A Practical Method for Achieving Perturbation and Changing Attitudes

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Western Michigan University

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A PRACTICAL METHOD FOR ACHIEVING
PERTURRATION AND CHANGING ATTITUDES

by

Rick Edwin Noonon

A Thesis
Submitted to the
Faculty of The Graduate College
in partial fulfillment
of the
Degree of Master of Arts

Western Michigan University
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August 1978
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I want to thank Malcolm Robertson, George Sidney, and Paul Mountjoy for the friendly cooperation they provided toward the completion of this thesis. My special thanks to my wife who put nearly as much effort into this project as I did.

Rick Edwin Noonon
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MASTERS THESIS

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A PRACTICAL METHOD FOR ACHIEVING PERTURBATION
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IN T R O D U C T I O N

In 1957 when Leon Festinger published his book, *A Theory Of Cognitive Dissonance*, social psychology was in its infancy. Today, social psychology is a highly respected field of psychological study, within which Cognitive Dissonance Theory has achieved an almost canonical status. For an example of the unchallenged position of this theory, one only has to look at the foreword of a typical text on Cognitive Dissonance. In a book on the subject by Wicklund and Brehm (1976) appears the statement,

> We may now have reached a less flamboyant stage of tidying of loose ends and charting out the relations between dissonance theory and other psychological conceptions, but whatever the future holds, the dissonance research "movement" has been the most important development in social psychology to date. (p.x)

A theory that is tidying up loose ends and charting relationships to other psychological conceptions does not appear in any danger of being disproved. As Bem (1967) pointed out, cognitive dissonance theory has been studied more than any other psychological concept. Therefore, when a new theory is proposed in contradiction to Cognitive Dissonance, it faces a substantial body of research in support of Festinger's conception. To appreciate the need for present study requires an understanding of the theory and the critical experiments in support of it.

A common way cognitive dissonance is demonstrated is in the forced compliance experiment. Festinger (1957) spoke of what happens when one obtains compliance in this situation.

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The magnitude of the reward or punishment, that is, the attractiveness and desirability of the offered reward or the unpleasantness and undesirability of the threatened punishment, is an important determinant of the magnitude of dissonance which exists once compliance is exhibited. Too great a reward or punishment will result in only little dissonance. Consider, for example, a situation where a man came up to you and said he would give you a million dollars if you publicly stated that you liked reading comic books. Let us assume, for the sake of the example, that you believe him and that you do not like reading comic books. Very likely you would publicly announce your preference for comic books, pocket the million dollars, and be quite content. There is some slight dissonance, to be sure. You said you liked comic books and you really do not. But there are some very important elements that are consonant with having uttered this statement, namely, the knowledge of the money now in your pocket. Relative to this, the dissonance is negligible. Essentially, the same situation would ensue if a person threatened to shoot you unless you publicly declared you liked comic books. As the promised reward or threatened punishment becomes smaller in importance, the dissonance resulting from compliance increases. The maximum possible dissonance would be created if the reward, or punishment, was just barely enough to elicit the desired overt behavior or expression. (p.91)

The basic postulate of the forced compliance situation would be that as long as the behavior is elicited, then the smaller the reward, the greater the dissonance.

In the first experimental test of this hypothesis Festinger and Carlsmith (1959) gave subjects either a large or a small reward for telling a peer that a task was interesting when in reality it was dull. They found that when subjects were quizzed on their perceptions of the task they differed according to the amount of reward received. The high reward group said the task was uninteresting, as in actuality the task was. However, the experimenters found that the subjects in the low reward group stated that they found the task interesting.
According to Festinger and Carlsmith, the reason for the discrepancy between the attitudes of the low reward group and the high reward group is that the low reward group holds two cognitions that are inconsistent with one another. One cognition is that it was fun and exciting. The other is that the reward received was not great enough to justify the action. By having these two cognitions the low reward group experiences an aversive motivational state, i.e., cognitive dissonance. Therefore, the low reward group changes its attitudes to avoid the pressure of aversive motivation i.e., they alter one of the two dissonant cognitions.

