Cognitive congruence: self-perception versus cognitive dissonance theory.

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COGNITIVE CONGRUENCE:
SELF-PERCEPTION
VERSUS
COGNITIVE DISSONANCE:
THEORY

by

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B.A., University of Windsor, 1972

A Thesis
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Windsor, Ontario, Canada
1973
ABSTRACT

This study was designed to test the differential predictions generated by self-perception theory and cognitive dissonance theory about the effects of choice to write a congruent or incongruent essay on final attitude rating.

Subjects were chosen on the basis of their attitude towards the abolition of university tuition fees. Those subjects who were against the abolition of tuition fees participated in the classical "dissonance" experiment; they were asked to write an essay incongruent with their original position. For subjects who favoured the abolition of tuition fees the essay was congruent with their original position. One half of the subjects were given no choice as to which essay to write, and one half were given the choice. Different hypotheses as to the final attitude ratings of the subjects were generated from self-perception theory and cognitive dissonance theory.

Analysis of variance and secondary analyses failed to support the self-perception hypotheses, and the results were, at best, consistent with cognitive dissonance theory, but no dissonance effect was demonstrated.
PREFACE

The author wishes to express her grateful appreciation to Dr. H.D. Woodyard, whose constant support and guidance enabled the completion of this work, and also to committee members Drs. R.M. Daly, P.W. Schneider, and R.C. Amore. She would also like to thank Dr. M. Morf for his advice on experimental design and statistical analysis. Without the co-operation of the subjects who gave of their time, this study could not have been undertaken, and to them she is indebted. Last but not least, the author would like to thank her husband, Bob, for providing a shoulder to cry on when the going got rough.
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CHAPTER 1
INTRODUCTION

Both Bem (1965, 1966, 1967) and Festinger (1957) have postulated theories to explain how and why attitude change takes place. There have been many attempts to develop a crucial experiment to determine which theory is most adequate (Snyder & Ebbesen, in press; Kiesler, Nisbett, & Zanna, 1969). However, as Bem (1972) put it: "the 'crucial' test between dissonance theory and the original self-perception explanation of forced compliance effects remains equivocal (p. 33)."

The purpose of this study, then, is to attempt to test the differential predictions of the two theories, with regard to congruent conditions, as well as to the classical "dissonance" (incongruent) conditions.

Festinger's theory (1957) is based on the concept of cognitive dissonance. According to this theory, dissonance is thought of as an unpleasant drive state, aroused when two or more cognitive elements, relevant to one another, are inconsistent. The individual seeks to alleviate this dissonance by altering one or more of the cognitions to reduce the inconsistency. The Festinger and Carlsmith (1959) study was interpreted within this framework. Subjects were paid either $1 or $20 to tell a waiting student that the dull...
repetitive task that they had just engaged in had, instead, been enjoyable and interesting. It was found that, on a subsequent questionnaire, the $1 subjects evaluated the task as significantly more enjoyable than the $20 subjects. According to Festinger, the $1 subjects had less justification for lying about the task, and thus more dissonance was aroused. The $1 subjects thus changed their beliefs (or attitudes) more in order to reduce the dissonance.

Bem, however, argues against the necessity of postulating any such motivational state driving the person to change his attitudes. Instead he postulates a self-perception (or self-persuasion) theory (1965, 1967) based on Skinner's (1953, 1957) radical behaviorism analysis of human behavior. Simply stated, Bem says that we make judgments about ourselves, our beliefs, and our attitudes on the same basis as we make judgments about others.

Bem has attempted to specify which discriminative stimuli control a person's self-descriptive statements. According to Bem, internal stimuli, by their very nature, are private, and therefore inaccessible to the socializing community for interpretation or reinforcement. Therefore the socializing community must use criteria other than privately available internal stimuli when it teaches the child the proper circumstances under which to label certain events. For example, the child may be taught to identify a "growling stomach" as "hunger". The individual must, then, rely on inferences from his overt behavior, labelled by the outside
community, when making self-descriptive statements. He is, in fact, in the same position as an outside observer, using external cues to infer his inner states.

Support for this postulate was found in the work of Schacter and Singer (1962). They demonstrated that external cues (i.e., the behavior of a stooge) influenced which particular emotion would be attributed to actual drug-induced physiological arousal. The investigators were able to induce emotions as disparate as euphoria and rage, depending on the behavior of stooges.

In the words of Bem (1972):

Individuals come to "know" their own attitudes, emotions, and other inner states partially by inferring them from observations of their own overt behavior and/or the circumstances in which this behavior occurs. Thus, to the extent that internal cues are weak, ambiguous, or uninterpretable, the individual is functionally in the same position as an outside observer who must necessarily rely upon these same external cues to infer the individual's inner states (p. 2).

In the above quotation, Bem states that "the circumstances in which this behavior occurs" further define how a person learns about his attitudes. Bem uses Skinner's (1967) concept of the **mand** and **tact** characteristics of behavior in his analysis of self-descriptive statements.

A **mand** is a social operant primarily under the control of specific reinforcing contingencies. The statement, "Please pass the salt," is a mand, since only the passing of the salt will act as a reinforcer for that statement. **Commands**, **demands**, and **pleas** are all mands.
A tact, on the other hand, is a social operant under discriminative stimulus control, not dependent on specific reinforcers, but instead on generalized reinforcement. General conversation is most often made up of tacts, providing contact with the environment. For example, the statement, "It's going to be a cold winter," is a tact, if it is based on one's interpretation of weather conditions or meteorological predictions. However, mands are often disguised as tacts. If the same statement, "It's going to be a cold winter," is uttered by an overcoat salesman, we may assume that his verbal behavior is a mand. The statement seems to demand a particular reinforcement -- the commission he will receive if we buy the coat.

