle, and complex. (No evidence is presented as to the "objective" complexity and difficulty of the message.) The posttest assessed attitude, perceived effort in reading, and level of learning and retention by means of a six-item multiple choice instrument.

The high effort group reported expending more effort than the low effort group, but the means are not very different and do not reach acceptable levels of significance. Highs generally used the full two minutes allotted while lows stopped an average of 16 seconds sooner. There were significant overall attitude changes, but no reliable differences between conditions in learning. A highly significant interaction between discrepancy and effort was found, with most change occurring in the high effort-high discrepancy group. However, just as in the previously reported experiments, the second highest change occurred in the low-low group, with the other two conditions being highly similar to each other and another scale point lower.

An experiment testing the effect of "reason for listening" on both attitudes toward the speaker and the concept of his talk was con-

ducted by Allyn and Festinger (1961). Using high school students who were generally in favor of allowing teenagers to drive with few restrictions, the experimenters arranged a speech from an "expert" strongly advocating stringent controls of such behavior. Half the students were told that the experimenter was interested in studying their attitudes toward teenage driving, that the speaker would advocate strict control, and that they should pay close attention since they would be asked their own opinions when the speaker was finished. The other half were informed that the research was to study how audiences form impressions of a speaker so they should pay close attention in order to give their opinions of his personality as soon as he finished speaking; they were not told his topic or position in advance.

Both groups changed their opinions on teenage driving in the direction advocated by the speaker; those oriented to the speaker's personality changed somewhat more than the other group. One-fifth of the opinion orientation and two-fifths of the personality orientation group changed "appreciably" toward the speaker's position - a statistically significant difference. Eighty percent of the former and 61 percent of the latter group thought the speaker gave a biased talk (also significantly different). It's as though the student either changed toward agreement with the speaker or charged him with bias - in both conditions the change and bias percentages total close to 100. The lower incidence of bias reported by the personality orientation group possibly is attributable to the inducement instructions, which could have implicitly aroused expectations of expertness.

When the data were analyzed on the basis of extremity of original opinion, the susceptibility of the personality orientation group was

much more noticeable among those holding extreme initial opinions. Among those with moderate opinions, however, there was relatively little change in either group.

The influence of prior set on the effects of communicated messages has been investigated in still another setting. Kerrick and McMillan (1961) put 44 journalism students through a "typical attitude change experiment - pretest of attitude, exposure to experimental news stories, posttest of attitudes." One group was warned that the purpose was to determine whether the stories changed their attitudes, while the other group was given a "masked" purpose for reading. The warned group showed much less tendency to change their attitudes than the masked purpose group - and when they did change, they were more likely to do so in the opposite direction. As in the Allyn and Festinger study, there is no way to tell whether the warning led to resistance to the stories or simply affected scale marking behavior; however, the differential effects were noticeable only for evaluative change. Non-evaluative change was not different for the two groups.

Most of the studies reported here have dealt with varying degrees of commitment to several kinds of discrepant or disagreeable behavior. The next three studies to be discussed deal with choice in a different context - the selection between generally desirable objects as reward for helping in "consumer research." Brehm's (1956) college women subjects rated eight $15-$30 household articles on a continuous 8-point scale as to their desirability (meaning attractiveness, quality, and personal need for it). The subject was then to choose one of two selected articles as payment; one article she had rated highly desirable while the other she had rated less so by a predetermined amount (1 1/2

scale points or less = small discrepancy condition; 2 scale points or more = large discrepancy condition). Control subjects were simply given a highly desirably rated item from the eight. All subjects were asked to read four research reports evaluating four of the articles, each listing two or three good points and two or three bad ones. For half the subjects the choice articles were covered in the reports (information treatment); for half they were not (no information treatment). All control subjects received a report evaluating the article they had been given, plus reports on three other items. Subjects then re-rated all eight articles.

Forty-eight of 225 subjects chose the lower rated object of the pair presented, and were not used in the analysis. Change scores were computed by summing the increase in desirability of the chosen article and the decrease in desirability of the unchosen. In general, more change resulted from small discrepancy choices than from large, and from the no-information treatment than from the information. Of the four cells (two discrepancy conditions x two information treatments), only the large discrepancy-information combination failed to produce significant change. Devaluation of the unchosen article occurred more often in the small discrepancy condition than in the large. Control subjects' ratings of the article they received as a gift remained unchanged.

Brehm had expected the information, even though some of it was counter to the choice made, to facilitate reduction of dissonance and to show up in the form of greater change in the information conditions. However, subjects were told that after reading they would be asked what they thought was good and bad about the evaluated articles and what

comments would be good for advertising them. It may well be that selective perception of the reports helped reduce ambiguity, particularly in the large discrepancy condition, and hence led to reinforcement of the choice without the necessity of enhancing the chosen alternative and depreciating the unchosen to justify the action taken. The lack of any change at all in the gift condition is interesting - would this have been the case had the gift condition exactly duplicated the choice condition; i.e., two articles selected from the original eight and, after some thought, selection by the experimenter of one of these to give to the subject? One additionally wonders why one-fifth of the subjects chose the lower rated of the articles with which they were confronted, and whether this happened in both the small and large discrepancy conditions.

A second experiment involving re-evaluation of alternatives following choice was conducted by Brehm and Cohen (1959a). They asked 6th grade children to rate 16 toys on the basis of liking and then, a week later, to choose one from a selected group as reward for helping in the research. Half chose from among two toys; half from among four. Half of each chose from among highly similar toys (in terms of how they would be used); the other half from highly dissimilar. They then re-rated all 16 toys.

Change scores were computed for both chosen and unchosen alternatives and then summed from each subject. In the four-alternative condition, the two most liked alternates (on pretest ratings) were used. Significantly more change was found in the four-alternative than the two-alternative condition, and in the dissimilar as opposed to the similar condition. There was no detectable interaction between the two variables, possibly the result of a "ceiling" effect, due to relatively

high ratings of all the toys, which might prevent it from being detected. In general, the chosen toy became more liked and the unchosen toy less. Curiously, in the four-alternative condition, liking for the third and fourth alternative tended to increase, with no consistent differences due to similarity or dissimilarity.

Deutsch, Krauss, & Rosenau (1962) recently completed a study based on the hypothesis that "a chooser will experience postdecisional dissonance only when he perceives his choice in a given situation to be inconsistent with the conception of some aspect of himself which he tries to maintain (for himself or for others) in that situation." Their subjects, male and female undergraduates, were paid volunteers who had offered to participate in a study of consumer preferences. Each worked separately, testing six different spreads for bread and rating them on 9-point bipolar scales for flavor and for general preference. For each subject two spreads were selected to which he had given identical or highly similar ratings, and he was asked to select one so that a jar of it could be given him to take home. The selected spreads had all been rated at or close to midscale.

Half of a "high self-involvement" subgroup of the subjects were told prior to choosing by one of the experimenters (introduced as an expert in food-selection factors) that people's ability to judge subtle differences in quality of foods was closely correlated with leadership aptitude, executive potential, and artistic judgment. The experimenter said that she wished to interview subjects in groups about their food choices as soon as the taste test was over. The other half of the high self-involvement group made their choices first and then received the

above inducement. A low self-involvement subgroup did not receive the inducement. All subjects re-rated all six spreads they had tasted.

More subjects in the high than the low self-involvement conditions re-rated the spreads so as to enhance the difference between the chosen and unchosen alternatives. The differences were significant for flavor ratings but not for general preference ratings, although the latter were consistent in direction. The two high-involvement subgroups did not differ significantly from each other. Subjects tended more to enhance the chosen item than to deprecate the unchosen. They also, reminiscent of the Brehm and Cohen (1959a) study, tended to enhance a matched non-critical item - an item about equal on original rating to the choice alternatives but not involved in the choice.

An earlier study by Zimbardo (1960) also used involvement as a variable. He had coeds appear in friendship pairs for a study on how friends diagnose and evaluate social issues, in this case on juvenile delinquency. Seated across the room from each other, the friends were to read a case study on juvenile delinquency and determine the locus of blame for the crime described. Half the subjects were told to read the case carefully, but not to expect too much from it since it was not representative and it would be impossible to learn anything from their reactions to the case. It was suggested that results with other girls had demonstrated this, but that they should read it and give their opinions anyway in order for the overall experiment to come out right. The other half were told that the case was a good one and that their reactions to it would indicate their basic social values, personalities, and outlook on important life problems.

After they had given their opinions in writing, they were asked to judge delinquents from a group of eight photos - a task which would measure their judgmental and perceptual ability. Each subject was then told that she had judged 5 of the 8 correctly, but that her friend and partner had scored 100 percent (supposedly enhancing the credibility of the friend). Subjects were then informed of their friends' ratings of the case study, with the discrepancy between the subject's and friend's ratings being either large or small. They then reconsidered their own ratings.

The high involvement group, which reported strong feelings of involvement, showed significantly greater change toward the positions of their friends than did the low involvement group, which reported weak feelings of involvement. Although large discrepancy led to greater change than small, no interaction between discrepancy and involvement was found.

A recent study by Cohen and Brehm (reported in Brehm & Cohen, 1962) considers the personal involvement variable in a somewhat different light. Reasoning that the dissonance producing effects of volition (conscious control of behavior, or choice) might operate independently of other dissonance producing variables, they designed an experiment to assess the role of volition as such.

Thirty undergraduate fraternity pledges were asked by their pledge-masters to report individually for a short research project lasting 15-20 minutes. However, the experimenter, a professor not connected with any of the fraternities, demanded that they sign up to copy random numbers for 3 to 4 hours. Three conditions of coercion were used, each

several conditional variables which appear to modify and enhance these effects. Several studies showed that engaging in behavior at variance with certain of one's beliefs may lead to modification of those beliefs in a direction more consistent with the behavior, and that the less overtly or obviously compelling the reasons for doing so, the greater the change.

Unexpected increases in the punishing or non-rewarding effects of discrepant behaviors led to greater changes in attitudes, as did perceptions of the irrevocability or inadequate performance of the behavior. The effect of the visibility of the commitment and behavior is not yet clear. Commitment to unpleasant behavior leads to attitude change even before the behavior is performed. Expectations of difficulty in dealing with an opposing message seem to lead to greater effort with it, and consequent greater attitude change. On the other hand, "challenging" the subject to resist a persuasive message seems to lead to him doing just that.

Choosing from among relatively desirable alternatives leads to changes in ratings of the alternatives such as to enhance the superiority of the chosen. The more alternatives there are, the more nearly equally desirable they are, and the more dissimilar they are, the greater the change that takes place. The more the self is overtly involved in the choice, the greater the change to enhance the choice.

In addition to the above results, some unpredicted findings occurred. In one study, the attitude change resulting from commitment to write an essay in opposition to private beliefs was accompanied by similar change in attitude toward a second topic mentioned in the inducement conditions but about which no commitment of any kind was asked.

In two of the choice studies, the superiority of the chosen article was enhanced not only by increasing its desirability and decreasing the desirability of its strongest competitor but also by increasing the desirability of lesser competitors. A third unexpected finding was an inverse relationship between attitude change and extent of verbalization in writing essays in opposition to private beliefs. In three other studies the researchers found that the theoretically minimum dissonance conditions were resulting in as much or more attitude change as were medium dissonance conditions.

The generalizability and validity of many of these studies is limited by the frequent lack of control and confounding of potentially crucial variables. Some of the studies are highly complex, with consequent uncertainty on the part of the analyst as to just what happened to the subjects during the course of the experiments. In some studies key inducements failed to produce predicted results; in others certain key assumptions apparently never were checked.

From the standpoint of developing a theory of choice, there is, as Cohen (1960) has suggested, some question in many of the studies as to just what the subjects had or had not agreed to do. It is probable that in all the studies subjects were confronted with a series of more or less discrete choices, including the implicit one of whether or not to participate in the study. This means that even in the "no-choice" conditions subjects did, in fact, have some choice in the matter, however small. There is, furthermore, the question of whether subjects were agreeing to perform behavior seen as clearly discrepant, or whether they were agreeing, as a result of "challenges" implicit or explicit in the situation, to demonstrate their ability to handle whatever came along.

In short, the research has not yet made clear how sensitive a variable choice is in attitude change, and, derivatively, how choice functions in the process of attention to and consumption of mass media messages.

Theoretic Perspective

As mentioned earlier, the theory giving rise to most of the research on choice is that of Leon Festinger (1957); the theory of cognitive dissonance. As set forth in Festinger's book, it is composed of the following more or less formal statements (pp. 3, 260-266):

> Cognition means "any knowledge, opinion, or belief about the environment, about oneself, or about one's behavior," including feelings, wants and desires.
>
> Cognition is "decomposable into elements or, at least, clusters of elements."
>
> "Pairs of elements can exist in irrelevant, consonant, or dissonant relations."
>
> "Two cognitive elements are in an irrelevant relation if they have nothing to do with one another."
>
> "Two cognitive elements are in a dissonant relation if, considering these two alone, the obverse of one element follows from the other."
>
> "Two cognitive elements are in a consonant relation if, considering these two alone, one element follows from the other."
>
> "The presence of dissonance gives rise to pressures to reduce that dissonance."
>
> "The strength of the pressure to reduce dissonance is a function of the magnitude of the existing dissonance."
>
> "The magnitude of the dissonance or consonance which exists between two cognitive elements will be a direct function of the importance of these two elements."
>
> "The total magnitude of dissonance which exists between two clusters of cognitive elements is a function of the weighted proportion of all the relevant relations between the two clusters which are dissonant, each dissonant or consonant relation being weighted according to the importance of the elements involved in that relation."

Dissonance may be reduced

1. "By changing one or more of the elements involved in dissonant relations."

2. "By adding new cognitive elements that are consonant with already existing cognition."

3. "By decreasing the importance of the elements involved in the dissonant relations."

"The effectiveness of efforts to reduce dissonance will depend upon the resistance to change of the cognitive elements involved in the dissonance and on the availability of information which will provide, or of other persons who will supply new cognitive elements which will be consonant with existing cognition."