Cognitive Dissonance Theory holds that any situation can be divided into elements that have certain relationships to each other. Two elements can exist in irrelevant, consonant or dissonant relations. In a situation where one does something contrary to one's beliefs, a person has two elements, the beliefs and the opposite behavior. These two elements can create dissonance in a person. However, this situation can have other elements introduced that are consonant with a person's beliefs. For example, if one received a fair payment and does something against one's beliefs, then this consonant element would do much to cancel out most of the dissonance. Elements are consonant if one element follows logically from another; dissonant if the opposite of one element would follow from the other. If neither the existing element or its opposite follows from the other element of the pair, then the relation between them is irrelevant.
The only major alternative explanation of cognitive dissonance phenomenon has been Bem's (1967), theory of Self-perception. Bem's theory has not received nearly the attention or research that Cognitive Dissonance has. However, since this theory is a viable alternative to Festinger's position, it needs to be presented.

The way Bem would explain the forced compliance phenomena mentioned before is to consider that individuals form their attitude by observing their own behavior and the environment around it. Bem (1967) would describe what happened in Festinger and Carlsmith's (1959) experiment very differently. Self-Perception theory postulates that individuals react to their own behavior just as an outside observer would. In one instance, the observer would know that a subject received one dollar and is making favorable statements about a task. The observer, when asked to describe the actual attitude of the individuals heard, would first state that the person who is receiving twenty dollars is not believable in that the behavior is obviously under the control of the large reward. Therefore, the high reward individual's statements can not be used to infer actual attitude. However, when the observer considers the statements of the low reward individual, it is clear that this person's behavior is not as controlled by reinforcement contingencies as in the high reward condition. Therefore, the observer would be more likely to judge that individual is expressing some of the opinions that were in the statements. Now, if one places the observer and the communicating individual in the same skin, one would obtain the same findings as Festinger and Carlsmith did (1959).
Both Self-Perception Theory and Cognitive Dissonance attempt to explain the results of Festinger and Carlsmith's (1959) experiment. However, since the two above theories are inadequate to explain what happens when one adds a "zero reward" condition to the original experiment, a new theory is needed.

The new theory was developed by Nuttin (1975) and is described in his book *The Illusion of Attitude Change*. Nuttin was led to doubt Cognitive Dissonance Theory by a replication of Festinger and Carlsmith's study. The replication included not only a high reward and a low reward group, but also a zero reward group. In this experiment he found that a zero reward condition produces very little attitude shift, similar to the high reward conditions reported in Cognitive Dissonance literature. He hypothesized that it was the insulting and surprising nature of the small reward condition that produced the attitude shifts. The subjects in the high reward condition believed that they had received adequate payment for the task. However, a subject receiving only a small reward found it very disturbing, because the reward was not normal payment for the work done. On the other hand, subjects in the zero reward condition were not disturbed because they were doing the work as a favor to the experimenter, and were not being "insulted" by having it appear that the work was done for a trivial amount of money.

In Festinger and Carlsmith's experiment, the low reward condition created a state of arousal or disturbance. Nuttin proposes that this state of arousal or disturbance will lead the individual to be more likely to assimilate any evaluative responses heard.
Therefore when Festinger and Carlsmith's subjects stated that a task was exciting, they assimilated this evaluative response and believed the task was exciting. The state of arousal causes assimilation of evaluative responses to take place. Nuttin terms this state of arousal or disturbance "Perturbation." According to Webster, the meaning of perturbation implies among other meanings: "to disturb considerably in mind; make quite uneasy; cause to be upset or worried of alarmed; to put into considerable disorder of confusion; to modify the usual or expected course..."

To test the validity of this conception, Nuttin hypothesized that if one gave an extremely large reward one would also have a surprise of perturbation effect. In the case of both low reward and the extremely high reward, the subject's expectation of what the reward should be for the work done would be upset. Nuttin found that an extremely valuable reward did indeed cause attitude shift similar in degree to the one in the small reward condition.

According to Cognitive Dissonance Theory, the zero reward condition should have produced a large attitude shift, and the extremely large reward should have produced no attitude change. Self Perception Theory also would predict large attitude shifts for the small rewards, and no shift for the extremely large reward. However, as stated above, the findings were opposite of the predictions of these two theories.

An important component in Nuttin's methodology is that he uses events that would arouse perturbation, but which in Dissonance theory would be labelled as irrelevant elements. In his experiments,
he found that attitude shift could be produced by manipulations such as an unreasonable attack and blame by a professor, and a woman professor in outlandish clothes.