In terms of communicator credibility, Bem (1972) feels that a communicator is considered to be credible and is more likely to persuade an audience if the members of the audience discriminate his communication as a set of tacts. A communicator is seen as less credible and is less likely to persuade his audience if it appears that he is manding, in the form of disguised tacts. We are less likely to believe the overcoat salesman's statement about the weather, since it is likely that it is evoked, not by relevant stimuli in the environment, but rather by hope of a specific reinforcement (i.e., a coat sale).

These mand and tact discriminations are made on the basis of observed behavior and the apparent controlling conditions. Thus, following from Bem's postulate that
individuals make judgments about themselves as would an outside observer, judgments of self-credibility would be made on the same basis. A person will regard himself as more credible if he discriminates his own behavior as "tacting" as opposed to "manding".

Bem (1965) used this analysis to reinterpret the results of the above-mentioned study by Festinger and Carlsmith (1959) and other dissonance experiments (Brehm & Cohen, 1959; Aronson & Carlsmith, 1963). Bem explains the results on the basis of self-perception of one's own behavior. Bem considers the subjects in the cognitive dissonance study as observers, observing their own behavior. In effect, they are asking themselves, "What must my attitude be if I am willing to behave in this fashion in this situation?" The $1 subject sees himself praising a task for little monetary compensation and rules out financial reward as a motivating factor. The behavior is seen as tacting, and he infers that he must actually have enjoyed the task. The $20 subject, however, sees his statements as manding behavior, since the $20 is more than enough reward to evoke the statements, regardless of his private attitude. The $20 subject thus sees his praising statements as less credible.

Bem has tested his hypothesis of the functional equivalence of observer and participant using a technique called the "interpersonal simulation" (Bem, 1965, 1967, 1968). In these experiments, an observer-subject is given a brief description of one or the other of the conditions (either
high pay or low pay conditions) of a dissonance experiment. He is asked to rate the attitude of the participant subject in the description. Bem found support for self-perception theory -- the attitude rating of the observers was the same as that of the participant subject.

Bem's interpersonal simulations have been challenged by several investigators (Jones et al., 1968; Mills, 1967; Piliavin et al., 1969). A controversy has arisen as to whether the observer-subject should be informed of the original attitude (premanipulation attitude) of the participant subject. In the Jones et al. study, when observers were given information about the premanipulation attitude of the participants, the observers were unable to reproduce the results of the actual experiment. Bem (1968) argued that the premanipulation attitude is neither salient to the subject in the dissonance experiment, nor does it influence the outcome of such an experiment. The data of the subject's most recent overt behavior "update" prior information on his "attitudes". Bem and McConnell (1970) supported this contention in a study designed to assess the salience of premanipulation attitudes. The subjects were not only unable to recall their premanipulation attitudes, but perceived their premanipulation attitudes to be the same as their postmanipulation attitudes.

There have recently, however, been some studies to suggest that premanipulation attitudes may, in some instances, affect the perception of attitude. Chris and Woodyard (1973)
found that premanipulation attitude was a salient factor in persons who rated the issue in question as of great importance to them. Woodyard (1972) also found that premanipulation attitudes did affect the outcome of a dissonance experiment.

To date, virtually all studies have focused on the "dissonance" model. However, if Bem is correct in his contention that premanipulation attitude is not a salient factor in determining final attitude ratings, the same results should be obtained when the premanipulation attitude is congruent with the behavior in question. This creates the possibility of an experiment to test differential predictions of the two theories.

According to Festinger, if the premanipulation attitude is congruent with the behavior being performed, no dissonance is aroused, and thus no attitude change should take place. However, according to self-perception theory, the manipulation of mand-tact characteristics should be sufficient to produce differing degrees of self-credibility, and thus different final attitudes. If a congruent behavior is performed under conditions heavily loaded with mand characteristics, the subject should (according to self-perception theory) perceive himself as non-credible in this situation, and thus judge his own behavior as non-indicative of his true belief. This leads to the interesting possibility that it may be possible to change people's beliefs by making them feel that they had to be "coerced" into doing what they would have done voluntarily.
The results of one study (Kiesler & Sakamura, 1966) which dealt with congruent behavior seemed to contradict these implications of self-perception theory. In that study, subjects were paid either $1 or $5 to read into a tape recorder a prepared essay congruent with their own beliefs. Self-perception theory would predict a significant difference between the postmanipulation attitudes of the subjects in the $1 (tact) and $5 (mand) conditions, but, in fact, no such differences were found. However, this result cannot be considered to be a serious contradiction of self-perception theory, since the subjects had been told that the purpose of the experiment was the study of regional speech patterns. Since the congruent behavior was made to seem unimportant to the purpose of the experiment, the subjects would not necessarily infer that their behavior had anything to do with their own beliefs about the essay. Kiesler himself later suggested that possibility (Kiesler, Nisbett, & Zanna, 1969).