"The major sources of resistance to change for a cognitive element are the responsiveness of such cognitive elements to 'reality' and the extent to which an element exists in consonant relations with many other elements."

"The maximum dissonance which can exist between two elements is equal to the resistance to change of the less resistant of the two elements."

As presented, the theory has several fairly serious drawbacks. One of these has to do with Festinger's definition of a dissonant relation. Berlyne (1960) puts it this way:

> "Festinger's 'dissonance' is a relation that can obtain between two 'cognitive elements' (beliefs, evaluations, perceptions) or between a cognitive element and an overt action that the subject either is contemplating or has already executed.... Dissonance is defined in terms of logical contradiction ('p implies not-q'), but, taken strictly, this definition does not fit many of the instances that are analyzed.... It seems better to invoke the more general notion of conflict (p. 283)."

It seems safe to say that in human affairs two elements rarely, if ever, can be taken alone. Festinger, himself, implies an awareness of this when he says:

> "The dissonance might exist because of what the person has learned or come to expect, because of what is considered appropriate or usual, or for any of a number of other reasons (1957, p. 13)."

Clearly, the definition given is, at best, inadequate.

A closely related problem has to do with how dissonance (i.e., presence of a dissonant relation) shall be known to exist. If it is true, as Rogers (1951) contends, that reality is what the given individual perceives and experiences it to be, how can dissonance be defined except in personal terms? "What one person sees as inconsistent," Kelly (1955) says, "another may see as consistent (p. 86)." Dissonance, or inconsistency, it would seem, is "a property attributed to experience by the person who has the experience (Kelly, 1955, p. 87)."

There are different approaches to resolving this impasse. One is to assume that dissonance is the presence (available for perception) of an illogical relation between cognitions, and to then assume that some of the means of reducing or otherwise dealing with this dissonance include avoiding, ignoring, repressing, and overlooking it. A second approach is to assume that dissonance is a tension (or drive) aroused by the perception of contradiction among cognitions. External knowledge of the existence of dissonance then has to be confined, for the present, to clear-cut, presumably universally recognized discrepancies and to reasonable inferences based on knowledge of the subject's view of the world. McGuire (1960) has discussed the characteristics of these and other approaches, indicating that all give rise to serious problems and that the inclinations and purposes of the researcher tend to determine which approach is used.

A derivative problem relates to the question of when dissonance reaches a magnitude sufficient to motivate dissonance reduction behavior. The question is a crucial one in the choice and discrepancy experiments;

i.e., how much choice is required or how discrepant must the behavior be? Hovland and Rosenberg (1960) point out that current methods are so crude that it is extremely difficult to do more than take account of the presence or absence of inconsistency. They suggest the notion of "threshold of response to inconsistency"; a similar idea is advanced by Berlyne (1960):

> "An additional assumption that we must make is that there is some sort of threshold value that the relative strength, p, of a response tendency must exceed if it is to contribute to conflict (p. 36)."

Along with the question of how much, we must also raise the issue of when dissonance occurs. Brehm and Cohen (1962) note that the arousal of dissonance seems to be unequivocal only in situations that involve choice. Cohen (1960) argues that it is, perhaps, only a consequence of choice:

> "...these experiments indicate that the perception of commitment to a choice may be a necessary precondition for the creation of cognitive dissonance. Where choice is varied, expectations from dissonance theory are fulfilled only under high-choice conditions: under low-choice conditions, straightforward motivational or resistance effects seem to account for the results. These findings imply that the mechanism through which variations in motivational inducements are operating in producing variations in attitude change may conceivably be the person's subjective perception of the choice he has in submitting or exposing himself to the undesirable event (p. 306)."

Maccoby and Maccoby (1961) imply a similar view when they argue that exposure to a message contrary to belief is a postdecisional situation in the sense that the subject had already "chosen" to believe what he does.

Choice situations can be thought of as conflict situations. Hovland and Rosenberg (1960) suggest that inconsistency and conflict

may be the same basic phenomenon and that we "may derive clues for measurement of inconsistency from the theorizing about factors affecting the degree of conflict (p. 214)." Berlyne (1960) voices a similar feeling:

> "...there is much in common between these conceptions, despite their divergent emphases. The ways in which dissonance or imbalance can be removed, ...parallel the ways in which the acquisition of knowledge can relieve conflict,...Furthermore, all these theories are alike in recognizing that the beliefs, attitudes, and other symbolic processes of an individual do not exist in isolation but interact, that there can be discrepancies between them that the individual is motivated to remedy (p. 285)."

The crucial question seems to be which way from the choice point one is looking. Pre-decisional changes are attributed to conflict resolution; post-decisional to dissonance reduction. The issue is pointed up by Cohen (1960):

> "Another difficult problem concerns the dual theoretical notions of conflict and dissonance. With regard to the free-choice situations, a conflict interpretation might claim that re-evaluation of alternatives occurs before choice, thereby changing the approach-avoidance gradients for the alternatives, and allowing finer discriminations so that a choice can be made. While both pre-decisional re-evaluation before choice owing to resolution of conflict and post-decisional re-evaluation after choice owing to resolution of dissonance undoubtedly occur, it is not clear to which process and therefore to which theoretical notion the major share of re-evaluation may be attributed (p. 313)."

What we seem to be talking about is the process of arriving at a choice or decision and the process of "justifying" it once it is made. The operational possibilities for distinguishing between the two appear to be sharply limited, in that both processes seem to involve the same behaviors and it is extremely difficult to say where one stops and the other begins. Two studies discussed previously are indicative. Both Bennett (1955) and Rabbie, Brehm, & Cohen (1959) found as much attitude change following commitment to behavior, but before performance of it,

as following both commitment to and performance of the behavior. There also was evidence in the latter of change toward an incidentally related issue about which no overt choice was made. Furthermore, Deutsch, Krauss, & Rosenau (1962), in studying the effects of choices relevant to self concepts, found that the end effect of the choice was the same regardless of whether the inducement of self concept relevance occurred before or after the choice was made. The fait accompli studies suggest that justification procedures continue until the consequences are "all in." Under the circumstances, it may be fruitful to consider choosing and justifying the choice as highly inter-related parts of the same basic process. At this point there seems no major theoretical advantage in distinguishing between the two.

Dissonance, then, might be defined as the tension aroused by perception of conflict - or as the need to resolve a conflict - or as the drive to reduce a conflict, depending upon what terminology one wishes to use. As described by Berlyne (1960), conflict is the simultaneous arousal in an organism of two or more incompatible responses. Arousal, in turn, is the occurrence of an internal or external stimulus associated with a certain response. Conflict may be due to the occurrence of a stimulus associated with two or more responses, or to the occurrence of several stimuli to each of which a separate response is associated.

Conflict resolution and dissonance reduction become essentially the same process, with magnitude of dissonance roughly equivalent to degree of conflict. Festinger (1957) posited magnitude as a function of the importance of the dissonant elements and the nearness to equality in number of elements on each "side" of the discrepancy. Cohen (1960) suggests, additionally, that magnitude is affected by the number of al-

ternatives or choices and by their qualitative dissimilarity. Similarly, degree of conflict is defined by Berlyne (1960) as a function of the nearness to equality in strength of competing response tendencies, their number, their absolute strength, and, perhaps, their degree of incompatibility. Hovland and Rosenberg (1960) present a similar view.

A crucial problem still remaining is that of defining adequately the dual notions of "importance of dissonant elements" and "absolute strength of competing response tendencies." The other determinants of magnitude of dissonance or degree of conflict - number, incompatibility, and equality of desirability of alternatives - appear to be aspects of the difficulty of making a choice. Importance, on the other hand, seems to be more closely related to the consequences of error. Error, obviously, can mean physical harm to the organism, loss of valued objects, or failure to obtain one or another wanted goal. Not so obvious is the possibility that error can mean psychic harm to the organism - and, perhaps, irrespective of whether it means any of the other things. Janis (1959) has suggested that both utilitarian loss and social and self disapproval may be involved in conflict situations.

The notion of psychic harm appears to be crucial. Neither reference to aspects of the difficulty of making a choice nor reference to notions of punishment and non-reward are sufficient to explain the changes in attitude and other phenomena found in the previously cited research. Why should we find attitudes changing in favor of disliked or disagreeable behavior? Why should a choice between two differentially desirable articles lead to increased liking for the chosen and decreased liking for the unchosen? Why should the attitudinal effects of choosing

be significantly greater when subjects are told that choices reveal their personalities than when they are not? And why should the extent to which a person feels he has control over his own behavior make a difference?

Deutsch, Krauss, & Rosenau (1962) put the issue this way:

> "In concluding our discussion, it should be noted that, according to Festinger's theory of dissonance, the magnitude of dissonance is a function of the importance of the dissonant elements. Presumably, then, our results might be explained by assuming that self-involvement made the decision sufficiently important for dissonance to be manifested and that, without self-involvement, the decision was so trivial that little or no dissonance could be expected. Let us grant the possibility that in the condition of low self-involvement the choice was so unimportant that the amount of dissonance produced might have been too little to be detectable. The question, then, naturally arises as to what makes a decision important? Unfortunately Festinger does not define 'importance,' apart from equating the importance of a cognitive element with the extent to which it is valued by the person or with how 'consequential' it is to the person (Festinger, 1957, p. 16). It is obvious from our results with the self-involvement conditions that it is not the perceived value of the items directly involved in the choice which is critical in determining the importance of a choice; a choice can be important because of its self-relevance even when the items involved in the choice have little perceived value (p.26)."

These authors contend that when an individual experiences dissonance after making a choice he is attempting to defend himself against a perceived implication of the choice that is contrary to his self conception. A similar notion is suggested by Cohen (1960) when he says that "...a more adequate formulation might point to the conflict within the person as different aspects of his self become embroiled in opposition as a result of a choice or commitment on his part (p. 307)."

The idea that people are motivated to defend themselves against various psychological threats is well documented in the literature.

Notions of the basis of the motivation are somewhat speculative, but seem to involve two inter-related propositions: (a) man seeks to control his relationships to the events of reality, and (b) he seeks to achieve and maintain feelings of significance as a person. With respect to the first of these, Kelly (1955) suggests that man should be viewed as a scientist in his own right, seeking to predict and control the course of events in which he is involved, formulating theories, testing hypotheses, and weighing "experimental evidence." Lecky (1951) argues similarly:

> "...the ability to foresee and predict environmental happenings, to understand the world one lives in and thus be able to anticipate events and prevent the necessity for sudden readjustments, is an absolute prerequisite for the maintenance of unity. The subject must feel that he lives in a stable and intelligible environment in which he knows what to do and how to do it, and his attitude of confidence and certainty is supported by this conviction (p. 122)."

Several writers indicate that control of relationships to reality requires a stable set of expectations about self:

> "Let us think of the individual, therefore, as a unified system with two sets of problems - one the problem of maintaining inner harmony within himself, and the other the problem of maintaining harmony with the environment, especially the social environment, in the midst of which he lives. In order to understand the environment, he must keep his interpretations consistent with his experience, but in order to maintain his individuality, he must organize his interpretations to form a system which is internally consistent (Lecky, 1951, p. 155)."

> "Because we are aware of the future and must maintain ourselves, in the future as well as in the present, it is necessary to enhance the self against the exigencies of tomorrow... And since the future is uncertain and unknown, no enhancement of the individual's experience of personal value, no degree of self-actualization, is ever enough... Thus, man seeks not merely the maintenance of a self but the development of an adequate self - a self capable of dealing effectively and efficiently with the exigencies of life, both now and in the future (Combs & Snygg, 1959, p. 45)."

> If man "is to develop a self-system which will give him a sufficient degree of competence for coping with his interpersonal environment, he must know as far as possible what others expect of him, must know who he is and what he is capable of, what the effects of his actions are in the appraisal of himself by these others (Cottrell & Foote, 1952, pp. 198-199)."

There are many descriptions of the process of formation of self and self concept through interaction with the environment and, particularly, with other people (Mead, 1934; Sullivan, 1953; Rogers, 1951; Lecky, 1951; Combs & Snygg, 1959). One of the most graphic and pointed statements is by Murphy (1954), who describes the process through which the infant goes in emerging from a rather blurred and global contact with his environment to the identification and detachment from the total matrix of "me."

> "Now 'me' cannot be neutrally accepted... It is in general a good 'me'; it is warm; it is the center where the important things happen... The precious object is defended as other precious objects are defended, but probably more constantly and more intensely because our experience of the self is more constant and more intense than our experience of most other things. Self-love and delight in being loved appear as soon as there is a self - let us say roughly in the second half of the first year. There is likewise a certain amount of embarrassment and shame when the self is disapproved, as is clearly evident towards the end of the first year, and it operates as a powerful deterrent force... Identification with others means that our self-love depends partly upon the love which others bear us. And if it is just approval, rather than love, which they give, it is approval which we then give ourselves because they approve, and 'prestige' is born (p. 619)."

Rogers describes the direction of human behavior in these terms:

> "The organism has one basic tendency and striving - to actualize, maintain, and enhance the experiencing organism... The organism actualizes itself in the direction of greater differentiation of organs and of function. It moves in the direction of greater independence or self-responsibility... in the direction of an increasing self-government, self-regulation, and autonomy, and away from heteronymous control, or control by external forces (Rogers, 1951, pp. 487-488)."