Nuttin calls his new theory of evalutive response assimilation the "Theory of Response Contagion". He uses the term "contagion" because it expresses the concept of a rapid spread of an influence or emotional state, and also a temporal concept of contact and effect. Response Contagion is conceived to be a function of three factors: (1) The nature of the prior responses; (2) The degree of perturbation or arousal; (3) The temporal contiguity between prior and subsequent responses. The three factors of Response Contagion Theory become clear when they are applied to the low reward group of Festinger and Carlsmith's (1955) experiment. The nature of the prior response was that of a subject emitting a favorable description of the task just performed. The degree of perturbation or arousal was quite large, when one considers how the subjects were insulted by the small reward received. The temporal contiguity between the prior evaluative response that the task was interesting and the subsequent response, i.e. the subjects opinion of the task, was sufficient for response contagion to occur. The measurement of the subjects opinion took place immediately after the evaluative response that the task was interesting.

A study that appears to support Response Contagion Theory is Miller and Levy (1967). In this experiment two groups of slightly over weight women were asked to read a persuasive communication. Each woman in one of the groups was "inadvertently" insulted for being obese. The women in the other group were not
insulted for being obese. Miller and Levy found that the women insulted for being obese had a greater attitude change from reading the persuasive communication than the group of women who were not insulted. The insult created a state of arousal or perturbation and this increased the evaluative response assimilation.

Worchel and Arnold (1974) also seemed to support the idea of the importance of perturbation. They found a greater attitude change after a manipulation in which subjects were led to cheat. The cheating caused arousal or a state of perturbation and led to an attitude change.

Another study which supports Muttin's view was Higgins and Taves (1976). They found that the effect of a "dissonant" situation was eliminated when subjects were given a pill and were told that it would make them feel tense. Thus as long as subjects can attribute their arousal to something else, no evaluative response assimilation need take place, but more important it showed the importance of arousal in these situation.

The idea that an extremely emotional or disorienting situation can change opinions and attitudes is not new. Allport (1950) wrote:

A third important source of attitude is the dramatic experience, or trauma. It is well known that a permanent attitude may be formed as the result of a compulsive organization in the mental field following a single intense emotional experience. Probably everyone can trace certain of his fears, dislikes, prejudices, and predilections to dramatic incidents of childhood... . Although the traumatic experiences of childhood seem to be especially important, there is all through life a susceptibility to the influence of emotional shock. (p.14)
That sudden intense arousal can change attitudes is a widely accepted notion. Response Contagion Theory lends support to the idea that an attitude shift can occur after arousal. Further, this theory indicates that even relatively low levels of arousal or perturbation lead to attitude change. The arousal creates a psychological state where in the assimilation of evaluative responses take place. The reason one has fears, dislikes, prejudices, and predilections after a dramatic incident, is clear. While in a state of perturbation from the dramatic incident, evaluative responses were encountered and assimilated in relation to the fears, dislikes, prejudices, and predilections. According to Response Contagion Theory this process is a major reason for attitude changes throughout an individual's life.

The purpose of this study is to determine if a state of perturbation will produce predictable attitude change from a counterattitudinal argument. The fact that Nuttin's research could not be easily duplicated may be a reason that there are few studies concerned with Response Contagion Theory. Therefore, the materials used in this study are readily available and the procedure can be easily duplicated.

To produce the perturbation effect in the subjects, it was decided to inform them that they scored much higher than they would normally expect on an intelligence examination. Considering the importance that individuals often attach to intelligence quotients (IQ), it was hypothesized that a very positive score would be unexpected and unusual enough to obtain the perturbation
effect. Because of the ease of group administration, the Revised Beta Examination was chosen as the measure of intelligence. To have a topic that is relevant and salient to a broad range of subjects, the Equal Rights Amendment for Women (ERA) was chosen.

Nuttin measured attitude change by comparing the attitudes of the experimental group with a control group on a seventeen point scale. The scale required the subjects to place their attitude somewhere between the two extremes of very strongly con or very strongly pro. To assess the impact of the experimental manipulation a pre and post test of subjects' attitude was used. The attitude measurement scale employed in the study was, Attitudes Toward Any Proposed Social Action Scale (Shaw and Wright 1967).