The present study dealt with congruent behavior also, but unlike Kiesler and Sakamura (1966) no attempt was made to disguise the purpose of the study. The classical dissonance condition was also included, and differential predictions were made on the basis of the two theories. Mand-tact discriminations were established by manipulating the degree of choice to write an essay favouring the abolition of university tuition fees. Previous studies have used the choice manipulation successfully (Bem & McConnell, 1970; Chris & Woodyard, 1973). In the tacting condition, the
subject was given the choice of whether to write an essay favouring the abolition of university tuition fees, or against the abolition of fees. The request was worded in such a manner that most students wrote the favourable essay. This procedure was used in order that the subject would infer that external pressure was not sufficient to make him perform the behavior, and that therefore the behavior must have been a true reflection of his attitude. In other words, he would feel that he actually did favour the abolition of university tuition fees. On the other hand, in the mand situation, the subject was given no choice of which essay to write, but was merely told to write an essay favouring the abolition of university tuition fees. In this case, it is assumed (according to self-perception theory) that the subject will not see his own behavior as credible, since he was forced to engage in it.

Based on the different assumptions of the two theories, two sets of hypotheses can be generated:

**Self-Perception Theory**

1. There will be no significant difference in final attitude ratings of subjects in the congruent and incongruent conditions.

Since according to Bem premanipulation attitude is not a salient factor in determining final attitude rating, the same results should be obtained in the congruent condition as in the incongruent condition. There should be no significant difference between choice congruent and
choice incongruent final attitude ratings, and no significant difference between no choice congruent and no choice incongruent in final attitude rating.

2. There will be a significant difference in final attitude ratings of choice and no choice groups, with choice groups expressing a more favourable final attitude.

Subjects in the choice groups see their behavior as indicative of their true belief, since they freely chose to write the essay. However, since subjects in the no choice groups were forced to write the essay, they would not see their behavior as indicative of their belief. The final attitude rating of the choice subjects would thus be significantly more favourable towards the abolition of tuition fees than the rating of the no choice subjects.

3. The effect of degree of choice on final attitude rating will not depend on premanipulation attitude (i.e., no significant interaction effect).

Manipulation of degree of choice to write the essay will have the same effect in both the congruent and incongruent conditions.

Cognitive Dissonance Theory

1. There will be a significant difference in final attitude ratings of subjects in the congruent and incongruent conditions, with subjects in the congruent conditions expressing a more favourable final attitude.

Since, in the congruent condition, the subjects are asked to write an essay congruent with their premanipulation
attitude, no dissonance is aroused, and thus final attitude rating should remain extremely favourable to the abolition of tuition fees.

2. There will be no significant difference in final attitude ratings of choice and no choice groups.

Cognitive dissonance theory would predict a significant difference between choice and no choice in the incongruent condition (the classical "dissonance" effect). However, in the congruent condition, no dissonance is aroused, and there would be no significant difference between choice and no choice in this condition. The significance of the main effect would depend on the amount of difference between choice and no choice in the incongruent condition, with a large difference creating a significant effect.

3. The effect of degree of choice on final attitude rating will depend on premanipulation attitude (i.e., a significant interaction effect).

The theory would predict a simple main effect of degree of choice in the incongruent condition (the classical "dissonance" effect) but no such effect in the congruent condition. Thus the significance of the interaction effect would depend on the magnitude of the difference between choice and no choice ratings in the incongruent condition.

In addition, two simulation conditions were included to test whether Bem's interpersonal simulations would replicate the results of the experiment. Subjects in the simulation did not write an essay, but rather read a description of the
experimental conditions and were asked to rate what they believed the participant would mark as his final attitude rating. Half of the subjects in the simulation condition read a description of the choice condition, and the other half read a description of the no choice condition.

Cognitive dissonance theory, in this case, would predict that, in the absence of knowledge about premanipulation attitude, the observer will be unable to reproduce the rating of the participant. There would thus be no significant difference between the observer ratings of subjects in the choice and no choice simulation groups.

Self-perception theory, however, would postulate that subjects in the simulation, given information about degree of choice, should be able to form the appropriate mand-tact discrimination. The theory would thus hypothesize a significant difference between ratings of subjects in the choice and no choice simulation conditions. Moreover, it is hypothesized that there would be no significant difference in final attitude ratings of subjects in the no choice conditions of the experiment and the no choice simulations, and that there would be no difference between the choice experimental groups and the choice simulation in final attitude ratings.

A control group was included, who merely completed the questionnaire 3 weeks apart. This group was included to determine whether a variable in the interim between questionnaire administrations was sufficient to produce the change in attitudes without any experimental manipulations.
CHAPTER II
METHODOLOGY AND PROCEDURE

Experimental Sample

The subjects (Ss), half of them male and half female, were volunteers from introductory psychology classes at the University of Windsor. They received course credit for their participation in the study. The original subject sample of 123 was reduced to 98 for final analysis, due to non-compliance, and to equalization of cell frequencies to 14 subjects per cell. Table 1 shows the original cell frequencies and the number of subjects dropped due to non-compliance.

Table 1
Original Cell Frequencies for the Experimental Sample*

<table>
<thead>
<tr>
<th>CHOICE</th>
<th>CONGRUENT</th>
<th>INCONGRUENT</th>
<th>SIMULATION</th>
<th>CONTROL</th>
</tr>
</thead>
<tbody>
<tr>
<td>CHOICE</td>
<td>18(3)</td>
<td>24(10)</td>
<td>14</td>
<td>15</td>
</tr>
<tr>
<td>NO CHOICE</td>
<td>17(1)</td>
<td>20(2)</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

* with the number of subjects dropped from each cell due to non-compliance in brackets
Subjects were assigned to the congruent and incongruent conditions on the basis of the premanipulation questionnaire (to be discussed in Experimental Procedure).