Any event which tends to bring about a basic change in an established pattern of dealing with others, Sullivan (1953) says, brings on the tension of anxiety and "security operations" designed to reduce or relieve it. The objective is to maintain a feeling of safety in the esteem reflected to one from the other person or persons involved. Unfortunately, anxiety and its attendant security operations interfere with other activities of the organism. Combs and Snygg (1959) suggest that threats to the existing self organization are unavoidable; that the varying roles of the individual inevitably lead to some experiences at odds with his concept of himself. He may be quite clear about the conflict and its source, or he may perceive the problem only indistinctly "as 'doubt,' as a vague feeling of tension, as a feeling that 'something is wrong,' 'this is not me,' or, more specifically, as a feeling of inadequacy or failure (pp. 157-158)." Deutsch, Krauss, & Rosenau (1962) list several conditions:

> "Due to the pervasive concern in our society about being 'correct,' 'popular,' 'successful,' 'free of blame,' etc., one can expect defensiveness about decisions - i.e., post-decisional dissonance - to be a fairly widespread phenomenon. One can expect postdecisional dissonance to be accentuated under the conditions which enhance self-defensiveness: When the individual has doubt that he conforms to his vested self conception; when the 'correctness,' 'popularity,' 'successfulness,' etc., of his decision is seen to be a relevant measure of some aspect of his self; when his sense of responsibility for the decision is strong; when the external or social challenge to his self conception is strong, etc. (pp. 25-26)."

When a person's behavior violates some conception of himself, Lecky (1951) says, it leads to reinterpretation or to seeking punishment. "If most of our thinking appears to have the purpose of merely rationalizing our behavior to make it seem consistent, of defending conclusions

already reached or justifying positions already taken, this is, indeed, what would be expected under the circumstances (pp. 164-165)." The ideas most closely related to concept of self will be maintained more intensively than other ideas, Lecky adds, since one's concept of self is the foundation of his entire organization. Rogers (1947) adds that while a person can and will alter the way he perceives himself, with consequent alteration of behavior, he is more likely to reorganize that part of the field which does not include the self to the extent that this is possible.

All of this does not mean, however, that the individual necessarily shuns problems, conflicts, and challenging experiences. Rogers (1951) contends that experiences which enhance the self are valued and sought; Combs and Snygg (1959) say that the feeling of personal adequacy derived from any accomplishment is always greater if there is a possibility of failure. Lecky (1951) suggests that people need problems to solve:

> "Thus a pleasure cannot be understood except in terms of its history; it came into existence because a difficulty was overcome, but as the difficulty diminishes it is destined to pale, so that eventually the affective value of most behavior approaches neutrality. Hence, since the pleasure to be gained by repeating the same performance is likely to be limited, we arrive at the unorthodox conclusion that continuous pleasure demands the continuous solution of new problems, rather than a condition of relief and passivity. The problems need not be of any practical importance, however, and may even be quite artificial, as in games and similar amusements (p. 139)."

Hovland and Rosenberg (1960) note that man has the unique capacity for symbolic manipulation so that he can change his ideational representations when needed to resolve conflict, and further

> "...that a socialized human, by the time he has come to maturity, will have undergone thousands of 'training trials' in which 'conflict-like' situations have been altered, and

> their attendant frustrations reduced or eliminated, through active efforts at reorganizing the representation of certain aspects or components of those situations so as to reduce the inconsistency between them...The long-term consequence of an extended history of such transactions repeated again and again will be that the state of 'consistency' between affective, cognitive, and overt behavioral responses toward objects will become, in itself, a desired and gratifying state of affairs; it will have the status of a basic learned incentive. (pp. 224-225)."

The foregoing discussion appears to support a general view of behavior approximately as follows:

> The human individual is a purposeful, goal-directed organism, conscious of reality and of himself as an entity in it. He develops cognitions or expectations about the cause-effect relationships of reality and of himself and reality. His behavior is guided by his purposes and cognitions, and is successful to the extent that it achieves purposes and is generally consistent with, or fits within, cognitions. The basic constancy in a man's life is his self identity; all of the things that he thinks he is, owns, controls, and can do. Successful behavior requires control of relationships between man and reality: control demands stability of cognitions about reality and about self. The stability of man's self identity must be maintained, enhanced, defended. Self identity accrues from perceptions of successful achievement of purposes and from perceptions of others' responses to the self. Others' responses are responses to one's own behavior. Successful behavior results in actual or potential responses from others consistent with one's self identity; that is, responses which maintain and enhance self

identity. All behavior, for whatever purpose, has implications for self identity.

Conflict - the simultaneous arousal of two or more incompatible responses - is an integral and unavoidable part of living. Unresolved conflicts block achievement of purposes, including enhancement of self identity. Behavior, which achieves purposes and enhances self identity, results from resolution of conflicts. Successful resolution is, in itself, enhancing in that it contributes to feelings of stability and competence in dealing with the exigencies of reality. Man is motivated, therefore, to resolve conflicts successfully, to seek those conflicts which he expects he can resolve successfully, and to avoid those which he expects he cannot.

This general view leads to the following hypothesis: Man strives to avoid error in behavior and cognition, and to avoid the feeling of having made one. This means, in turn, that behavior must be defensible or justifiable and that it will be justified or defended. Dissonance, it would seem, is the drive or need to defend one's selection of behavioral alternatives at any given time; i.e., to arrive at solutions to conflict that will maximize achievement of purposes and that can be adequately justified. Magnitude of dissonance would then be the strength of this drive.

Conflicts, or choice situations, can be analyzed in terms of difficulty and of importance. Difficulty, the probability of making an error, is a function of the number of alternatives, their equality of

desirability, and their qualitative dissimilarity. It may also reflect the lack of knowledge of the consequences of alternatives. Importance, the consequences of making an error, is a function of the potential injury to the self and the self identity through physical damage, loss of valued objects, non-reward, failure to maintain and enhance self identity, or contradiction of self identity. The strength of the drive to justify a choice will vary directly with the interaction and magnitude of difficulty and importance.

Deutsch, Krauss, & Rosenau (1962) have advanced several hypotheses with respect to the magnitude of dissonance that seem directly related to the importance dimension of a choice. They say that magnitude will be a function of the degree of responsibility that an individual sees himself as having for the choice, the degree to which he cannot negate the consequences of his choice, the degree to which he sees the choice as validly indexing his self conception, and the degree of inconsistency between the choice and his self conception. If we assume that the implications of a choice for self identity are not always clearly recognized at the time of the choice, it would seem to follow that importance can be increased by the introduction of any cues which emphasize the consequences of error. These would include challenge to the appropriateness of the choice, pointing out the relevance of self identity, pointing out inconsistency between the choice and self identity, emphasizing personal responsibility for the choice, and making the choice irrevocable, conscious, overt, and visible. Importance should also be sensitive to cues which point to the cultural values of freedom to choose, rationality as a basis for choice, independence, democracy, and self-reliance.

The basic hypothesis of this study, derivable from the theoretic perspective, is that the persuasive effect of a message increases as the individual exercises increasing degrees of choice in attending to it.[7] More specifically, the perspective supports the proposition that increasing degrees of choice between messages available for attention will enhance the persuasive effect of the messages read.

The perspective also provides a basis for the prediction that under certain conditions denial of choice will produce as much attitude change as choice. The studies inspired by dissonance theory have amply demonstrated the attitude change producing effects of commitment to various forms of discrepant or disagreeable behavior. The behavior justification principle developed here is entirely consistent with these findings. Somewhat more clearly than dissonance theory, the principle suggests a reason for expecting denial of choice to be a disagreeable state of affairs under some conditions. If successful resolution of conflict is enhancing, and if man is motivated to seek conflicts that he expects he can resolve successfully, then confronting a person with a conflict that seems to him resolvable, and denying him freedom to resolve it, will be distasteful in that he is denied an opportunity for self enhancement. He may even feel self deprecation because of the implication that he is not capable of handling the situation satisfactorily. Given this, if he complies with the external resolution of the conflict, he has in effect committed himself to discrepant behavior and one would predict probable attitude change to justify that commitment.

To test these hypotheses, five ways of presenting a persuasive message were developed:

1. - presentation of a single message with request to read it;

2. - presentation of two messages with request to select one to read:

3. - as in the second treatment, with further instructions stressing the importance, consequences, and reflections on self of choosing;

4. - as in the third treatment, with addition of a challenge to the appropriateness of the choice;

5. - presentation of two messages with request to read a specified one.

The basic hypothesis states that attitude change in the fourth treatment will be greater than in the third treatment, which will be greater than in the second treatment, which will be greater than in the first treatment. The subsidiary hypothesis states that attitude change in the fifth treatment will be greater than in the first treatment. If the experimental inductions are successful, subjects who are asked to choose between messages should perceive themselves as having more choice in what they read during the experiment than should subjects not given such a choice; that is, the mean levels of perceived choice would be greater in the second, third, and fourth treatment groups than in the first and fifth treatment groups.

Four additional questions were explored, without predictions:

1. Would groups, after having read the messages, differ in general favorability of attitude toward the sources of the messages? No predictions were formulated for this or the following questions.

2. Would groups differ in their predictions of the sources' attitudes toward the experimental message concepts?

3. Would groups differ in their interest in seeking additional information on the experimental message concepts to read, and would they differ in the points of view about these concepts they wished to read?

4. Would groups differ in the proportion willing to take part in similar future research?

CHAPTER II

DESIGN AND PROCEDURES

The study was designed to assess change in attitude toward two controversial defense-disarmament concepts under five conditions of choice between messages. It was hypothesized that the amount of attitude change would vary directly with degree of choice between messages. Degree of choice included variations both in available alternatives and in amount of stress or emphasis placed on the choice.

A second hypothesis specified that presentation of alternatives to the subject, but then denying him freedom to choose from among them, would lead to more attitude change than the minimum degree of choice condition where only one message is presented.

A before-after design was used. In a pretest, subjects' attitudes toward the two experimental message concepts were assessed. The critical concepts were "building more missiles and bombs to use for retaliation if Russia attacks us" and "a community fallout shelter in your own neighborhood." The experimental treatments were administered four weeks later and consisted of exposing each subject to a persuasive message covering the two concepts. Immediately following this exposure, subjects' attitudes were reassessed, permitting comparison of pretest and posttest measures and determination of attitude change scores for each concept. At this time, measures were also taken of the other criterion variables being explored; post treatment attitude toward source,

perception of the source's attitudes toward the concepts, interest in reading additional material reflecting various attitudes toward the concepts, and willingness to participate in further research.

Experimental Variable

The independent variable of this study was degree of choice in attending to one message rather than another. Degree was defined to include both the theoretic notions of difficulty and of importance. The difficulty component of degree of choice involved manipulation of the number of messages available to the subject, while the importance component involved variation in the amount of attention called to the choice and its appropriateness.

The message material was presented to the subject in an envelope. The states of the variable were operationalized by the directions given for determining which article to read. They were as follows:

> One-message, no choice (1M-NC)- The envelope contained only one message and the direction stated simply: "Would you take out the article and begin reading please?"
>
> Two-message, choice (2M-C) - The envelope for this and all succeeding treatments contained two messages. The directions, following a brief description of the envelope's contents, stated: "I'd like you to think about these for a few minutes, and then decide which of the two you'd be most interested in reading. Choose carefully the one you'd be most interested in, take that envelope out of the packet, open it, take out the article, and begin reading, please."
>
> Two-message, stressed choice (2M-SC) - The directions stated: "I'd like you to think about these for a few minutes, and then decide which of the two you'd be most interested in reading. In choosing, keep in mind that these are controversial topics and you well could find yourself strongly disagreeing with at least one of these writers. Think a little about what each article likely is about and what the author might be advocating. Remember that we live in a country where the freedom of choice is important and where

we have the freedom to decide for ourselves what we will read. We also know that a person's willingness to make choices, sometimes with only limited information, says something about his independence and self reliance. Choose carefully the one you'd be most interested in reading, take that envelope out of the packet, open it, take out the article, and begin reading, please."

Two-message, challenged choice (2M-CC) - This treatment was nested in the two-message, stressed choice treatment. One of the messages in the envelopes for this treatment had an extra page added after the title page, so that subjects who chose to read this message were asked: "Please take a moment and record below your reasons for selecting this particular article to read. In our work with other groups like this one, we've found most people picking the other of the two articles and we were predicting that you would, too. Would you briefly list a reason or two for selecting this article?"

Two-message, denied choice (2M-DC) - The directions stated: "For our work here today, I'd like you to read the article (title) by (author). Would you take the envelope marked (short title) out of the packet, open it, take out the article, and begin reading, please?"

As a check on the success of the experimental variations, a measure of level of perceived choice was taken:

Check on the following scale how much choice you feel you had in what you read during this exercise today:

Little							Much
extremely	quite	slightly	neither	slightly	quite	extremely	

Criterion Variables

The principal dependent variable of the study was attitude change toward the two experimental message concepts. Following Osgood, Suci, & Tannenbaum (1957), attitude was considered as "a learned implicit process which is essentially bipolar, varies in its intensity, and mediates evaluative behavior." More specifically, it was thought of as the projection of the meaning of a concept onto the evaluative dimension of semantic space. Operationally, attitude toward a concept was re-

flected by the way in which a set of evaluative semantic differential scales were marked with respect to it.

In this study, attitude was indexed by the sum of scores on five scales used to judge each concept: good-bad, wise-foolish, positive-negative, valuable-worthless, and nice-awful. In the work reported by Osgood et al (1957) these five scales consistently carried high and relatively unambiguous loadings on the evaluative factor. Furthermore, in a pilot test using civil defense concepts and with Department of Communication graduate students as subjects, these scales were most highly intercorrelated of 11 evaluative scales checked.

The use of two experimental concepts rather than one came about when the pretest data from a pilot study showed that the attitudes of young people toward fallout shelters (the originally planned single concept) were generally somewhat favorable. Conceivably, the potential for change in attitude toward this concept could have been limited enough to interfere with finding differences between the treatment groups, assuming that the treatments were effective. Furthermore, the problem would be compounded if it were the case that these generally favorable attitudes were also highly resistant to change. Adding a second concept toward which subjects also appeared to be favorable, and, as with the shelter concept, striving with the experimental message to increase favorability toward it, did not promise to alleviate the situation.