The hypothesis is that when subjects are in a state of perturbation they will show a predictable attitude change.
METHOD

Sample

The subjects were 23 volunteers. Fifteen of the subjects were obtained from undergraduate psychology and sociology classes. The last eight were people from the Kalamazoo Community who were older than the undergraduate students. The experimenter asked the eight to volunteer in order to improve the generalizability of the study by increasing age and occupational diversity. The eight older subjects were acquainted with the experimenter, but were unaware of the purpose of the study. Each of the eight subjects were contacted by telephone and after their cooperation was obtained, they were requested to attend the first session of the experiment.

The age of the subjects was from 19 to 29 with nine male subjects and 14 female subjects. One of the male subject was dropped from the study because he was a foreign student. The language barrier and the cultural bias of the Revised Beta Examination were the reasons for his removal from the experiment.

The experiment was run with three males and eight females in the experimental group; and five males and six females in the control group.

Materials and Setting

The scale used to measure attitude shift was, Attitudes Toward Any Proposed Social Action Scale (Shaw and Wright, 1967), see Appendix C+D for items according to scale value. This is a 17 item scale which a subject completes by placing a plus mark
next to each item the person agrees with. The individual's score is obtained by finding the median of those items checked. There are two equivalent forms A and B. The equivalent form reliabilities range from .92 to .78. The lowest score is 1.0, and indicates an extremely negative position, while the highest is 10.3 and indicates a very positive position.

The Revised Beta Examination (Kellogg and Morton, 1946) is a measure of general intellectual ability. The method of calculating intelligence quotients (IQ's) is the same as the Wechsler Intelligence Scale (IQ of 100 being average, and a standard deviation of 15). The test has a reliability coefficient of .90.

The counter-attitudinal argument was written on standard loose leaf notebook paper. Each person wrote approximately one page of arguments.

The first session was held in a small classroom in the building occupied by the Department of Psychology at Western Michigan University. Each subject sat at an individual desk; the desks were approximately two feet apart on either side.

The individual session was held in a room containing a series of booths. One booth was used for the experiment. The booth was approximately ten feet by ten feet. It contained a table and two chairs; no other distracting materials were present. One chair was occupied by the subject and the other by the experimenter, with the experimenter sitting at a right angle to the subject.
Procedure

All subjects were told the following when they are requested to volunteer.

The experiment will involve taking an intelligence test and writing a short argument on the topic of the Equal Rights Amendment for Women. Also several questionnaires will be given to check an individual's actual opinion on the stated topic. The purpose of the study is to check the relationship of opinion and intelligence to creativity of arguments.

The entire experiment as far as time involvement will consist of an hour the first session and an hour the second session. All subjects will receive a final copy of the study when it is complete.

When the subjects came into the first session of the experiment, they were administered a Revised Beta Examination. After completing the examination all subjects were given Form A of the Attitudes Toward Any Proposed Social Action Scale (Shaw and Wright 1967) (See Appendix A for a copy as given to the subjects). The subjects were asked to place a plus mark next to each item on the scale they agreed with in relation to the Equal Rights Amendment for Women. For example, the first item would read, "The Equal Rights Amendment for Women is a practical basis for future planning." If the subject agreed with they would put a plus mark; if not, they would leave the item blank. The subjects were then thanked for their cooperation and asked to leave a number where they could be contacted for the second session.

The next step was to match the subjects into pairs according to intelligence scores (the highest matched with the next highest, etc.). Then, the subjects were assigned to a control or an experimental group according to a random number procedure.
For example, if one subject was randomly assigned to the control group, the other subject in the pair automatically became a member of the experimental group.

Next, Form A of the attitude scale was scored to determine each subject's pre-manipulation opinion on the topic of the Equal Rights Amendment for Women. The median of the scale values of the items endorsed by the subject represents the individual's score (see Appendix C). For example, if the subject put a plus next to items with the values of 9.6, 9.2 and 8.9, the score would be 9.2. All individuals scoring 6.0 and above were considered "for" the Equal Rights Amendment for Women, subjects scoring below 6.0 were considered against.