Experimental Materials

The scales used to measure attitudes, degree of commitment to attitudes, perception of freedom of choice to write the essay, and perception of persuasiveness of the essay were similar to those used by Bem and McConnell (1970) and by Chris and Woodyard (1973). They were 61-point horizontal scales, labelled at either end (see Appendices A and B).

Experimental Procedure

In the first session, a premanipulation questionnaire based on issues of interest to Canadian college students, was administered to several introductory psychology classes. Each issue was accompanied by a scale to measure degree of commitment to that issue (see Appendix A).

Following the attitude survey, the experimenter analyzed the attitude ratings for each issue. The issue on which the most students rated their attitude on either extreme end of the scale was chosen as the target item. This was found to be the following:

The payment of university tuition fees should be abolished.

Subjects were then chosen from either end to comprise the experimental sample, groups matched as to means and standard deviations with regard to premanipulation attitude ratings. Subjects were then contacted to participate in the second phase of the experiment.
Subjects at the extreme positive end of the scale (i.e., those who favoured the abolition of university tuition fees) were randomly assigned to either the choice or the no choice groups in the congruent condition. Subjects at the extreme negative end of the scale (i.e., those who did not favour the abolition of university tuition fees) were randomly assigned to either the choice or the no choice groups in the incongruent condition. Congruence was defined by whether the premanipulation attitude was congruent or incongruent with the essay position to be written. All subjects were to write an essay favouring the abolition of university tuition fees.

The simulation choice and no choice, and the control groups were comprised of an equal number of subjects from either end of the scale, so that these groups were balanced as to premanipulation attitude.

In all, then, there were 7 groups of subjects with 14 Ss in each group. Subjects were run in groups of about ten students, three weeks after the administration of the first questionnaire.

Choice Conditions

The congruent and incongruent choice groups were given the same instructions. The subjects were seated, and given a large manila envelope, with appropriate materials within. The experimenter instructed them verbally as follows:

Before you open your envelopes I would like to give you some idea of their contents and some instructions as to what you are to do with what you find inside. Inside are two smaller envelopes, one white and one manila. When I tell you,
open the large envelope and take out the white one. Open this white one and read carefully the enclosed instructions. Then proceed to do as the instructions tell you. Open only the white envelope until you receive instructions from me. Any questions? You have 25 minutes to complete this part of the experiment. You may now open your envelopes.

The instructions in the white envelope were:

The Psychology Department of the University of Windsor is continuing its research into campus issues and student opinions. It has been shown that one of the best ways to get pertinent arguments on both sides of an issue is to ask people to write essays favouring only one side. This week we are collecting arguments for and against the various positions expressed. Each participant is being asked to write a short essay on one of the issues. On the attached sheet, you may write an essay arguing that the payment of university tuition fees should be abolished or an essay arguing that the payment of university tuition fees should not be abolished. The choice is up to you.

Following Bem and McConnell (1970) and Chris and Woodyard (1973) an addendum sheet was inserted between the foregoing instructions and the blank sheet for writing the essay. This addendum was added with the purpose of ensuring essays favouring the abolition of university tuition fees. It read:

We now find we have enough “anti-abolition” arguments and we are in need of “pro-abolition” arguments. Therefore, in this session, we would appreciate it if as many of you as possible would write one-page essays which argue that the payment of university tuition fees should be abolished.

After 25 minutes, the experimenter requested that Ss replace their essays in the large envelope and open the small manila one. In this envelope was the original attitude questionnaire, along with a question on perceived freedom
of choice to write the essay, and degree of persuasiveness of the essay (see Appendix B). The whole questionnaire was administered, rather than only the target question, to control for any effect of context of the questions on the scale.

**No Choice Conditions**

The congruent and incongruent no choice subjects were given the same preliminary verbal instructions (p. 15). Inside their white envelopes were the following instructions:

The Psychology Department of the University of Windsor is continuing its research into campus issues and student opinions. It has been shown that one of the best ways to get pertinent arguments on both sides of an issue is to ask people to write essays favouring only one side. This week we are collecting arguments for and against the various positions expressed. Each participant is being asked to write a short essay on one of the issues. On the attached sheet, you are to write a one-page essay which argues as convincingly as possible that the payment of university tuition fees should be abolished.

After 25 minutes, the experimenter requested that Ss replace their essays in the large envelope and open the small manila one. In this envelope was the same material as for the choice groups (see above; see Appendix B).

**Simulation Conditions**

Subjects in the simulations were merely given a description of either the choice or the no choice conditions of the experiment. Subjects in the simulation choice were given the following instructions in white envelopes:
The following is a description of a research project in which a student much like yourself participated. Please read the description carefully. After you finish reading it, you will be asked a question about what you read.

In the classroom, the student was asked to mark several scales to measure his opinion on issues of current interest. Among them was a scale regarding the abolition of university tuition fees.

Two weeks later, the subject was called back to participate in the second part of the experiment. He was given the following instructions:

The Psychology Department of the University of Windsor is continuing its research into campus issues and student opinions. It has been shown that one of the best ways to get pertinent arguments on both sides of an issue is to ask people to write essays favouring only one side. This week we are collecting arguments for and against the various positions expressed. Each participant is being asked to write a short essay on one of the issues.