In some previous studies (Brehm, 1956; Brehm & Cohen, 1959a; Deutsch, Krauss, & Rosenau, 1962), the dependent opinion change variable had been calculated by combining the positive change on one attitude object with the negative change on another. A similar situation was

developed here. It seemed possible that a plausible case could be made for encouraging fallout shelters while at the same time discouraging the production of retaliatory bombs and missiles. The combination of these two concepts would increase the potential for attitude change significantly by providing substantial room for change for all subjects except those rare individuals who would, prior to treatment, be maximally favorable toward shelters and unfavorable toward retaliatory bombs and missiles production.

Attitude change for a single concept was determined by taking the difference between the pretest and posttest scores and signing it positively if change was in the direction advocated by the message and negatively if not. This meant that for the fallout shelters concept positive change was an increase in favorability toward the concept while for the retaliatory bombs-missiles concept it was a decrease in favorability. Change scores for the two concepts were then summed, thus providing a single combined change score for each subject.

Four other dependent variable measures were constructed for the exploratory part of the study. One of these was for attitude toward source; the index was the sum of scores on eight semantic differential scales which were representative of most of the facets of source credibility identified in an analysis by Sarbaugh (Department of Communication, Michigan State University). The scales selected were bold-timid, friendly-unfriendly, informed-uninformed, responsible-irresponsible, clear-unclear, openminded-closedminded, certain-uncertain, and valuable-worthless.

The second variable was prediction by the subjects of the source's attitudes toward the experimental concepts. Subjects made these ratings using the same five semantic differential scales they had used to indicate their own judgments of the concepts. The scale scores were summed as before.

A third variable was a measure of information seeking secured by asking subjects which of the following materials they would be interested in reading (they could check as many or as few as they liked):

> "A highly respected general's arguments in favor of increasing our stockpile of nuclear weapons."
>
> "A prominent senator's view that a national community fallout shelter program would be a waste of money."
>
> "The contention of a high State Department official that continued weapons production is dangerous and unnecessary."
>
> "The arguments of a leading clergyman that community shelters are essential to save lives in event of attack."
>
> "An internationally known scientist's position that both shelters and retaliatory power are irrelevant issues in the cold war - that the prospects for peace hinge entirely on other issues."

Subjects were scored 1 or 0 for each item, depending on whether they checked it or not. For comparisons between treatment groups, the number of checks for each item was divided by the total number possible, yielding a proportion. The mean number of items selected per subject was also calculated for each treatment group.

Subjects were also asked whether they would be willing to take part in a similar research project in the future. The number of yes responses was used to calculate a proportion for each treatment group.

Experimental Manipulations

The five treatment groups used in the study were formed by dividing each of two large Iowa State University undergraduate lecture classes into four subgroups, each consisting of a block of rows of seats in the lecture auditoriums. A block of approximately one-fifth of the students in each class was used for each of the One-Message No Choice, Two-Message Choice, and Two-Message Denied Choice Treatments. Because the Two-Message Challenged Choice treatment was nested in the Two-Message Stressed Choice treatment, the blocks for these treatments consisted of approximately two-fifths of the students in each class. Within available limits, treatments were assigned randomly to these blocks. The distribution of subjects into the latter two treatments was on a self-selection basis, in that choosing to read one of the experimental messages automatically put a subject into one treatment group while choosing to read the other message put him in the other group. Since it is possible that students do not distribute randomly throughout a large classroom with respect to some potentially influential characteristic, there may have been some bias introduced through use of the above procedures. However, since treatments were not administered to the same block position in each of the two classes, it would seem that any bias introduced through non-random distribution of subjects into treatments was generally equalized across treatments.

Two versions of the persuasive message were prepared. They were actually identical in text, differing only in title, apparent authorship, and paging (Appendix A). The use of identical text eliminated the problem of unequal persuasiveness that might have characterized any pair of

different messages. The variation in paging between the two versions was achieved by using different indentation and points of origin. This device was used to reduce the possibility that subjects would discover that the two articles were the same.

The principle theses of the article were that survival in nuclear war would be possible for many people if they have adequate fallout protection from community shelters, that post-attack life will be livable though very difficult, and that we should take funds from the manufacture of retaliatory weapons (because we already have more than enough) and use them for a stronger civilian shelter and protection program.

The authors and titles used were selected on the basis of a test conducted with 97 high school seniors meeting in their regular English classes. Several author-title combinations were presented in pairs to these subjects; they were asked to indicate for each combination what the article might be about, what action the author might be advocating, whether they would expect to agree or disagree with him, and how willing they would be to rely on what the author had to say in the article. Subjects were then asked to designate which of the two articles in the pair they would be most interested in reading, and why. The two authors and titles selected as a result of these data were those which were equally attractive and reliable and which were highly similar in the range of meanings they elicited; that is, the data gave no basis for expecting that either title or author would be selected any more often or for generally different reasons than the other.

Fictitious names were used for authors, obviating any necessity of obtaining permission to use the names in the experiment. Furthermore,

it reduced the possibility of subjects "recognizing" one or both of the authors, either favorably or unfavorably. The high school data indicated that most subjects would see these authors as quite credible.

For four of the five treatments used in this study, subjects were presented with a packet consisting of a 9 1/2 x 12 1/2 manilla clasp envelope with a sheet of instructions taped to the front. Each packet contained two 9 x 12 manilla envelopes, sealed. Each of these contained an article and a sealed 6 x 9 envelope containing the posttest instrument. On the outside of each of these large envelopes was printed in large letters a three-word abbreviation of the title of the article inside. A "do not open until finished reading" instruction was stamped on each side of the 6 x 9 envelopes.

For the four treatments involving two messages, the first part of the instruction sheet read as follows:

> We're interested in the role that newspaper and magazine reading plays in public awareness of national issues and affairs and would, therefore, like you to read a digested version of a recent article on a relatively controversial topic. The author has attempted to summarize the best information available on the subject, taking into account various sides of the issue, and to reach some fairly clear-cut conclusions.
>
> In the attached packet, there are two such articles. The one in the envelope marked "Bombs or Burrows" has the following title and authorship:
>
> The modern defense question-
> how to solve any one problem
> without creating two more.
>
> BOMBS OR BURROWS - A DEFENSE DILEMMA
>
> By Prof. Wilson B. Hamilton
> Noted Political Scientist, & Director
> International Relations Center, M.I.T.

The article in the envelope marked "Down to Business" has the following title and authorship:

> We've argued long enough
> about missiles, bases, shelters.
> It's time to stop talking and
>
> GET DOWN TO BUSINESS IN COLD WAR PLANNING
>
> By James Rogers Farrington
> Distinguished Nuclear Physicist
> Winner of the Enrico Fermi Award

This standard material was followed by the various directions to the subject on how to select the article he was to read.

A slight variation was used for the one message no-choice treatment. A 9 1/2 x 12 1/2 manilla envelope was used as before, but contained only one 9 x 12 manilla envelope, unsealed. The contents of the latter were exactly the same as with the other treatments. The instruction sheet contained the previously described introduction but listed only one article and author, plus reading instructions.

The experimenter was introduced to the classes as a guest speaker from the Iowa State University Department of Technical Journalism, invited to discuss "the functions and characteristics of our mass media of communication." He established the conditions for administration of the experimental treatments with the following statement:

> "When I was invited to come here and discuss the functions and social characteristics of mass communication with you, I was of course delighted. This is a major interest area for me and I quite naturally think it important and worthy of serious thought by everyone. There is a problem, however - and that is that the mass communication business in our culture today is so large, so varied, and so pervasive that it is difficult to present a clear and cohesive picture of what's going on. It's also too easy to make statements which have little, if any, support - statements that are in large measure unsubstantiated.

> I therefore posed a condition on coming here to speak to you, and that was that I have some live data on which to base comments. Given this, we agreed to use the rest of this period today to gather that data - on the role of newspaper and magazine reading in public awareness of national problems and issues - and then to report back and comment at a later session this quarter. So this is our purpose here today - to ask you to work through a short survey problem - so that we have something much more tangible to go on at our later visit.
>
> Now, I'd like you to read something and then to answer a few questions about it. My assistants and I have some packets of material here, which we'll pass out to you. However, before we start, let me stipulate the few ground-rules involved.
>
> 1. We want your frank, honest reactions. As with all good work of this kind, your individual answers are completely confidential.
>
> 2. Read all instructions carefully and completely and follow them exactly. The success of this enterprise depends completely on this.
>
> 3. Work steadily and thoroughly, but don't hurry. We've just about the time we need to get this exercise done right.
>
> OK? Let's go."

Five graduate students assisted in the distribution and collection of the treatment and posttest materials.

The Sample

Two large classes in introductory sociology at Iowa State University provided subjects for this study. The bulk of these students were freshmen and sophomores, with slightly more men than women. They represented most of the colleges in the University, since the course is designed as a service course for non-sociology majors and is a requirement in many curricula.

The group cannot be considered representative of all undergraduates at Iowa State University, nor of all university undergraduates.

The lack of representativeness does not appear to be crucial, however, since there seems no basis for suggesting that the influence of the choice variable is related to demographic factors. It is possible that organismic variables are related to the effects of choice, but for this study it was assumed that any potential influences of this nature were randomly distributed across treatments.

The two classes used contained a total of approximately 475 students, of which 317 were used in the analyses of this study. Since attendance varied from class session to class session, a substantial number of potential subjects were lost because they were not present at both the pretest and treatment-posttest sessions. Other problems were relatively minor: six pretest and nine posttest instruments were turned in without an identifying name, while two pretest and seven posttest instruments had improperly completed scales. Only five subjects violated the treatment instructions. Thirteen subjects were dropped from the analysis because their answers to a check question on the posttest - "What do you feel we were trying to demonstrate in the exercise today?" - suggested that they had some idea of what the study was designed to test.

Procedure of the Experiment

The pretests for this study were administered during the first week of classes in the quarter. As part of the course organization, the two large classes were divided into 16 discussion sections which met once a week. The discussion group instructors administered the pretests without the experimenter being present. Each group was told that "we're interested in learning more about how college students regard

some of the topics being discussed in the mass media today - I have a very brief questionnaire here for this purpose."

The attitude pretest was a mimeographed booklet containing a cover sheet, nine pages of concepts and semantic differential scales, and a page asking for the respondent's name along with answers to questions on his interest in various defense-disarmament topics (Appendix B). These questions were included on the assumption that answering them would improve the probability that the subject would sign his name to the instrument - a detail essential to later matching of pretest and posttest questionnaires. Instructions for marking the scales were presented on a separate sheet and discussed by the instructors before subjects began filling out the tests.

Each of the concept judgment pages contained the concept to be judged at the top followed by eight 7-point judging scales. The adverbial qualifiers for each position on each scale were typed directly below the appropriate scale position, following research results of Wells & Smith (1960) which suggest that the practice reduces variability and extremity of judgment. The order of the scales varied from page to page, although the same eight scales were used for each concept. All scales moved in the same direction, from generally unfavorable on the left to generally favorable on the right.

The experimental message concepts appeared fifth and sixth in the series of nine. The seven "masking" concepts, in the order of presentation, were:

> "Destroying all U.S. and Soviet nuclear weapons so they cannot be used for war."
>
> "U.S. efforts to be first to land a man on the moon."

"Closing U.S. missile bases in Europe and Asia."

"Storing extra food and special equipment in your home for emergency use."

"Reduction of the U.S. defense budget by 20 percent or more."

"Making a detailed plan, written out and rehearsed, specifying what each member of your family would do in the few minutes after warning was given of nuclear attack."

"Stopping all nuclear weapons testing in the U.S., even if Russia does not."

The experimental treatments and posttests were administered four weeks later during lecture sessions of the two large classes held on successive days. The experimenter was introduced during the last half of the class period as one of a series of guest speakers on topics directly related to the content of the course. Following brief introductory remarks, the persuasive message packets were distributed by the experimenter and graduate student assistants. In general, one person was assigned to each treatment and distributed the packets to the entire block of approximately 50 students designated for that treatment. Two persons handled the double-size block designated for the Two-Message Stressed Choice and Two-Message Challenged Choice treatments. Without being specifically instructed, subjects turned in their packets of material as they finished and left the lecture auditorium. All posttests were completed within 30 minutes of the introduction of the experimenter.

The mimeographed posttest instrument, contained in the packet and completed by subjects immediately after exposure to the persuasive message, did not incorporate the "masking" features of the pretest instrument (Appendix C). It consisted of a booklet containing the following:

A cover sheet.

A page of instructions for marking semantic differential scales.

A page listing the bombs-missiles concept and containing the five scales selected for the measure of the dependent variable.

A page listing the fallout shelter concept and the five scales.

A page listing the author of the article read, followed by eight scales related to various aspects of credibility.

Two pages, each listing one of the two experimental concepts and five scales, asking the subject to check the scales the way he thought the author of the article would do it.

A page which (a) listed five sets of arguments both opposing and supporting the author's point of view, and asked that the subject check those he would be interested in reading, (b) asked the subject to check on a 7-point scale how important he felt it is that people be free to choose what they will read and what they will not, (c) asked the subject to check on a 7-point scale how much choice he felt he was given in what he read that day, (d) asked whether he would be willing to take part in a similar project in the future, (e) asked what he thought the exercise was designed to demonstrate, and (f) asked for his name, major, and year in school.

A printed instruction at the end of the posttest instrument directed the subjects to place all the material back in the packets and return them to the experimenter as soon as they had finished. The results of the experiment and an explanation of its devices and purposes were presented to the subjects during a regular class session several weeks later.

In summary, the study consisted of the following steps:

Pretest - a booklet containing nine concepts each to be judged on eight semantic differential evaluative scales; the fifth and sixth of these nine concepts being the critical attitude objects of the experiment.

Treatment - administered four weeks after pretest and consisting of exposure to a persuasive message under one of five conditions:

> One-Message No Choice - presentation of a single message with request to read it;
>
> Two-Message Choice - presentation of two messages with request to select one to read;
>
> Two-Message Stressed Choice - presentation of two messages with request to select one to read following inductions to increase the overtness and salience of the choice;
>
> Two-Message Challenged Choice - presentation of two messages as in the preceding condition but with the addition of a challenge to the appropriateness of the choice;
>
> Two-Message Denied Choice - presentation of two messages with request to read a specified one.