The second session began three weeks after the first session and all subject data were obtained within a two week period. The second session was an individual one (between experimenter and subject). At the second meeting the subject was given the Revised Beta Examination with a score written on it. If the subject was in the control group, the intelligence quotient (IQ) was the actual score. If they were in the experimental group, they were told a score two standard deviations above what they actually scored. Since one standard deviation of the Revised Beta is fifteen points, the experimental group was told a score thirty IQ points above what they actually scored. Since one standard deviation on the Revised Beta is fifteen points, the experimental group was told a score thirty IQ points above what they actually did score. The manipulation of telling the subject a high IQ is the
only difference between the control and experimental group's procedure.

The subjects were given a few minutes to look over the examination with the experimenter answering any questions they might ask about their score. For example, a few people asked what the average score was and the experimenter told them it was 100. If the person started to ask detailed questions about the sub-test on the examination, the experimenter asked them to wait until the end of the session to go over the examination in detail.

The subjects were then asked to write an argument counter to whatever position they had scored on Form A of the attitude scale. That is, if the attitude scale indicated that they were "against" the Equal Rights Amendment for Women (below 6.0), they were asked to write an argument "for" the Equal Rights Amendment. On the other hand, if a subject was "for" the Equal Rights Amendment, then the argument would be written "against" the Equal Rights Amendment for Women.

The exact statement given to all subjects was as follows.

This is a study looking at intelligence and opinion in relation to creativity. What I have been asking people to do, is write an argument either for or against the Equal Rights Amendment for Women. However, I already have enough arguments (for, against) the Equal Rights Amendment, so what I would like you to do is write an argument (for, against) the amendment. It doesn't matter how much you know about the topic, just try to be as original and creative as possible. Make the argument about a page in length.

After finishing approximately a page on this topic, the
subjects took form B of the *Attitudes Toward Any Proposed Social Action Scale*, (see Appendix B). They were asked to put a plus next to each item they agreed with (according to their opinion in relation to the Equal Rights Amendment for Women.)

At the end of the session both groups were debriefed and told the purpose of the experiment. The subjects were told their score on the Revised Beta in 95% confidence intervals. The only time the subjects in the experimental group believe they had a higher IQ was in the second session. They were told at the beginning of the session and debriefed at the end. Therefore, the total time they believed this high IQ was about an hour.

After promising the subjects a copy of the results at the completion of the experiment, they were then thanked, and requested not to disclose information until the second sessions were completed, the experiment was completed in about two weeks.

**Analysis of Data**

Form B was scored for each subject, and the median scale value endorsed represented the individual's post-attitude toward the ERA, then the score on Form B was subtracted from the score on Form B. This is logical because the subjects wrote counter attitudinal arguments. A change in the predicted direction would mean a lower post-manipulation score for a subject with a positive attitude and a higher post manipulation score for a subject with a negative attitude.

The paragraphs written by the subjects were rated by an independent judge who had no knowledge of their placement in
experimental or control groups. The paragraphs were placed in one of three categories. (1) Creative and persuasive; (2) an in between rating; or (3) frivolus and unconvincing. Although the scoring was subjective, it was thought that this information would point out some areas that merit further examination in relation to perturbation and creativity. It must be emphasized that the rating was adhoc and that there was only one judge. Again, this rating was done only to indicate some possible areas of interest.
The results on the pre- and post-tests were analyzed by a t-test for paired measures. The scale points in the predicted direction of attitude change were significantly greater for the experimental group when compared to the control group. (p less than .05, t=2.981, t critical = 2.228) The results of the pre- and post-tests are summarized in Table 1. Interpretation of the tables will be aided by noting these relationships. Pair one obtained the highest scores on the Beta and pair eleven obtained the lowest scores. Twenty of the subjects scored as being in favor of the ERA on Form A. Therefore, if their attitudes changed in the direction argued in their paragraphs, Form A should be higher than Form B. However, according to Form A the experimental subject in the third pair and the control subject in the tenth pair were not in favor of the ERA. They wrote an argument "for" the Equal Rights Amendment for Women, and if their attitudes changed in the direction argued, Form B should be higher than Form A.

The number of scale points the subject's attitude changed in the direction argued is shown in Table 1. The only experimental subjects that had an attitude shift away from the direction argued were in the first and seventh pair. The rest of the experimental subjects appear to have changed their attitudes in the direction argued in their paragraphs.