On the attached sheet, you may write an essay arguing that the payment of university tuition fees should be abolished or an essay arguing that the payment of university tuition fees should not be abolished. The choice is up to you.

Between this page and the blank page for the essay, the following page was added:

We now find that we have enough "anti-abolition" arguments and we are in need of "pro-abolition" arguments. Therefore, in this session, we would appreciate it if as many of you as possible would write one-page essays which argue that the payment of university tuition fees should be abolished.

The student wrote the essay arguing that the payment of university tuition fees should be abolished. After he had written the essay, he was given a copy of the previously administered scales on current issues, and was asked to mark his present position on the issues.

Based on this description, how do you think the student rated the item on the abolition of university tuition fees?
Circle your point carefully. Remember, we are interested here in how you think the student rated the item. Try not to be influenced by your own attitude.

The payment of university tuition fees should be abolished.

strongly disagree

strongly agree

On the next page were the following instructions:

We would now like to know what your attitude is on the issue of the abolition of university tuition fees. Please mark your attitude on this issue.

The payment of university tuition fees should be abolished.

strongly disagree

strongly agree

Subjects in the simulation no choice were given the description of the no choice experimental conditions. Other than the actual copy of the instructions in choice and no choice conditions, the instructions for the two simulation conditions were exactly the same. On the next page, they were given the same instruction to rate their own attitude.

Control Condition

The control group was merely given the questionnaire three weeks after the original administration of the questionnaire.

All subjects were de-briefed immediately following their participation.
The main dependent variable in the experiment was final attitude rating on the issue of abolition of university tuition fees. The independent variables were degree of choice to write the essay, and premanipulation attitude toward the essay position (i.e., whether the essay was congruent or incongruent with the premanipulation attitude). The main analysis was a 2 x 2 analysis of variance. Individual comparisons were carried out using F- and t-tests.
CHAPTER III

RESULTS

Preliminary Analyses

As has been found by other researchers (Bem & McConnell, 1970; Chris & Woodyard, 1973), using a choice paradigm, there was loss of subjects due to non-compliance; subjects who, in this case, wrote an essay against the abolition of university tuition fees. Bem and McConnell found that only 2 of 32 subjects had to be dropped for this reason. Chris and Woodyard instead lost 33% of their subjects due to non-compliance. In the present study, 16 of 79 (20%) were rejected. It is interesting to note that, of those dropped, four Ss were in the congruent groups. These subjects chose to write an essay against their pre-manipulation attitude.

Analysis of the perception of choice data indicates that the choice manipulation was effective in producing differential perception of choice between the choice and no choice conditions, in both the final and the rejected sample. Table 2 presents the mean perceived freedom of choice for the experimental groups and the rejected group, with a high score indicating high perceived freedom of choice. Mean perceived freedom of choice for the choice conditions in the experimental sample was 34.6, slightly more than average choice. This is significantly higher than subjects in the no choice
Table 2
Freedom of Choice Data

<table>
<thead>
<tr>
<th>Condition</th>
<th>Mean Score</th>
<th>t</th>
</tr>
</thead>
<tbody>
<tr>
<td>Choice</td>
<td></td>
<td></td>
</tr>
<tr>
<td>choice congruent</td>
<td>34.64</td>
<td></td>
</tr>
<tr>
<td>choice incongruent</td>
<td>33.36</td>
<td></td>
</tr>
<tr>
<td>No Choice</td>
<td></td>
<td></td>
</tr>
<tr>
<td>no choice congruent</td>
<td>35.93</td>
<td></td>
</tr>
<tr>
<td>no choice incongruent</td>
<td>8.11</td>
<td></td>
</tr>
<tr>
<td>Rejected sample</td>
<td></td>
<td></td>
</tr>
<tr>
<td>choice</td>
<td>12.21</td>
<td></td>
</tr>
<tr>
<td>no choice</td>
<td>4.00</td>
<td></td>
</tr>
</tbody>
</table>

**t-tests**

<table>
<thead>
<tr>
<th>Choice vs. No Choice</th>
<th>t</th>
</tr>
</thead>
<tbody>
<tr>
<td>choice congruent vs. no choice congruent</td>
<td>2.70**</td>
</tr>
<tr>
<td>choice incongruent vs. no choice incongruent</td>
<td>2.47*</td>
</tr>
<tr>
<td>Rejected sample choice vs. no choice</td>
<td>4.95**</td>
</tr>
</tbody>
</table>

* p < .05
** p < .01
conditions, who perceived mean choice of 8.11, very little choice ($t=2.70, df=54, p<.01$). In the rejected sample, mean perceived freedom of choice for the choice conditions was 45.8, also significantly higher than the mean for the no choice conditions of 28.0 ($t=1.76, df=14, p<.05$).

Since most of the rejected sample was dropped from the choice incongruent group (10 out of 16 rejected), an analysis was performed to compare final attitude of the accepted vs. rejected subjects in this group. The mean final attitude of the rejected sample was 7.4, an attitude strongly against the abolition of tuition fees, and significantly different from the attitude of the accepted sample ($X=31.6$) who expressed an attitude moderately favouring the abolition of tuition fees ($t=4.98, df=22, p<.01$). Thus it seems that the subjects who chose to write an essay against the abolition of tuition fees (i.e., the rejected sample) maintained that attitude in their final rating. Comparison of the rejected and the accepted sample as to premanipulation attitude failed to reveal any significant difference ($t=0.2, ns$).