Posttest - part of the message packet and completed immediately after exposure to the message; containing the two experimental message concepts to be judged on five semantic differential evaluative scales, a set of scales on which to rate the author of the article, sets of scales on which to indicate the author's attitudes toward the two experimental message concepts, scales on which to represent the importance of choice and the amount given in the experiment, a measure of interest in reading additional materials about the concepts, a place to indicate willingness to participate in further research, and a question designed to determine whether the subject was aware of the nature of the experiment.

CHAPTER III

RESULTS

The statistical analysis of the data may be divided into four parts: (a) a check on the extent to which subjects randomly distributed into treatments, (b) determination of the relationship between the degree of choice presented to subjects in the experimental treatments and the amount of choice they said they had, (c) tests of the major hypotheses predicting relationships between degree of choice and attitude change, and (d) tests of the effect of degree of choice on the several secondary independent measures.

Randomness

The mean pretest attitudes (on a zero to 30 scale) toward the two experimental concepts for the five treatment groups are presented in Table 1. Analyses of variance did not yield significant F ratios (Table 2); there appears to be no basis to assume that the treatment groups differed on pretest attitudes toward the concepts.

Table 1

Comparison of Pretest Attitude Scores by Treatment Groups

Measure		Treatment Group 1M-NC	2M-C	2M-SC	2M-CC	2M-DC
Pretest attitude toward bombs-missiles	Mean	17.921	16.190	16.685	17.283	19.391
	S.D.	7.259	6.663	7.522	7.527	6.751
Pretest attitude toward shelters	Mean	20.526	20.638	20.000	19.174	20.547
	S.D.	6.906	6.953	7.161	7.184	6.951

Table 2

Summary of Analyses of Variance on
Pretest Attitude Scores

Bombs-missiles concept:

Source of variation	df	SS	MS	F
Treatments	4	392.320	98.08	F=1.915
Within groups	312	15976.753	51.208	$F_{.90}(4,120df)=1.99$
Total	316	16369.073		

Shelter concept:

Source of variation	df	SS	MS	F
Treatments	4	77.914	19.479	F=.395
Within groups	312	15390.812	49.330	$F_{.25}(4,120df)=.481$
Total		15468.726		

Perceived Choice

The mean perceived choice (on a zero to six scale) for each experimental treatment group is shown in Table 3. It was hypothesized that the One-Message No Choice and Two Message Denied Choice treatment groups would perceive less choice than the other three treatment groups.

Table 3

Comparison of Treatment Groups
on Amount of Perceived Choice

		Treatment Group				
Measure		1M-NC	2M-C	2M-SC	2M-CC	2M-DC
Amount of choice	Mean	2.250	3.103	3.205	2.739	2.125
	S.D.	2.167	2.015	1.787	1.902	2.164

Analysis of variance of the perceived choice scores supported the hypothesis (see Table 4); however, the mean differences were not large (2.193 for 1M-NC & 2M-DC vs. 3.050 for the other groups).

Table 4

Summary of Analysis of Variance on Amount of Perceived Choice: One-Message No Choice and Two-Message Denied Choice Treatment Groups vs. All Others

Source of Variation	df	SS	MS	F
Treatments	1	57.545	57.545	F=14.181
Within groups	315	1278.335	4.058	$F_{.9995}(1,120df)=12.8$
Total	316	1335.880		

Induced Choice and Attitude Change

The major hypothesis of this study predicted that combined attitude change toward the two experimental message concepts would be greater in the Two-Message Challenged Choice treatment than in the Two-Message Stressed Choice treatment, which would be greater than in the Two-Message Choice treatment, which would be greater than in the One-Message No Choice treatment. The second hypothesis predicted that attitude change in the Two-Message Denied Choice treatment would be greater than in the One-Message No Choice treatment.

The data in Tables 5, 6, and 7 indicate that only the latter hypothesis was supported, and it only partially.* For this hypothesis, analyses of variance yielded a significant F ratio for the bombs-missiles

*A re-analysis of the data was performed after removing those subjects who, in the pretest, registered attitudes that were less than one scale position per judging scale away from the maximum position advocated by the message. The object was to determine whether the lack of differences between groups was in any way related to negative changes on the part of these subjects. No changes in the relationships among the treatment groups were found.

concept, while that for combined change approached significance. The two groups did not differ on the shelter concept.

Table 5

Mean Change in Attitude Toward Two Concepts, by Treatment Groups

Group	N		Change toward bombs-missiles	Change toward shelters	Combined change
1M-NC	76	Mean	4.632	2.882	7.514
		S.D.	7.018	6.400	8.564
2M-C	58	Mean	4.173	3.241	7.414
		S.D.	8.308	5.385	10.752
2M-SC	73	Mean	3.726	3.740	7.466
		S.D.	7.258	6.618	9.774
2M-CC	46	Mean	4.065	2.783	6.848
		S.D.	7.200	6.432	10.295
2M-DC	64	Mean	7.391	2.953	10.344
		S.D.	7.508	4.812	8.696

Table 6

Summary of Analyses of Variance on Attitude Change Scores for Four Treatment Groups (Hypothesis 1)

Bombs-missiles concept:

Source of Variation	df	SS	MS	F
Treatments	3	31.071	10.357	F=.188
Within groups	249	13753.285	55.234	$F_{.10}(3,120df)=.194$
Total	252	13784.356		

Shelters concept:

Source of Variation	df	SS	MS	F
Treatments	3	37.074	12.358	F=.316
Within groups	249	9740.436	39.118	$F_{.25}(3,120df)=.405$
Total	252	9777.510		

Table 6-Continued

Combined change:

Source of Variation	df	SS	MS	F
Treatments	3	14.828	4.943	F=.052
Within groups	249	23739.156	95.338	$F_{.05}(3,120df)=.117$
Total	252	23753.984		

Table 7

Summary of Analyses of Variance on Attitude Change Scores for One-Message No Choice and Two-Message Denied Choice Treatment Groups (Hypothesis 2)

Bombs-missiles concept:

Source of Variation	df	SS	MS	F
Treatments	1	264.475	264.475	F=5.038
Within groups	138	7244.918	52.499	$F_{.975}(1,120df)=4.50$
Total	139	7509.393		

Shelters concept:

Source of Variation	df	SS	MS	F
Treatments	1	.178	.178	F=.005
Within groups	138	4530.793	32.832	$F_{.05}(1,120df)=.004$
Total	139	4530.971		

Combined change:

Source of Variation	df	SS	MS	F
Treatments	1	278.368	278.368	F=3.742
Within groups	138	10265.425	74.387	$F_{.95}(1,120df)=3.92$
Total	139	10543.793		

Induced Choice and Secondary Measures

No predictions had been made about possible relationships between experimental degrees of choice and the other dependent measures. The data on these measures are presented in Tables 8-15. In no case does analysis of variance indicate a significant difference between groups. There is, therefore, no basis for inferring that the treatments had any effect on posttest attitudes toward message sources, predictions by subjects of the sources' attitudes toward the concepts, level and kind of interest in reading additional material about the concepts, or willingness to participate in similar future research.

Table 8

Comparison of Treatment Groups on Attitudes Toward Source

	Treatment Group				
	1M-NC	2M-C	2M-SC	2M-CC	2M-DC
Mean position (for 8 scales)	+1.548	+1.662	+1.589	+1.492	+1.533

Table 9

Summary of Analysis of Variance on Attitudes Toward Source

Source of Variation	df	SS	MS	F
Treatments	4	58.635	14.659	F=.655
Within groups	312	6984.198	22.385	$F_{.50}(4,120df)=.844$
Total	316	7042.833		

Table 10

Comparison of Treatment Groups on Perceptions of Sources' Positions on the Two Experimental Concepts

Concept	Treatment Group 1M-NC	2M-C	2M-SC	2M-CC	2M-DC
Bombs-missiles: mean position on 5 scales	-2.129	-2.152	-2.345	-2.117	-2.128
Shelters: mean position on 5 scales	+2.616	+2.621	+2.586	+2.639	+2.616

Table 11

Summary of Analyses of Variance on Perceptions of Sources' Positions on the Two Experimental Concepts

Bombs-missiles concept:

Source of Variation	df	SS	MS	F
Treatments	4	64.725	16.181	F=.654
Within groups	312	7722.436	24.751	$F_{.50}(4,120df)=.844$
Total	316	7787.161		

Shelters concept:

Source of Variation	df	SS	MS	F
Treatments	4	2.198	.550	F=.068
Within groups	312	2533.411	8.120	$F_{.05}(4,120df)=.177$
Total	316	2535.609		

Table 12

Comparison of Treatment Groups on Measures of Information Seeking

Measure	Treatment Group 1M-NC	2M-C	2M-SC	2M-CC	2M-DC
Mean number information items selected per subject	2.592	2.328	2.452	2.304	2.484
Proportion selecting...					
...pro-weapons item	.658	.603	.541	.457	.641
...anti-weapons item	.474	.328	.432	.391	.453
...pro-shelter item	.408	.310	.311	.326	.328
...anti-shelter item	.316	.379	.419	.413	.406
...other issues item	.737	.707	.757	.717	.656

Table 13

Summary of Analyses of Variance on Measures of Information Seeking

Mean number of information items per subject

Source of Variation	df	SS	MS	F
Treatments	4	3.455	.864	F=.608
Within groups	312	442.936	1.420	$F_{.50}(4,120df)=.844$
Total	316	446.391		

Proportion selecting pro-weapons item:

Source of Variation	df	SS	MS	F
Treatments	4	1.475	.369	F=1.53
Within groups	312	75.213	.241	$F_{.90}(4,120df)=1.50$
Total	316	76.688		

Proportion selecting anti-weapons item:

Source of Variation	df	SS	MS	F
Treatments	4	.824	.206	F=.841
Within groups	312	76.375	.245	$F_{.50}(4,120df)=.844$
Total	316	77.199		

Table 13-Continued

Proportion selecting pro-shelter item:

Source of Variation	df	SS	MS	F
Treatments	4	.526	.132	F=.584
Within groups	312	70.357	.226	$F_{.50}(4,120df)=.844$
Total	316	70.883		

Proportion selecting anti-shelter item:

Source of Variation	df	SS	MS	F
Treatments	4	.546	.137	F=.573
Within groups	312	74.501	.239	$F_{.50}(4,120df)=.844$
Total	316	75.047		

Proportion selecting other issues item:

Source of Variation	df	SS	MS	F
Treatments	4	.369	.092	F=.449
Within groups	312	64.079	.205	$F_{.50}(4,120df)=.844$
Total	316	64.448		

Table 14

Comparison of Treatment Groups on Proportion Willing to Participate in a Future Research Project

	Treatment Group				
	1M-NC	2M-C	2M-SC	2M-CC	2M-DC
Proportion willing	.895	.914	.890	.891	.875

Table 15

Summary of Analysis of Variance on Proportions Willing to Participate in a Future Research Project

Source of Variation	df	SS	MS	F
Treatments	4	.046	.0115	F=.105
Within groups	312	34.307	.110	$F_{.05}(4,120df)=.177$
Total	316	34.353		

CHAPTER IV

DISCUSSION AND CONCLUSIONS

This study was intended to determine the effects of varying degrees of choice between messages on change in attitude toward concepts contained in the messages. Five conditions of exposure to a persuasive message were established, in which the degree of choice in attending to one message rather than another was systematically varied. It was hypothesized that:

1. Increasing degrees of choice between messages would lead to increasing amounts of attitude change toward two concepts contained in the message. The hypothesis was not confirmed.

2. Presentation of message alternatives, followed by specification of which one is to be read (denial of choice), would lead to greater attitude change than presentation of only one message. This hypothesis was partially supported.

An exploration of the relationships between degree of choice and certain other measures was also undertaken. There was no evidence that variation among choice treatments had any effect on posttest attitudes toward message sources, on predictions by subjects of the sources' attitudes toward the concepts, on level and kind of interest in reading material about the concepts, or on willingness to participate in similar future research.

Each of these findings will be discussed in turn in the following pages, with the primary focus of attention being on the failure of the degree of choice inductions to produce differential attitude change. The relationship of the findings to the theoretic perspective which supported the study will be considered briefly, and suggestions for further tests of the hypotheses will be offered.

Perceived Choice

Before proceeding to a discussion of the results of tests of the hypotheses, it may be well to consider again the relationship between the experimental treatments and the measure of perceived choice. Although the treatments produced significant differences in amount of perceived choice, the lack of differences in attitude change raises the question of whether the treatments also produced effective differences in degree of choice. The perceived choice measure was considered an index of the success of the degree of choice inductions; however, the obtained difference between the choice and no choice groups is not large (approximately one point on a seven-point scale), the mean levels of perceived choice do not get close to the "much" point on the judging scale, and the within-group variances are high.

To get a clearer picture of the relationship between degree of choice presented in the treatments and the amount of choice perceived, a frequency table based on these two variables was constructed (Table 16). Chi-square analysis supported an assumption of relationship between the two variables, but the distribution of the data leaves the nature of this relationship in some doubt. It seems clear, however, that many subjects in the no-choice treatments perceived themselves as

Table 16

Distribution of Subjects by Treatment Groups and Levels of Perceived Choice

Perceived choice level	Treatment Group 1M-NC	2M-C	2M-SC	2M-CC	2M-DC
High (scale 5-6)	19	20	22	9	13
Middle (scale 2-4)	19	20	35	23	22
Low (scale 0-1)	38	18	17	14	29
N	(76)	(58)	(74)	(46)	(64)

$\chi^2 = 22.46$, $p < .005$

having much choice while, conversely, many subjects in the choice treatments perceived themselves as having little. These data suggest that the treatments were not highly effective in producing differential perceptions of amount of choice.