There was no systematic effect noted in the control group. The control group had an average of -.023 scale points in the predicted direction of the attitude change. The experimental group had an
Table 1

Scores On The Attitude Scale Measuring Opinion On The ERA and Scale Points In The Predicted Direction Of Attitude Change, 6.0 and Above "For" ERA, Below 6.0 "Against" ERA

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Average Change 2.295
Average Change -0.023

* The E subject of the 3rd pair and the C subject of the 10th pair wrote "for"
average of 2.295 in the predicted direction.

As an attempt to get some estimation of the creativity and persuasiveness of the paragraphs the subjects wrote, the judge was instructed to place them in one of three categories. The judge rated the experimental group as being more creative and persuasive than the control group. Seven of the paragraphs in the experimental group were rated as persuasive and creative, while only three of the control group were so rated. Three of the experimental and five of the control subjects were placed in an in between group. One of the experimental and three of the control were rated as frivolous and unconvincing.
DISCUSSION

The number of subjects used by Nuttin was the same number of subjects used in the present study. It should be mentioned that this experiment was only concerned with attitude change in the direction argued. Therefore, the fact that twenty of the subjects were for the ERA and only two against is of little concern. The method of changing attitudes in the opposite direction of an original opinion is widely used in the attitude change literature, and this study is consistent with this method. The actual amount of change is focused on, so that the direction of the attitude change is not an issue.

The experimental group had a significant change in the predicted direction. The control group on the other hand had random attitude changes. This is consistent with the hypothesis of the experiment.

Pair number one had a reverse in results when compared to the rest of the study. In this pair, the control group member had an attitude change in the direction argued, while the experimental member had a change opposite of the direction argued. When told of the score, the experimental member of the pair responded that a similar score had been received on another IQ test taken some time ago. The only explanation for this is a measurement error either in the Revised Beta or in the earlier test. In any case, the lack of change in direction argued is not surprising
since there was no perturbation effect. This subject already expected an IQ score 30 IQ points above what he actually scored on the Revised Beta Exam. All other subjects in the experimental group seemed surprised and pleased at their scores, and seemed to accept them as their actual score.

To clarify the significance of the results of this experiment, it is necessary to review what Cognitive Dissonance Theory and Self-Perception Theory would predict as far as an outcome of the experiment.

The experiment has two elements. The first is being told an IQ score two standard deviations higher than the subject actually scored. So, the cognitive element is "I did not expect to score so high on this test." The second cognitive element is expressed in dissonance terms, i.e., "I wrote an argument against what I believe in." Festinger made it quite clear how to determine if two elements are in a relation that can cause dissonance.

Dissonance is not anything which exists all by itself. It is a characterization of a relationship between cognitive elements. Thus, determining whether or not dissonance exists would take the form of first specifying the cognitive elements, or clusters, which are under consideration and then examining whether, considering either one alone, the obverse of the other follows. (p. 279)

When the first element of this experiment is considered alone, it is clear that the second element is not the opposite of it. The thought "I did not expect so high a score on this test," and the thought "I just wrote an argument against my beliefs", are in no way the opposite. Therefore, these elements are in an irrelevant relation to each other, and should have no reciprocal effect. Cognitive Dissonance Theory would predict is a change
in attitude toward the direction argued. For this study, the important point is that Cognitive Dissonance would predict no difference between control and experimental groups. In actuality, the experimental group changed its attitude in the direction argued significantly more than the control group; on the other hand the control group on the average had an attitude change in the opposite direction of the argument written in the paragraphs.

Generally, the outcome of the study could not be accounted for by Self-Perception Theory. Bem analyzes experimental situations in the following ways,

- an individual's belief and attitude statements, and the beliefs and attitudes that an outside observer would attribute to him, are often functionally similar, in that both sets of statements are partial "inferences" from the same evidence: the public behavior and accompanying stimulus cues upon which the socializing community has relied in training him to make such self descriptive statements in the first place. (p186)

Since attitudes are inferred from observed behavior, one need only recall the steps of the experiment to predict the attitudes of the subjects. The steps were (1) being told a surprisingly high IQ, and (2) writing a series of arguments opposite to the subject's original opinion. Bem's theoretical argument would be that an outside observer would make no connection between the surprisingly high IQ score and attitude change. In fact, according to Bem's theory an outside observer would predict an attitude shift toward the direction argued in the paragraph, the reason is that the subject was under no reinforcement contingency when he wrote the paragraph, and the statements could be used to infer the individual's
actual attitude. The theory would predict the same change for the control and experimental groups. Again, the results were just the opposite of this prediction.