To determine whether perceived degree of persuasiveness of the essay written had a significant effect on the final attitude rating, an analysis of variance was performed on the persuasiveness data. Results of the analysis of variance are presented in Table 3. No significant differences were found. Neither the premanipulation attitude, nor the degree of choice in writing the essay had an effect on perceived persuasiveness. The data on persuasiveness in the rejected group were analyzed using t-tests, with the same results. These findings are similar to those found by Bem and
Table 3

Analysis of Variance of Effect of Degree of Choice and Premanipulation Attitude on Perceived Degree of Persuasiveness of the Essay

<table>
<thead>
<tr>
<th>Source of Variation</th>
<th>SS</th>
<th>df</th>
<th>MS</th>
<th>F</th>
</tr>
</thead>
<tbody>
<tr>
<td>Degree of Choice (A)</td>
<td>1.45</td>
<td>1</td>
<td>1.45</td>
<td>0.007</td>
</tr>
<tr>
<td>Premanipulation Attitude (congruent vs. incongruent to essay position) (B)</td>
<td>42.87</td>
<td>1</td>
<td>42.87</td>
<td>0.206</td>
</tr>
<tr>
<td>A x B</td>
<td>212.16</td>
<td>1</td>
<td>212.16</td>
<td>1.021</td>
</tr>
<tr>
<td>Within</td>
<td>10789.36</td>
<td>52</td>
<td>207.49</td>
<td></td>
</tr>
</tbody>
</table>

The control group in this experiment merely had been asked to rate their attitude on the questionnaire three weeks apart. A t-test showed no significant difference in attitude rating from the first administration (X=31.1) to the second administration (X=25.5) (t=1.14, ns). Since the attitude ratings of the control subjects did not change significantly from first to second administration of the questionnaire, it can be assumed that any differences between experimental groups in final attitude ratings would be due to the experimental manipulations.

Since subjects in the simulation conditions also had been asked to rate their attitude twice (as well as give an observer rating), a t-test was performed to find whether there was a significant difference between pre- and post-manipulation ratings. Again no difference was found between first (X=30.7)
and second ($X=29.2$) rating. It thus seems that participation in a simulation experiment did not affect the attitude rating of these subjects.

Hartley's test of homogeneity of variance was performed to determine whether population variances were equal. The non-significant difference in population variances indicated homogeneity of variance, and justified the use of an analysis of variance in the main analysis of the data.

Main Analyses

Table 4 presents the mean pre- and post- manipulation attitude ratings of the experimental groups. The higher the score, the more favourable the subject to the abolition of university tuition fees.

Table 4

Mean Pre- and Post- Manipulation Attitude Ratings of the Experimental Groups

<table>
<thead>
<tr>
<th>Choice</th>
<th>Congruent pre</th>
<th>Congruent post</th>
<th>Incongruent pre</th>
<th>Incongruent post</th>
</tr>
</thead>
<tbody>
<tr>
<td>Choice</td>
<td>55.6</td>
<td>46.4</td>
<td>6.0</td>
<td>31.6</td>
</tr>
<tr>
<td>No Choice</td>
<td>57.0</td>
<td>45.4</td>
<td>5.7</td>
<td>24.1</td>
</tr>
</tbody>
</table>

A 2 x 2 analysis of variance, with cell frequencies adjusted to obtain equal n's, was performed on the data. Equal cell frequencies were obtained by randomly dropping Ss from cells in which the number of cases exceeded the smallest n (14) of the cells.
The results of the 2 x 2 (Choice X Premanipulation Attitude) analysis of variance of final attitude ratings is presented in Table 5.

Table 5
Analysis of Variance of Effect of Degree of Choice and Premanipulation Attitude on Final Attitude Rating

<table>
<thead>
<tr>
<th>Source of Variation</th>
<th>SS</th>
<th>df</th>
<th>MS</th>
<th>F</th>
</tr>
</thead>
<tbody>
<tr>
<td>Degree of Choice (A)</td>
<td>257.14</td>
<td>1</td>
<td>257.14</td>
<td>0.87</td>
</tr>
<tr>
<td>Premanipulation Attitude (congruent vs. incongruent to essay position) (B)</td>
<td>4572.07</td>
<td>1</td>
<td>4572.07</td>
<td>15.49*</td>
</tr>
<tr>
<td>A x B</td>
<td>151.15</td>
<td>1</td>
<td>151.15</td>
<td>0.51</td>
</tr>
<tr>
<td>Within</td>
<td>15346.00</td>
<td>52</td>
<td>295.11</td>
<td></td>
</tr>
</tbody>
</table>

* p < .01

Self-perception Hypothesis 1 states that there will be no significant difference in final attitude ratings of subjects in the congruent and incongruent conditions. Cognitive dissonance Hypothesis 1 states that the difference will be significant. Cognitive dissonance Hypothesis 1 was supported; there was a significant effect of premanipulation attitude (F = 15.49, df = 1/52, p < .01). Mean final attitude rating of the congruent groups was 45.9 and of the incongruent groups was 27.9.

Self-perception Hypothesis 2 states that there will be a significant difference in final attitude ratings of choice and no choice groups, whereas cognitive dissonance Hypothesis 2 states that there will not be a significant difference. The
non-significant main effect of degree of choice supports cognitive dissonance theory.

Self-perception Hypothesis 3 states that there will be no significant interaction effect and cognitive dissonance Hypothesis 3 posits that there will be an interaction effect. In this case, cognitive dissonance theory was not supported; the effect of degree of choice did not depend on premanipulation attitude.