In a study discussed in Chapter I, Brehm and Cohen (1959b) reported failure of their choice inductions to produce expected differences in the amount of choice felt by subjects, and in attitude change. They found, however, a significant relationship between felt choice and attitude change. A similar result was obtained in a pilot test for the present study ("high" perceived choice subjects changed significantly more than the "medium" or "low" groups did).

The relationship in the present study between perceived choice and attitude change was determined by means of correlational procedures. Subjects who, on the pretest, were at or near the positions advocated by the message were omitted on the assumption that they would contribute nothing to the analysis, since attitudes must have room to change if a potentially influencing variable is to show its effect.

Product moment coefficients were calculated, but the expected relationship was not confirmed (see Table 17).

Table 17

Correlations Between Level of Perceived Choice and Attitude Change

Concept	N	r
Bombs-missiles	300	.0116
Shelters	245	.0513
Combined change	230	.0031

The complete absence of correlation is startling. Because the earlier evidence makes doubtful the conclusion that perceived choice and attitude change are not related, the validity of the perceived choice measure must be questioned.

As indicated in Chapter I, Cohen (1960) has pointed out that in many studies there is some question as to just what the subjects have or have not agreed to do. Experimental subjects, even in what are supposed to be "no-choice" treatments, almost always have available the possibility of choosing not to do whatever it is that they are asked. There is also the question of how important the subjects perceive the situation to be, and what they see as the consequences of one or another course of action. If there were choices other than degree of choice between messages operating in this study, and if they and their possible consequences were differentially perceived by the subjects, it might well follow that the perceived choice measure was indexing several variables rather than degree of choice between messages alone. Some informal data collected after administration of the treatments suggests that this may be the case.

Six weeks after the treatments, the experimenter discussed the study with the two class groups from which the experimental data had been collected. Prior to the discussion, subjects responded anonymously to several probe questions. They were asked first to recall the situation when the treatment materials were distributed, and to repeat the alternative courses of action they remembered themselves as having at the time.

Responses to other questions permitted separation of subjects who had been in the two no-choice groups from those who had been in the three choice groups. Approximately three-fourths of those from the choice treatments listed some variant of "selection of one article or another" as the alternatives they remember having. Ten percent said they could have done well, done poorly, or not done at all what was asked. In contrast, nearly one-third of those in the no-choice treatments mentioned these latter alternatives. Another one-third of the no-choice subjects said they had had no alternatives. Only about five percent of choice treatment subjects gave this answer. Additionally, 20 percent of the no-choice treatment subjects saw their alternatives as the various judgments they could give on the semantic differential scales.

Probing further into this area, subjects were asked whether they remembered feeling at the time that they didn't have to do what was asked. About half said "yes" and half said "no;" yet all but two subjects said that they had complied. There were no differences between choice and no-choice groups with respect to reasons for compliance. Approximately one-third said they saw the exercise as part of the class, they usually do what their instructors ask, their names were on the

questionnaire and to refuse might affect their grades, it was necessary, they had no choice in the matter, or that it never occurred to them to refuse. Another one-fifth said it was the right thing to do, they wanted to cooperate, they felt a sense of responsibility, or there was no good reason not to carry out the request. About one in eight mentioned helping in the survey, while 15 percent gave variants of "conformity" or "class pressure" as their reasons.

These responses, though informal, suggest that the degree of choice variable was not the only choice variable operating in the experimental situation, and that the kinds of choice perceived may have been related to the treatments. In particular, subjects in the no-choice treatment groups appear to have been more aware of the alternatives of cooperating or not cooperating than were those in the choice treatment groups. The responses also suggest that the cooperate-not cooperate choice was influenced by the nature of the classroom situation; that inherent authority characteristics influenced perceptions of what was being asked of them, and may also have affected their responses to the treatments and the attitude scales.

Questions were also asked probing perceptions of the reading assignment. More than one-half of both choice and no-choice subjects answered "slightly" or "mildly" when asked how interested they had been in what they read. From one-fifth to one-fourth said "quite" or "fairly" interested; about 1 in 15 said they were not interested at all.

Choice group members were asked whether the choice between the articles was meaningful; over one-half said no. Over one-half also said that they thought it made no difference which article they picked.

Several subjects reported, in response to another question, that they had made their selection by simply taking the first article they pulled from the packet. The choice between messages apparently was not seen as much of a choice by many; the similarity in topic implied by the titles and the relative disinterest in the topic made the choice trivial.

It appears, then, that at least three other variables were operating in addition to and in interaction with choice between messages: a choice to cooperate or not cooperate, sharply varying feelings about the importance of the task assigned, and (for the choice subjects) varying feelings about the importance and consequences of the choice between messages.

The interaction of these variables might well affect the validity of the perceived choice measure by making the basis of response to it a highly variable one. The assumption of the theoretic rationale for this study, and of the theory of cognitive dissonance from which it was developed, is that the making of a choice gives rise to some level of motivation to justify the alternative selected. The greater the difficulty and importance of the choice - that is, the higher the probability and the more serious the consequences of making an error - the stronger the motivation to justify.

The difficulty and the importance of choice between messages were varied in this study and it seems possible that for some subjects these manipulations were successful. For these subjects, degree of choice between messages was the principal variable, and they marked the perceived choice scale in accordance with the degree of choice between messages that they had. For others, however, something else may have

been happening. In the choice treatment groups, for example, some subjects may have felt that they had much choice between messages but that the choice was trivial and the important fact was that they had no real choice in cooperating. The effect of this might have been for them to mark the perceived choice scale at the high choice end but to feel that they did not have any that counted; hence they had little motivation to justify their behavior and attitude change was held to a minimum.

Similarly, subjects in the no-choice treatment groups may have felt that they had no choice between messages, but that they had a clear choice in whether or not to cooperate. The latter could have been construed as choice in what they read. If so, this might lead them to both mark the perceived choice scale at the high end and to have high motivation to justify behavior; consequently there would be more attitude change than might otherwise have been the case. The effects of such actions would be to invalidate the perceived choice measure and to contribute strongly to the lack of correlation between it and attitude change.

Degree of Choice and Attitude Change

The informal data just discussed seem also to be related to the lack of differences in attitude change between the first four treatment groups. Considering only the One-Message No Choice and Two-Message Choice treatments, it seems likely that in the latter the similarity of the two messages presented made the choice between them minimally difficult, or trivial. If the theoretic positions supporting this study are correct, the high similarity between messages and consequent lack of

difficulty in choosing would result in minimum dissonance or motivation to justify the choice. This, in turn, would result in reduced attitude change toward the concepts in the messages.

For all subjects, the extent to which they did not care or were opposed to reading material on the subject of the message would mean that the decision to cooperate represented a form of commitment to discrepant behavior which had to be justified. It seems possible that this situation occurred more often in the One-Message No Choice treatment group, in that subjects did not have other choices to occupy their attention and hence were more conscious of the cooperate-not cooperate alternatives. The effect of this would be to increase the amount of attitude change resulting from reading the message.

The lack of success of the stress and challenge inductions would appear to be due in part to the relative personal anonymity under which subjects operated in the experiment. They were not confronted with the consequences of their choices; that is, no one questioned their selections at the time and they were given no reason to expect that anyone would be doing so later. Furthermore, the fact that the experimenter says a choice is not trivial does not necessarily make it less so for the subject. The Deutsch, Krauss, & Rosenau (1962) study, in contrast, made it quite clear to the subjects that they would have to account for their choices, and do so in front of groups of their peers. It seems reasonable to argue that one does not worry much about justifying his choices unless he knows he is going to be challenged, or he has been.

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The challenge presented to the Two-Message Challenged Choice subjects was not a strong one, particularly since it did not involve personal confrontation. Additionally, it may have been that the request that they write down the reasons for their choice took care of any stress produced by the challenge. They were asked to justify their selection, they did so, and that was all there was to it.

In sum, what seems to have happened in this study is that certain confounding variables interfered with the experimental variable in such a way that motivation to change attitudes was increased somewhat beyond expectation in the no-choice treatment groups and decreased in the choice treatment groups.

Denial of Choice

The relative success of the Two-Message Denied Choice treatment provides support for the theoretic hypothesis that compliance following denial of choice is a form of commitment to discrepant behavior which leads to change in attitude toward aspects of the behavior. The fact that the differences produced by the treatment were confined to one of the two concepts may be due to the differing nature of the concepts, differences in the nature of the persuasive arguments presented about each, and the somewhat more restricted opportunities for change associated with the shelters concept.

Subjects' pretest attitudes toward shelters averaged between slightly and quite favorable, and the message attempted to make them more favorable. There were a number of subjects already at or close to the limits of favorability. Attitudes toward the bombs-missiles concept, on the other hand, were between neutral and slightly favorable on the

average, and the message attempted to move them to an unfavorable position. In contrast to the shelter arguments in the message, the position advocated on bombs and missiles was somewhat more novel and, if one basic premise was accepted, considerably more compelling. The net effect was to make the bombs-missiles concept a much more sensitive indicator of motivation for attitude change.

The Secondary Measures

The lack of differences between treatment groups with respect to the other dependent variable measures is not surprising, given no differences with respect to attitude change. It might be argued that attitude toward sources and information seeking are alternatives to attitude change as means of justifying choice behavior, and that lack of attitude change differences would, therefore, lead one to expect differences on these alternatives. However, the high similarity of the first four treatments with respect to attitude change suggests that they did not differ in inducing motivations for justification; hence, no differences could be expected on the other measures either. The fact that the Two-Message Denied Choice treatment was not different on any of the alternative measures suggests that whatever additional justification motivation was stimulated by the denial of choice was focused entirely on attitudes toward the experimental message concepts.

Theoretic Considerations

To the extent that the explanatory speculations presented here are valid, the lack of differences obtained in this study does not seriously question the validity of the theory supporting it. The

findings do, however, point to two problem areas: (1) the lack of specificity of the theory with respect to the relatively complex relationships between various interacting choices, and behavioral and cognitive change, and (2) the question of whether choice between messages is a meaningful variable in many day-to-day living situations. The first of these is a matter of continuing research, with some part of success contingent upon development of methods for accurately identifying and/or controlling the several kinds of choices that may operate in any given experimental situation. The second question also involves further research, but there seems the real possibility that choice between messages is a minor variable at best, nearly always being subordinated to the influence of other variables in the situation.

Suggestions for Further Research

Further test of both hypotheses seems warranted. The difficulties encountered in this study suggest that there are several design and control problems which require solution before unambiguous results can be obtained.

1. The cooperate-not cooperate variable must be isolated and controlled. It does not seem likely that this variable can be eliminated, and this research suggests that it will be extremely difficult to standardize it at any specified level. One approach might be to systematically vary the incentive to participate; that is, in one condition all subjects would be participating under a requirement that they do so, while in another condition they would be involved only on an explicitly stated volunteer basis. This decision to participate, however made, probably should be isolated in time from any part of the experiment itself.

2. A related requirement is that the experimental situation be such that the relationship between experimenter and subject, from the subject's point of view, can be specified by the experimenter and taken into account. While it affects the cooperate-not cooperate variable, in that it structures the subject's perceptions of the amount of freedom and choice he has, it is probably more than that. It may affect the subject's attitudes toward participation in the research task and his perceptions of the rewards that might accrue therefrom. It may also affect directly the way in which the treatments are perceived; i.e., the level of threat involved and the possible consequences of one course of action or another. It may be, for example, that a professorial experimenter would secure consistently different results than an experimenter who appeared to be a peer of the subjects. It may also be that there would be consistent differences between large group, small group, and individual administration.

3. The messages will have to be seen as meaningfully different. This probably means that, to make the headlines communicate such a difference, the messages themselves will have to be different. If they are, they will need to be extensively and carefully pretested to insure that they are equally persuasive. It would probably be well that they be on topics which would be seen by the subjects as relevant to their current interests.

4. The message topics should be those on which subjects do not have prior attitudes, or on which attitudes are homogeneous. The object is to keep variability within statistically manageable levels, a problem in this study. Widely varying but strongly held attitudes

toward a concept inevitably mean a large variance for change scores; correspondingly, it is more difficult to detect differences between treatments.

5. Stresses and challenges to increase the importance of choices will probably have to carry a clear implication that the subject will be held accountable for his decisions - that judgments of him will be made on the basis of what he chooses to do.

6. Above all, the experimenter will need several measures to index the subject's perceptions of what is happening to him throughout the study. In this way, the experimenter may gain some control over confounding variables. This he must do if the characteristics of choice are as complex as they appear to be.

REFERENCES

1. Allyn, Jane & Leon Festinger. The effectiveness of unanticipated persuasive communications. J. Abnorm. Soc. Psychol., 62: 35-40, 1961.

2. Bennett, E. B. Discussion, decision, commitment, and consensus in "group decision." Human Relations, 8: 251-273, 1955.

3. Berlo, David K. The fallout protection booklet: IV. Characteristics of readers, and an analysis of the impact of the booklet. Communication Research Report, Dept. of Communication, Michigan State Univ., 1963.

4. Berlyne, D. E. Conflict, arousal, and curiosity. New York: McGraw-Hill, 1960.

5. Brehm, J. W. Postdecision changes in the desirability of alternatives. J. Abnorm. Soc. Psychol., 52: 384-389, 1956.

6. Brehm, J. W. Increasing cognitive dissonance by a fait accompli. J. Abnorm. Soc. Psychol., 58: 379-382, 1959.

7. Brehm, J.W. & A. R. Cohen. Re-evaluation of choice alternatives as a function of their number and qualitative similarity. J. Abnorm. Soc. Psychol., 58: 373-378, 1959a.

8. Brehm, J. W. & A. R. Cohen. Choice and chance relative deprivation as determinants of cognitive dissonance. J. Abnorm. Soc. Psychol., 58: 383-387, 1959b.

9. Brehm, J. W. & A. R. Cohen. Explorations in cognitive dissonance. New York: John Wiley & Sons, 1962.

10. Brock, T. C. & J. E. Blackwood. Dissonance reduction, social comparison, and modification of others' opinions. J. Abnorm. Soc. Psychol., 65: 319-324, 1962.