Only Response Contagion Theory adequately explains the results. The fact that the control group evidenced almost no change is not surprising, since there is no perturbation effect. The positive results of the study are explained as follows. Attitude change is a function of three factors: (1) the nature of the prior responses; (2) the degree of perturbation or arousal; and (3) the temporal contiguity between prior and subsequent responses. In the present study, the nature of the prior and subsequent responses. In the present study, the nature of the prior responses were evaluative statements exactly opposed to the subject's original attitude. Perturbation was brought about by informing the experimental group of an unexpectedly high score. The exact degree of perturbation however, one can assume that it would be large due to the importance society attaches to high intelligence. The time interval between the prior evaluative responses on Form B of the attitude scale, was very small. In most cases, it was less than two minutes, as the subjects began filling out Form B immediately after finishing the counter-attitudinal arguments.

The fact that an independent judge rated the experimental groups as more persuasive and creative than the control group needs comment. First, it must be admitted that the rating system is very subjective and the results are questionable. Yet, the
possibility exists that while a person is in a state of perturbation, more persuasive or creative arguments are produced than when a person is not aroused. Another possibility is that when subjects are told they have higher than expected IQ's, they may try to live up to the IQ score by working harder, and as a result produce higher quality arguments. However, other studies have been done in which subjects were led to believe they were more creative than they expected, and there was no difference in their performance (Meichenbaum, 1972). Further study in this area is needed to clarify this particular finding. It maybe that one of the effects of perturbation is to create a state of mind where more creative arguments are produced. If this is the case, the attitude shifts observed may be a function not only of evaluative response assimilation, but also of more persuasive communication.

Further areas in Response Contagion Theory that need clarification are what degree of perturbation is needed to discern an attitude shift. The experiments that have demonstrated the phenomenon have ranged all the way from a professor verbally attacking a student (Muttin, 1975), to a subject being led to cheat and having an attitude change afterwards (Worchel, 1974). At present, there are no studies dealing with this question of degree of perturbation needed for change. A possible way the degree of arousal necessary for attitude change could be measured is with a Galvanic Skin Response indicator. An experiment could be designed similar to the present study, only varying the degree to which IQ scores are increased. One would hypothesize that much
higher than expected $I^0$ score would produce more perturbation than slightly higher than expected score. Thus, the amount of perturbation could be controlled in this manner, and the effect that varying degrees of perturbation have on attitude change could be determined. Consequently, the skin response measurement would give an idea of the amount of perturbation associated with each increase in reported $I^0$ scores.

Leaving this matter of clarification to further study, it is very clear that Response Contagion Theory has important implications for some areas of psychology. It may explain why the technique of confrontation (Carkhoff and Brenson, 1967, Garner, 1959) works so well in psychotherapy. Garner (1970) describes the technique,

The technique of therapy in confrontation problem-solving psychotherapy includes the presentation of a statement and a question... A problem which is crucial but only vaguely recognized or not recognized may be used as a therapeutic focus. It is then stated succinctly and in a positive tone: "Stop believing that you are an inadequate woman. What do you think or feel about what I told you?" An actual solution to a problem may be presented or expressed in an exaggerated manner to illuminate the possible action. (p.231)

Confrontation technique begins with a statement that shocks or takes a client by surprise. It then follows with a discussion of feelings about the statement and what could be done to change a problem. The similarity to how attitudes change according to Response Contagion Theory is striking. The statement in confrontation technique created a state of perturbation. This is followed by evaluative statements, or possible solution to a problem, that are assimilated by the client.
The idea that the confrontation statement gains its effectiveness from stunning or shocking the client is presented by Kahn (1962). In his opinion, a judicious application of a "stun" in psychotherapy can be quite helpful. Response Contagion Theory provides an answer as to why the stun producing statement is effective.

As more information becomes available on Response Contagion Theory, more psychological phenomena may eventually be explained by it. At the present time more research is needed to determine the extent to which response contagion is the cause of attitude change.
REFERENCES


Miller, M., and Levy, B. H. (1967) Defaming and agreeing with the communicator as a function of emotional arousal, communication extremity and evaluative set. Sociometry, 30, 158-175


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APPENDIX A

Form A

Following is a list of statements about proposed social actions. Place a plus sign (+) before each statement with which you agree with reference to the proposed social action or actions listed at the left of the statements. The person in charge will tell you the proposed social action or actions to write in at the head of the columns to the left of the statements.