A series of F-tests was computed to test the simple effects among cell means. Figure 1 presents a graphic representation of the simple effects of degree of choice on final attitude ratings. The results indicate that the effect of premanipulation attitude is significant in both the choice and no choice conditions. In the choice conditions, the mean attitude rating of the congruent group (X=46.4) is significantly different from the attitude rating of the incongruent group (X=31.6) (F=5.4, df=1/52, p<.01). Similarly, in the no choice conditions, the mean final attitude rating of the congruent group (X=45.4) was significantly different from that of the incongruent group (X=24.1) (F=11.2, df=1/52, p<.01). These results do not support Bem's hypothesis of the non-salience of premanipulation attitudes.

The F-tests suggest that degree of choice does not have a significant effect on either the congruent or the incongruent conditions, although there is a weak trend toward significance (p<.25) in the incongruent condition,
Figure 1. Profiles for the simple effect of degree of choice for different treatment conditions.
the classical dissonance effect. Comparisons with the control group failed to provide any more evidence of a dissonance effect.

It is interesting to note that, when the data were analyzed in terms of change from pre- to post- manipulation, all experimental groups showed a significant change in attitude toward the mean, consistent with a regression toward the mean phenomenon.

On the premanipulation questionnaire, subjects had been asked to rate their degree of commitment on each issue. When the data from the present experiment were partitioned into high and low commitment groups (with a rating of more than 30 as high commitment and less than 30 as low commitment) on the abolition of tuition fees question, it was found that 47 of 55, or 85.5% of the subjects expressed high commitment to their attitude on the issue. No further analyses could be undertaken with the commitment data, due to the very small number of subjects who expressed low commitment. The accepted and rejected samples were compared as to degree of commitment, and no significant differences were found. The mean degree of commitment of the experimental sample was 41.14 (higher than average degree of commitment), and that of the rejected group was 43.08, not significantly different.

A series of t-tests was performed to compare the simulation data with the experimental data. Within the simulation conditions, the mean observer rating for the choice condition (X=40.7) did not differ significantly
from the observer rating for the no choice condition ($X=47.5$) ($t=3.05$, ns). This finding does not support Bem's hypothesis that subjects in an interpersonal simulation can form appropriate mand and tact discriminations when given information on degree of choice.

The observer rating for the simulation choice group did not differ significantly from either of the experimental choice conditions. The observer rating for the simulation no choice subjects did differ significantly from the rating of the no choice incongruent subjects ($t=2.78$, $p<.01$). In addition, there was a significant difference between attitude rating of the simulation groups ($X=44.1$) and the rating of the control group ($X=25.5$) ($t=9.8$, $p<.01$).
CHAPTER IV

DISCUSSION

The major objective of this study was to test some differential predictions generated by self-perception theory and cognitive dissonance theory, using a choice paradigm, with both congruent and incongruent behavior. Overall, the results did not support self-perception hypotheses, and are ambiguous with regard to cognitive dissonance hypotheses.

The results indicate that premanipulation attitudes do influence the final attitude ratings, and thus are counter to the self-perception Hypothesis 1, of the non-salience of premanipulation attitudes.

Self-perception Hypothesis 2 stated that manipulation of degree of choice (i.e., mand-tact discriminations) should be sufficient to affect final attitude rating. This hypothesis was contradicted in favor of the cognitive dissonance Hypothesis 2, that there should not be a significant difference in attitude ratings for the choice and no choice groups. However, degree of choice was found to have no significant effect in either the congruent or the incongruent conditions, a result not expected by either theory, since both theories expect a difference between choice and no choice groups in the incongruent condition. One possible explanation for this lack of significance in the "dissonance" condition may
be the high degree of commitment on the part of most of the
subjects. Eighty-five percent of the total sample expressed
higher than average commitment to this issue. Chris and
Woodyard (1973) found that premanipulation attitude
remains a salient factor for subjects who express high
commitment to an issue.

Another possible confounding effect in the present
study may have been the shift towards the mean from initial
to final attitude rating. Regression toward the mean is a
common phenomenon when the experimental sample expresses
an extreme premanipulation attitude. This factor may have
accounted for some of the variance in the present study.

According to self-perception theory, the subjects in the
simulation conditions should have been able to form
appropriate mand-tact discriminations of behavior. The
non-significant difference between ratings of choice and
no choice simulation subjects fails to support this
hypothesis. In fact, the subjects in the no choice simulation
offered a higher (though non-significant) rating than the
choice subjects, a finding contrary to self-perception
theory. However, insofar as no significant differences
between choice and no choice ratings were found in the
experimental sample, either, the simulation has, in effect,
replicated the results of the experiment.

The high observer attitude rating (X=44.1) of the
simulation subjects differed significantly from the control
group, suggesting that observer subjects did not attribute
an attitude randomly to the participant. Perhaps, rather than basing their observer rating on the discrimination of choice and no choice, they determined observer rating on the basis of how they thought the "average" student felt about the abolition of tuition fees (that is, agreeing that they should be abolished). If this is so, those subjects in the simulation condition whose own attitudes were against the abolition of tuition fees must have felt that theirs was a minority opinion.