11. Cohen, A. R. Communication discrepancy and attitude change: a dissonance theory approach. J. Pers., 27: 386-396, 1959.

12. Cohen, A. R. Attitudinal consequences of induced discrepancies between cognitions and behavior. Pub. Opin. Quart., 24: 297-318, 1960.

13. Cohen, A. R., J. W. Brehm & W. H. Fleming. Attitude change and justification for compliance. J. Abnorm. Soc. Psychol., 56: 276-278, 1958.

14. Cohen, A. R., J. W. Brehm, & B. Latané. Choice of strategy and voluntary exposure to information under public and private conditions. J. Pers., 27: 63-73, 1959.

15. Cohen, A. R., H. I. Terry & C. B. Jones. Attitudinal effects of choice in exposure to counterpropaganda. J. Abnorm. Soc. Psychol., 58: 388-391, 1959.

16. Combs, A. W. & Donald Snygg. Individual behavior. New York: Harper & Bros., 1959.

17. Cottrell, L. S. & N. N. Foote. Sullivan's contributions to social psychology. In P. Mullahy (ed.), The contributions of Harry Stack Sullivan. New York: Hermitage, 1952.

18. Davis, K. E. & E. E. Jones. Changes in interpersonal perception as a means of reducing cognitive dissonance. J. Abnorm. Soc. Psychol., 61:402-410, 1960.

19. Deutsch, Morton, R. M. Krauss & Norah Rosenau. Dissonance or defensiveness? J. Pers., 30: 16-28, 1962.

20. Festinger, Leon. A theory of cognitive dissonance. Palo Alto: Stanford Univ. Press, 1957.

21. Festinger, Leon & J. M. Carlsmith. Cognitive consequences of forced compliance. J. Abnorm. Soc. Psychol., 58: 203-210, 1959.

22. Hovland, C. I. & M. J. Rosenberg. Summary and further theoretical issues. In M. J. Rosenberg, C. I. Hovland, W. J. McGuire, R. P. Abelson & J. W. Brehm, Attitude organization and change. New Haven: Yale Univ. Press, 1960.

23. Janis, I. L. Decisional conflicts: a theoretical analysis. J. Conflict. Resol., 3: 6-27, 1959.

24. Kelly, G. A. The psychology of personal constructs. New York: Norton & Co., 1955.

25. Kerrick, J. S. & D. A. McMillan. The effects of instructional set on the measurement of attitude change through communications. J. Soc. Psychol., 53: 113-120, 1961.

26. Lazarsfeld, Paul, Bernard Berelson & Hazel Gaudet. The people's choice. New York: Columbia Univ. Press, 1948.

27. Lecky, Prescott. Self-consistency; a theory of personality. (Edited and interpreted by F. C. Thorne) New York: Island Press, 1951.

28. Lewin, Kurt. Forces behind food habits and methods of change. Bull. Nat. Res. Coun., 108: 35-65, 1943.

29. Maccoby, Nathan & E. E. Maccoby. Homeostatic theory in attitude change. Pub. Opin. Quart., 25: 538-545, 1961.

30. MacLean, M.S., Jr. Civil defense belief patterns: V. Change in belief. Communication Research Report, Dept. of Communication, Michigan State Univ., in preparation.

31. McGuire, W. J. A syllogistic analysis of cognitive relationships. In M. J. Rosenberg, C. I. Hovland, W. J. McGuire, R. P. Abelson, & J. W. Brehm, Attitude organization and change. New Haven: Yale Univ. Press, 1960.

32. Mead, G. H. Mind, self, and society. Chicago: Univ. of Chicago Press, 1934.

33. Miller, N. E. Learnable drives and rewards. In S. S. Stevens (ed.), Handbook of experimental psychology. New York: John Wiley & Sons, 1951.

34. Murphy, Gardner. Social motivation. In G. Lindzey (ed.), Handbook of social psychology. Cambridge: Addison-Wesley, 1954.

35. Osgood, C. E., G. J. Suci & P. H. Tannenbaum. The measurement of meaning. Urbana: Univ. of Illinois Press, 1957.

36. Rabbie, J. M., J. W. Brehm & A. R. Cohen. Verbalization and reactions to cognitive dissonance. J. Pers., 27: 407-417, 1959.

37. Rogers, C. R. Some observations on the organization of personality. Amer. Psychol., 2: 358-368, 1947.

38. Rogers, C. R. Client-centered therapy. Boston: Houghton Mifflin Co., 1951.

39. Sarbaugh, L. E. Facet analysis of source credibility scales from MSU factor analysis study. Dept. of Communication, Michigan State Univ. (mimeo), 1963.

40. Smith, E. E. The power of dissonance techniques to change attitudes. Pub. Opin. Quart., 25: 626-639, 1961.

41. Sullivan, H. S. The interpersonal theory of psychiatry. New York: Norton & Co., 1953.

42. Wells, W. D. & Georgianna Smith. Four semantic rating scales compared. J. Appl. Psychol., 44: 393-397, 1960.

43. Zimbardo, P. G. Involvement and communication discrepancy as determinants of attitude change. J. Abnorm. Soc. Psychol., 60: 86-94, 1960.

APPENDIX A

Experimental Message

The modern defense question -
how to solve any one problem
without creating two more.

BOMBS OR BURROWS - A DEFENSE DILEMMA

by Prof. Wilson B. Hamilton
Noted Political Scientist
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Digest of an article appearing in a recent issue of a national magazine.

BOMBS OR BURROWS - A DEFENSE DILEMMA

By Prof. Wilson B. Hamilton

In this day of spy-in-the-sky satellites, intercontinental missiles, and nuclear bombs and submarines - of Cubas, Viet-Nams, and Congos - we're constantly reminded that man possesses enough power to destroy the world. If you're like me, you'd prefer to read and hear about pleasanter things than the threat of nuclear war and the terrible consequences that would result.

Unpleasant as the subject is, we do no good for ourselves or anyone else by avoiding it. We cannot, as individuals, do very much about lessening international tensions but we can do a great deal about one of the most vulnerable spots in our defense preparations - the helplessness of our civilian population in the event of enemy attack.

Let's take a hard look at the facts.

In an atomic war, millions of people would be killed by the blast, heat, and intense radiation of the bomb bursts. There appears to be no practical way to avoid this loss of life, nor the terrible destruction that would take place where the bombs hit. Our hope is that wise and positive foreign and defense policies will prevent such a catastrophe from ever occurring.

However - we simply must admit that the danger of war does exist, and probably will for a long time to come. We can't ignore it, or wish it away. We don't want a war, and we don't know that there will ever be one. But we do know that forces hostile to us possess weapons that could destroy us if we were unready. And we are unready, in my judgment, because too much of our thinking has been directed at trying to scare the enemy off instead of planning what to do if he doesn't scare.

I should like to make just three points. One is that you can protect yourself against radioactive fallout - the great new hazard of today's

weapons - and live safely through this part of the danger of a nuclear attack. The second point is that life for the survivors of an attack will be possible, though one of extraordinary hardship. And point three is that we spend far too many dollars building more nuclear bombs and missiles than we need and far too few dollars developing and producing a system of shelters and defenses for our civilian population. Let's look at each of these points briefly.

The survival question.

No one knows with certainty just how many or what targets an enemy might strike. Even in an extensive attack, however, only about seven percent of our land area would be directly affected by the blasts. The great danger to the rest of the country would be radioactive fallout, but this danger would lessen with time since much of the radioactivity in fallout particles decays rapidly and would not last long. People protected by adequate shelter would be alive and well.

Now, everyone has some protection available, although it is probably far from enough. The lapse of time is a natural protection because of the decay factor of radioactivity. The longer it takes fallout to reach an area, or the longer it's kept away from you after it arrives, the less radioactive it is. Distance is also a natural protection because the radiation exposure is less the further away a person is from the fallout particles. Thus, in a fallout area, if you are inside a building, it is better to stay toward the center of it and away from the outside walls. In a building such as a church, with fallout on the roof 20 feet overhead, you would get less radiation exposure from above than you would if you were inside a shed or house with a similar rooftop only five feet overhead.

In spite of all this, truly important protection comes from shielding and that requires a shelter of some kind. Even a basement, which under some

conditions might cut radiation to 10 percent of outside levels, would not be adequate if the outside rate were very high. Though the human body can stand some radiation - and does so every day from natural sources - it cannot tolerate exposure to intense radiation in short periods of time. Radiation effects accumulate, but the body will gradually repair most of the damage caused by nonlethal doses. The trick is to keep the level of exposure to radiation within safe limits through shielding and avoidance of radioactive areas and objects. The person who can do this will remain healthy and be able to work productively.

A strong program of community shelter development would pay enormous dividends in the event of attack. Outside primary target areas the chief danger is from fallout and the shelters would be highly effective against that. In rural areas, people have to think in terms of family shelters in their homes. But in the small towns and cities of America, the community shelter effers far and away the best possibilities of protection. In addition to strength and safety and economy, it offers maximum opportunity for people to support each other in the event of attack. Furthermore, the community shelter is valuable for other uses - community center, group recreation, meeting rooms, and many other activities.

Life after attack.

Out Civil Defense people say that shelters should be stocked so that people will be able to live in them for up to two weeks. This does not mean, however, that in the event of attack you would go to the shelter and stay there night and day for two weeks and then leave it for good. The amount of fallout would vary from area to area, and the intensity of radiation would decrease with time. Because the body can tolerate small doses of radiation, in less severely affected areas you would be able to begin leaving the shelter area for short periods of time within a few days - perhaps even after 48 hours. You might also want to use the shelter area for considerably longer than

two weeks - as a sleeping, eating, and rest area - a base of operations for a time while decontamination was being carried out.

Learning to live with the long-range effects of radioactivity will not be easy; it will be possible. Radiation cannot be destroyed; radioactive particles can only be removed and isolated until natural decay takes care of the problem. We are learning how this can be done effectively. Food and water under cover would be usable as long as the fallout particles on the cover were kept away from the food and water underneath. Water from covered springs and wells would be essentially free from contamination and could be used with confidence.

The rebuilding job would be enormous, but it can be done. Many peoples in the past faced overwhelming odds in hostile lands and were able to build good lives for themselves. It's particularly important that our people remain healthy, for we would need all the skills and resources that we possessed to rebuild and redevelop. All our people need to protect themselves and their families against fallout - and with help they can do this quite well. They need to learn all they can about dealing with the effects of radiation on crops and land, transportation systems, and every other essential aspect of living. Fortunately, research is providing basic knowledge and specific means to lessen the seriousness of these effects.

What do we need?

So far, I have argued that survival in nuclear war is possible and that life afterwards, though hard, would be livable. The third point, that we need to re-allocate some of our resources from weapons production to civilian protection programs, is based on two firm convictions: (1) we do not have anything even approaching an adequate system of defense for our civilian population, and (2) we already have stockpiled more retaliatory nuclear power than we need.

To illustrate, let us suppose that you and I are enemies and that we each have a rack full of rockets aimed at each other's house. No matter what I do, you can destroy me. Now, you have some additional money for your defense. Should you spend it on another rack of rockets, in the vain hope that I'll become more frightened than you think I am now, or should you invest it in measures that might save the lives of your family in case I don't scare at all and start shooting at you?

The United States - right now - is fully capable of destroying the Soviet Union - three or four times. On the other hand, we do not yet know enough about fallout protection and radiation effects. We do not have very many shelters for our people, and almost none for our livestock and food supplies. We need a strong program of civilian defense operating at all levels of government - a program of research, of encouragement and counsel, of moral and financial support. Such a program costs money - a very great deal of it. We can have that money, without increasing our tax burden and without jeopardizing our security in the slightest, by simply producing a little less of what we don't need and a little more of what we do.

There is no escaping the fact that nuclear conflict would leave a tragic world. There would be havoc, devastation, hardship, and death. But it need not be a time of despair. Realistic preparation for what might happen is far more useful than blindness, whether from fear or ignorance. A sane and sober person can assume that, whatever comes to pass, he would draw on his reserve of courage and intelligence and faith and begin to build again. Let's do the things that we have to do now to insure him that chance.

# # #

NOTE, PLEASE:

Would you please put this article back in its envelope and then open the small envelope that is there.

APPENDIX B

Pretest Instrument

Please wait for instructions before beginning.

Destroying all U.S. and Soviet nuclear weapons

so they cannot be used for war.

Worthless	extremely	quite	slightly	neither	slightly	quite	extremely Valuable
Weak	extremely	quite	slightly	neither	slightly	quite	extremely Strong
Bad	extremely	quite	slightly	neither	slightly	quite	extremely Good
Foolish	extremely	quite	slightly	neither	slightly	quite	extremely Wise
Negative	extremely	quite	slightly	neither	slightly	quite	extremely Positive
Awful	extremely	quite	slightly	neither	slightly	quite	extremely Nice
Dislike	extremely	quite	slightly	neither	slightly	quite	extremely Like
Trivial	extremely	quite	slightly	neither	slightly	quite	extremely Important

U.S. efforts to be first

to land a man on the moon.

Weak	:	:	:	:	:	:	Strong
	extremely	quite	slightly	neither	slightly	quite	extremely
Foolish	:	:	:	:	:	:	Wise
	extremely	quite	slightly	neither	slightly	quite	extremely
Awful	:	:	:	:	:	:	Nice
	extremely	quite	slightly	neither	slightly	quite	extremely
Trivial	:	:	:	:	:	:	Important
	extremely	quite	slightly	neither	slightly	quite	extremely
Worthless	:	:	:	:	:	:	Valuable
	extremely	quite	slightly	neither	slightly	quite	extremely
Bad	:	:	:	:	:	:	Good
	extremely	quite	slightly	neither	slightly	quite	extremely
Negative	:	:	:	:	:	:	Positive
	extremely	quite	slightly	neither	slightly	quite	extremely
Dislike	:	:	:	:	:	:	Like
	extremely	quite	slightly	neither	slightly	quite	extremely

Closing U.S. missile bases

in Europe and Asia.