1. Is a practical basis for future planning.
2. Is a disgrace to society.
3. Places great emphasis upon fair-dealing.
4. Fill proceed to injurious limits.
5. Will be an influence for right living.
6. Can not do any serious harm.
7. Is perfectly absurd.
8. Is sure to be effective.
9. Will be all right in some cases.
10. Will solve some of humanity's greatest problems.
11. Will destroy our best American institutions.
12. Will bring lasting satisfaction.
13. Will soon become an object of bitter distrust.
15. Will cause too much friction.
16. Has its merits.
17. Can not meet the demands of a complex social order.
Following is a list of statements about proposed social actions. Place a plus sign (+) before each statement with which you agree with reference to the proposed social action or actions listed at the left of the statements. The person in charge will tell you the proposed social action or actions to write in at the head of the columns to the left of the statements.

1. Shows common sense.
2. Is too contradictory.
3. Is vitally necessary for the welfare of the country.
4. Can mean only disaster.
5. Will be appreciated by the general public.
6. Is too much of a deviation from normal procedure.
7. Will stand the test of time.
8. Is a ridiculous plan.
9. Shows great possibility of being a success.
10. Is a foolish inconsistency.
11. Will advance civilization to a higher level.
12. Is an enemy of liberty.
13. Will do just as much harm as it will good.
14. Will not fit into our modern world.
15. Will be liked only fairly well.
16. Is entirely a haphazard plan.
17. Probably will be accepted by the majority.
APPENDIX C

Form A

<table>
<thead>
<tr>
<th>Value</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>10.3</td>
<td>Will bring lasting satisfaction.</td>
</tr>
<tr>
<td>9.6</td>
<td>Has unlimited possibilities.</td>
</tr>
<tr>
<td>9.2</td>
<td>Will solve some of humanity's greatest problems.</td>
</tr>
<tr>
<td>8.9</td>
<td>Will be an influence for right living.</td>
</tr>
<tr>
<td>8.5</td>
<td>Is sure to be effective.</td>
</tr>
<tr>
<td>8.1</td>
<td>Is a practical basis for future planning.</td>
</tr>
<tr>
<td>7.7</td>
<td>Places great emphasis upon fair-dealing.</td>
</tr>
<tr>
<td>6.5</td>
<td>Has its merits.</td>
</tr>
<tr>
<td>6.0</td>
<td>Can not do any serious harm.</td>
</tr>
<tr>
<td>5.5</td>
<td>Will be all right in some cases.</td>
</tr>
<tr>
<td>4.7</td>
<td>Can not meet the demands of a complex social order.</td>
</tr>
<tr>
<td>3.6</td>
<td>Will cause too much friction.</td>
</tr>
<tr>
<td>3.1</td>
<td>Will soon become an object of bitter distrust.</td>
</tr>
<tr>
<td>2.6</td>
<td>Will proceed to injurious limits.</td>
</tr>
<tr>
<td>2.2</td>
<td>Is a disgrace to society.</td>
</tr>
<tr>
<td>1.6</td>
<td>Will destroy our best American Institutions.</td>
</tr>
<tr>
<td>1.0</td>
<td>Is perfectly absurd.</td>
</tr>
</tbody>
</table>
APPENDIX D
Form B.

Scale
Value

10.3 1. Is vitally necessary for the welfare of the country.
9.6 2. Will advance civilization to a higher level.
9.2 3. Will stand the test of time.
8.9 4. Shows great possibility of being a success.
8.5 5. Will be appreciated by the general public.
7.7 7. Probably will be accepted by the majority.
6.5 8. Will be liked only fairly well.
6.0 9. Will do just as much harm as it will good.
5.5 10. Is too much of a deviation from normal procedure.
4.7 11. Is too contradictory.
3.6 12. Will not fit into our modern world.
3.1 13. Is entirely a haphazard plan.
2.6 14. Is a foolish inconsistency.
2.2 15. Is an enemy liberty.
1.6 16. Is a ridiculous plan.
1.0 17. Can mean only disaster.