As in other studies (Bem & McConnell, 1970; Chris & Woodyard, 1973), the experimenter experienced a non-compliance problem. In the present study, 20% of the original sample was rejected due to non-compliance. This figure lies between the low 6.25% rejected by Bem and McConnell (1970) and the high 33% rejected by Chris and Woodyard (1973). Chris and Woodyard (1973) attempted to explain their higher non-compliance rate in terms of the "relative cognitive predispositions" of the subjects in the experiment. Since Bem and McConnell's subjects were given course credit for their participation, whereas their subjects were not, Chris and Woodyard felt that perhaps this incentive may have induced more complete compliance in Bem's subjects. However, subjects in the present study were also given course credit for participation, and yet there was a relatively high non-compliance rate. A second, more plausible explanation offered by Chris and Woodyard in the same study, was phrased in terms of the differing population samples. Bem and McConnell's subjects
were male undergraduate engineering students, a rather homogeneous group in terms of such factors as motivation and social conformity. Chris and Woodward and the present investigator drew from more heterogeneous groups, that is, high school and undergraduate arts students, respectively.

Analysis of the rejected data revealed no differences from the experimental sample in terms of premanipulation attitudes, perceived freedom of choice to write the essay, perceived persuasiveness of the essay, and degree of commitment to the issue. It would seem logical that most of the rejected sample would have come from the choice incongruent group and this was the case, with 62.5% of the rejected sample dropped from this cell. The rejected subjects from this group remained at the extreme negative end of the scale on final attitude, unlike the tendency of the experimental groups to shift their final attitude towards a mean position.

It is interesting to note that 4 (25%) of the subjects in the rejected sample were dropped from congruent conditions. In other words, they chose to write an essay against the abolition of tuition fees, although they had expressed a positive attitude on the premanipulation questionnaire toward such abolition. Perhaps they misunderstood the instructions.

In summary then, the results did not provide much clear support for the cognitive dissonance hypotheses.
especially in view of the fact that the dissonance effect was not generated. The results in the congruent condition are supportive of cognitive dissonance theory, but cannot be accounted for by self-perception theory. The fact that a relationship was found between premanipulation and postmanipulation attitudes casts serious doubt on the self-perception postulate of the non-relevance of premanipulation attitudes to postmanipulation phenomenology.
APPENDIX A
A Survey of Student Attitudes

This survey is intended to determine student attitudes on certain important issues.

INSTRUCTIONS

Please report your opinion on each issue. Circle the point which most accurately indicates your attitude on the issue. Please mark your point carefully. For example, on the statement, "There is life on Mars," let us suppose that you disagree, but you do not strongly disagree. Then, you might mark the item as marked below or in that general area.

There is life on Mars

<table>
<thead>
<tr>
<th>strongly disagree</th>
<th>strongly agree</th>
</tr>
</thead>
</table>

Following each issue, there will be a "strength of attitude commitment" scale. We are interested in how much your position on the issue means to you. For instance, if you do not feel committed at all to your position, you will mark the scale close to the "No commitment at all" position on the scale. Individuals who are not committed to a position are those who could easily be swayed to another position. They are relatively open-minded about this issue while still holding an opinion. They would not likely participate in any form of activity in support of their opinion.

At the middle range of the "strength of attitude commitment" scale would be individuals who would be less easily swayed from their position. They would be willing to support their position in an argument or debate perhaps.

At the other end of the scale would be individuals who feel strongly or "Completely" committed to their position. Such individuals would see themselves as being very staunch in their position and not able to be swayed. They would be more willing to support their position quite actively and if given the chance engage in a demonstration on its behalf or openly campaign for it.
1. Students should have control over the kinds of courses offered at the University.

   strongly disagree

   How strong do you feel your commitment to your position on this issue is?

   no commitment at all

   complete commitment

2. Abortion laws should be liberalized to allow abortion on demand.

   strongly disagree

   How strong do you feel your commitment to your position on this issue is?

   no commitment at all

   complete commitment

3. Mercy killing should be legalized.

   strongly disagree

   How strong do you feel your commitment to your position on this issue is?

   no commitment at all

   complete commitment

4. The payment of university tuition fees should be abolished.

   strongly disagree

   How strong do you feel your commitment to your position on this issue is?

   no commitment at all

   complete commitment
5. Prostitution should be legalized.

How strong do you feel your commitment to your position on this issue is?

6. There should be a guaranteed annual income in Canada.

How strong do you feel your commitment to your position on this issue is?

7. Pornography should be legalized.

How strong do you feel your commitment to your position on this issue is?
Please circle a point on each of the following scales according to what best represents your present feeling on the issue.

1. Students should have control over the kinds of courses offered at the University.

   
   | strongly agree |
   | strongly disagree |

2. Abortion laws should be liberalized to allow abortion on demand.

   
   | strongly agree |
   | strongly disagree |

3. Mercy killing should be legalized.

   
   | strongly agree |
   | strongly disagree |

4. The payment of university tuition fees should be abolished.

   
   | strongly agree |
   | strongly disagree |

5. Prostitution should be legalized.

   
   | strongly agree |
   | strongly disagree |

6. There should be a guaranteed annual income in Canada.

   
   | strongly agree |
   | strongly disagree |

7. Pornography should be legalized.

   
   | strongly agree |
   | strongly disagree |
You have just written an essay taking a strong position on the abolition of tuition fees issue. Please indicate on the following scale how much freedom of choice you feel you had in choosing which side of the issue to argue for in your essay.

- Complete freedom of choice
- No freedom of choice

We would now like you to judge your essay as to how well you feel you succeeded in making it a persuasive essay.

- Extremely persuasive
- Not at all persuasive
REFERENCES


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