Worthless	_____	_____	_____	_____	_____	_____	_____ Valuable
	extremely	quite	slightly	neither	slightly	quite	extremely
Weak	_____	_____	_____	_____	_____	_____	_____ Strong
	extremely	quite	slightly	neither	slightly	quite	extremely
Bad	_____	_____	_____	_____	_____	_____	_____ Good
	extremely	quite	slightly	neither	slightly	quite	extremely
Foolish	_____	_____	_____	_____	_____	_____	_____ Wise
	extremely	quite	slightly	neither	slightly	quite	extremely
Negative	_____	_____	_____	_____	_____	_____	_____ Positive
	extremely	quite	slightly	neither	slightly	quite	extremely
Awful	_____	_____	_____	_____	_____	_____	_____ Nice
	extremely	quite	slightly	neither	slightly	quite	extremely
Dislike	_____	_____	_____	_____	_____	_____	_____ Like
	extremely	quite	slightly	neither	slightly	quite	extremely
Trivial	_____	_____	_____	_____	_____	_____	_____ Important
	extremely	quite	slightly	neither	slightly	quite	extremely

extremely quite slightly neither slightly quite extremely

Dislike_____:_____:_____:_____:_____:_____:_____Like

extremely quite slightly neither slightly quite extremely

Trivial_____:_____:_____:_____:_____:_____:_____Important

extremely quite slightly neither slightly quite extremely

Dislike_____:_____:_____:_____:_____:_____:_____Like

extremely quite slightly neither slightly quite extremely

Storing extra food and special equipment

in your home for emergency use.

Worthless	:	:	:	:	:	:	Valuable
	extremely	quite	slightly	neither	slightly	quite	extremely
Weak	:	:	:	:	:	:	Strong
	extremely	quite	slightly	neither	slightly	quite	extremely
Bad	:	:	:	:	:	:	Good
	extremely	quite	slightly	neither	slightly	quite	extremely
Foolish	:	:	:	:	:	:	Wise
	extremely	quite	slightly	neither	slightly	quite	extremely
Negative	:	:	:	:	:	:	Postive
	extremely	quite	slightly	neither	slightly	quite	extremely
Awful	:	:	:	:	:	:	Nice
	extremely	quite	slightly	neither	slightly	quite	extremely
Dislike	:	:	:	:	:	:	Like
	extremely	quite	slightly	neither	slightly	quite	extremely
Trivial	:	:	:	:	:	:	Important
	extremely	quite	slightly	neither	slightly	quite	extremely

Building more missiles and bombs

to use for retaliation

if Russia attacks us.

Weak	:	:	:	:	:	:	Strong
	extremely	quite	slightly	neither	slightly	quite	extremely
Foolish	:	:	:	:	:	:	Wise
	extremely	quite	slightly	neither	slightly	quite	extremely
Awful	:	:	:	:	:	:	Nice
	extremely	quite	slightly	neither	slightly	quite	extremely
Trivial	:	:	:	:	:	:	Important
	extremely	quite	slightly	neither	slightly	quite	extremely
Worthless	:	:	:	:	:	:	Valuable
	extremely	quite	slightly	neither	slightly	quite	extremely
Bad	:	:	:	:	:	:	Good
	extremely	quite	slightly	neither	slightly	quite	extremely
Negative	:	:	:	:	:	:	Positive
	extremely	quite	slightly	neither	slightly	quite	extremely
Dislike	:	:	:	:	:	:	Like
	extremely	quite	slightly	neither	slightly	quite	extremely

A community fallout shelter

in your own neighborhood.

Worthless	extremely	quite	slightly	neither	slightly	quite	extremely	Valuable
Weak	extremely	quite	slightly	neither	slightly	quite	extremely	Strong
Bad	extremely	quite	slightly	neither	slightly	quite	extremely	Good
Foolish	extremely	quite	slightly	neither	slightly	quite	extremely	Wise
Negative	extremely	quite	slightly	neither	slightly	quite	extremely	Positive
Awful	extremely	quite	slightly	neither	slightly	quite	extremely	Nice
Dislike	extremely	quite	slightly	neither	slightly	quite	extremely	Like
Trivial	extremely	quite	slightly	neither	slightly	quite	extremely	Important

Reduction of the U.S. defense budget by 20 percent or more.

Weak	extremely	quite	slightly	neither	slightly	quite	extremely Strong
Foolish	extremely	quite	slightly	neither	slightly	quite	extremely Wise
Awful	extremely	quite	slightly	neither	slightly	quite	extremely Nice
Trivial	extremely	quite	slightly	neither	slightly	quite	extremely Important
Worthless	extremely	quite	slightly	neither	slightly	quite	extremely Valuable
Bad	extremely	quite	slightly	neither	slightly	quite	extremely Good
Negative	extremely	quite	slightly	neither	slightly	quite	extremely Positive
Dislike	extremely	quite	slightly	neither	slightly	quite	extremely Like

Making a detailed plan, written out and rehearsed, specifying what each member of your family would do in the few minutes after warning was given of nuclear attack.

Weak	extremely	quite	slightly	neither	slightly	quite	extremely	Strong
Foolish	extremely	quite	slightly	neither	slightly	quite	extremely	Wise
Awful	extremely	quite	slightly	neither	slightly	quite	extremely	Nice
Trivial	extremely	quite	slightly	neither	slightly	quite	extremely	Important
Worthless	extremely	quite	slightly	neither	slightly	quite	extremely	Valuable
Bad	extremely	quite	slightly	neither	slightly	quite	extremely	Good
Negative	extremely	quite	slightly	neither	slightly	quite	extremely	Positive
Dislike	extremely	quite	slightly	neither	slightly	quite	extremely	Like

Stopping all nuclear weapons

testing in the U.S.,

even if Russia does not.

Worthless	extremely	quite	slightly	neither	slightly	quite	extremely	Valuable
Weak	extremely	quite	slightly	neither	slightly	quite	extremely	Strong
Bad	extremely	quite	slightly	neither	slightly	quite	extremely	Good
Negative	extremely	quite	slightly	neither	slightly	quite	extremely	Positive
Awful	extremely	quite	slightly	neither	slightly	quite	extremely	Nice
Dislike	extremely	quite	slightly	neither	slightly	quite	extremely	Like
Trivial	extremely	quite	slightly	neither	slightly	quite	extremely	Important
Foolish	extremely	quite	slightly	neither	slightly	quite	extremely	Wise

How interested are you in reading about

the arms race?	very much____	somewhat____	not at all____
the space race?	very much____	somewhat____	not at all____
community civil defense?	very much____	somewhat____	not at all____
disarmament problems?	very much____	somewhat____	not at all____
the Cuban situation?	very much____	somewhat____	not at all____
activities of NATO?	very much____	somewhat____	not at all____
desegregation problems?	very much____	somewhat____	not at all____

How interested would you be in a series of television programs exploring the chances and consequences of nuclear war, and some of the possible ways it might be prevented?

very much____ somewhat____ not at all___

How interested would you be in joining a small discussion group on civil defense problems and possibilities?

very much____ somewhat____ not at all____

How interested would you be in reading a small book explaining what was going on in some of the trouble spots of the world - Laos, The Congo, Berlin, Cuba?

very much____ somewhat____ not at all____

How good a job do you think the press is doing in helping people understand the problems involved in disarmament?

extremely____ somewhat___ not at all___

_____

Home County and State

_____ _____

Your age Your name

Thank you very much! You've been most helpful.

APPENDIX C

Posttest Instrument

On the following pages, please read carefully and follow all instructions exactly. Thank you.

Please read carefully and completely.

On the next few pages, you will find one idea listed at the top of the page followed by several judging scales - like this:

Government stocking of community shelters.

Good_____:_____:_____:_____:_____:_____:_____Bad
extremely quite slightly neither slightly quite extremely

Worthless_____:_____:_____:_____:_____:_____:_____Valuable
extremely quite slightly neither slightly quite extremely

Place one check mark (✓) on each scale in the space which most closely tells how you feel about the idea. If, for example, you feel that "government stocking of community shelters" is slightly bad, you would mark the good-bad scale this way:

Good_____:_____:_____:_____:✓:_____:_____Bad
extremely quite slightly neither slightly quite extremely

If you feel the idea is slightly good, mark the scale this way:

Good_____:_____:✓:_____:_____:_____:_____Bad
extremely quite slightly neither slightly quite extremely

If you feel quite strongly about the idea - think it quite good - mark it this way:

Good_____:✓:_____:_____:_____:_____:_____Bad
extremely quite slightly neither slightly quite extremely

If quite bad, mark it this way:

Good_____:_____:_____:_____:_____:✓:_____Bad
extremely quite slightly neither slightly quite extremely

If you feel exceptionally strongly about it - think it extremely bad, mark it this way:

Good_____:_____:_____:_____:_____:_____:✓Bad
extremely quite slightly neither slightly quite extremely

If extremely good, mark it this way:

Good✓:_____:_____:_____:_____:_____:_____Bad
extremely quite slightly neither slightly quite extremely

If you feel the idea is neither good nor bad, or if you don't know how you feel, or if you think the scale doesn't apply to the idea, mark the scale this way:

Good_____:_____:_____:✓:_____:_____:_____Bad
extremely quite slightly neither slightly quite extremely

Be sure to put one check mark, and only one, along each scale. There are 5 scales on each page; therefore, there should be 5 check marks on each page.

Building more missiles and bombs

to use for retaliation

if Russia attacks us.

Foolish	_____	_____	_____	_____	_____	_____	_____	Wise
	extremely	quite	slightly	neither	slightly	quite	extremely	
Awful	_____	_____	_____	_____	_____	_____	_____	Nice
	extremely	quite	slightly	neither	slightly	quite	extremely	
Worthless	_____	_____	_____	_____	_____	_____	_____	Valuable
	extremely	quite	slightly	neither	slightly	quite	extremely	
Bad	_____	_____	_____	_____	_____	_____	_____	Good
	extremely	quite	slightly	neither	slightly	quite	extremely	
Negative	_____	_____	_____	_____	_____	_____	_____	Positive
	extremely	quite	slightly	neither	slightly	quite	extremely	

A community fallout shelter

in your own neighborhood.

Worthless	:	:	:	:	:	:	Valuable
	extremely	quite	slightly	neither	slightly	quite	extremely
Bad	:	:	:	:	:	:	Good
	extremely	quite	slightly	neither	slightly	quite	extremely
Foolish	:	:	:	:	:	:	Wise
	extremely	quite	slightly	neither	slightly	quite	extremely
Negative	:	:	:	:	:	:	Positive
	extremely	quite	slightly	neither	slightly	quite	extremely
Awful	:	:	:	:	:	:	Nice
	extremely	quite	slightly	neither	slightly	quite	extremely

Prof. Wilson B. Hamilton

author of the article

"Bombs or Burrows - A Defense Dilemma"

Timid	extremely	quite	slightly	neither	slightly	quite	extremely	Bold
Unfriendly	extremely	quite	slightly	neither	slightly	quite	extremely	Friendly
Uninformed	extremely	quite	slightly	neither	slightly	quite	extremely	Informed
Irresponsible	extremely	quite	slightly	neither	slightly	quite	extremely	Responsible
Unclear	extremely	quite	slightly	neither	slightly	quite	extremely	Clear
Closedminded	extremely	quite	slightly	neither	slightly	quite	extremely	Openminded
Uncertain	extremely	quite	slightly	neither	slightly	quite	extremely	Certain
Worthless	extremely	quite	slightly	neither	slightly	quite	extremely	Valuable

The next two pages are similar to those you just completed, except that they ask you to react on the basis of how you think the author of the article you just read feels about the ideas. Please check these scales as you think he would do it.

How Professor Hamilton would rate the idea of

Building more missiles and bombs to use for retaliation if Russia attacks us.
(try to guess how he would check the scales.)

Foolish	_____	_____	_____	_____	_____	_____	_____ Wise
	extremely	quite	slightly	neither	slightly	quite	extremely
Awful	_____	_____	_____	_____	_____	_____	_____ Nice
	extremely	quite	slightly	neither	slightly	quite	extremely
Worthless	_____	_____	_____	_____	_____	_____	_____ Valuable
	extremely	quite	slightly	neither	slightly	quite	extremely
Bad	_____	_____	_____	_____	_____	_____	_____ Good
	extremely	quite	slightly	neither	slightly	quite	extremely
Negative	_____	_____	_____	_____	_____	_____	_____ Positive
	extremely	quite	slightly	neither	slightly	quite	extremely

You have read an article which presents one point of view on certain defense issues. Other materials are available which both support and oppose this author's stand. Which of the following would you be interested in reading? (Check as many or as few as you like.)

____A highly respected general's arguments in favor of increasing our stockpile of nuclear weapons.

____A prominent senator's view that a national community fallout shelter program would be a waste of money.

____The contention of a high State Department official that continued weapons production is dangerous and unnecessary.

____The arguments of a leading clergyman that community shelters are essential to save lives in event of attack.

____An internationally known scientist's position that both shelters and retaliatory power are irrelevant issues in the cold war - that the prospects for peace hinge entirely on other issues.

Check on the following scale how important you feel it is that people be free to choose what things they will read and what they will not:

Unimportant_____:_____:_____:_____:_____:_____:_____Important
extremely quite slightly neither slightly quite extremely

Check on the following scale how much choice you feel you had in what you read during this exercise today:

Little_____:_____:_____:_____:_____:_____:_____Much
extremely quite slightly neither slightly quite extremely

Would you be willing to take part in a similar research project in the future?

____yes ____no

What do you feel we were trying to demonstrate in the exercise today?_____

_____

Please list your name, major, and year in school:_____

_____

When you have finished, please place all material back in the large envelope or packet and turn it in. Thanks so much for your help.