

## A DETERMINANT OF PREFERENCE AMONG MODES OF DISSONANCE REDUCTION

ELAINE WALSTER

*University of Rochester*

ELLEN BERSCHIED AND ANDREW M. BARCLAY<sup>1</sup>

*University of Minnesota*

It was hypothesized that in selecting a dissonance-reduction technique people will search for a solution which is a stable one. Given a choice among modes of dissonance reduction, the individual will search both for a mode which is not challenged by present events and information, and for a mode which is unlikely to come under reality attack in the future. To test this hypothesis, nursery-school children made a decision between 2 toys. One could reduce postdecision dissonance by increasing the attractiveness of the chosen alternative, or decreasing the attractiveness of the rejected alternative, or both. In the experiment, some children expected to hear, in subsequent wks., objective information about whichever toy they chose; others expected to hear objective information about the rejected toy. It was expected that children would reduce their postdecision dissonance by distorting their liking for whichever alternative (the chosen toy or the rejected toy) could not be contradicted by future objective information, rather than by distorting both alternatives. This hypothesis was strongly confirmed.

Most dissonance researchers devote a good deal of preexperimental thought to the identification of all possible ways in which subjects in their experimental situations might attempt to reduce dissonance, and they exercise considerable ingenuity in blocking all modes of dissonance reduction save one. The one mode of dissonance reduction left open for subjects to use ordinarily constitutes the dependent variable. Dissonance researchers have found that they obtain optimal insurance of capturing evidence of dissonance reduction by constructing and timing their measuring instrument to be maximally sensitive to *one* mode of dissonance reduction, rather than by attempting to devise an "omnibus" instrument to reflect use of any one, or any combination, of all the dissonance-reducing techniques possible in the situation.

Aronson (in press) has pointed out that while this modus operandi of dissonance experimentation has produced carefully controlled laboratory studies, it has also produced results that may be, in one sense, misleading. From evidence that a number of dissonance studies have shown that people in specific dissonance-arousing situations reduced their dissonance in a particular fashion, it has sometimes been inferred that people in

more naturalistic, real-life situations will also reduce their dissonance in the same way. Aronson notes that the fact that there exist experiments in which subjects used a particular technique to reduce dissonance indicates only that the experimenters who conducted the studies decided, for one reason or another, to leave that particular mode of dissonance reduction open to their subjects. Given a free choice among a variety of dissonance-reducing techniques, which more naturalistic situations often afford, the arousal of dissonance may produce effects quite different from those obtained in the laboratory.

Only a few isolated investigators have dealt with the problems of predicting which modes of dissonance reduction will be preferred under specific conditions.

Rosenberg and Abelson (1960) conducted an experiment which is one of the few addressed directly to the problem. Within the framework of their own balance theory, they envisioned a hierarchy of preference for cognitive solutions to imbalance. Specifically, they felt that solutions to a particular cognitive dilemma could be ordered according to the amount of work (i.e., changing the affective signs of relationships among previously established cognitions) required to adopt a particular solution. Their experiment confirmed the prediction that the solution requiring the least amount of cognitive labor would be most preferred and the solution requir-

<sup>1</sup>This study was supported in part by a grant from the National Science Foundation (GS 1056). The authors would like to thank Bill Walster, University of Rochester, for his statistical analysis of the data.

ing the most amount of work would be least preferred.

Other theorists (Cartwright & Harary, 1956; Festinger, 1957, p. 27; Zajonc, 1960, pp. 293-295) would also agree that isolated cognitions (having few ties with other cognitions) are more likely to be changed than are central cognitions. Essentially, they argue that if Cognition A is isolated, changing it so that A will be consistent with B can indeed produce balance. However, if Cognition A is linked in a consistent way to many other cognitions the individual possesses (C, D, E, F, etc.), altering Cognition A in an attempt to reduce imbalance is likely to cause more imbalance than it eliminates.

A frequently mentioned criticism of Festinger's dissonance theory has been that its framework contains very few specifications for predicting the priorities given to different methods of dissonance reduction (e.g., Weick, 1965). However, an examination of the theory reveals that although it has stimulated little research in this area, it is not entirely mute on the matter. Festinger (1957) points out several factors which are important in determining how resistant to change various cognitive elements will be: (a) the responsiveness of a cognition to reality, (b) the extent to which a cognition is isolated or central. For Festinger, "The first and foremost source of resistance to change for *any* cognitive element is the responsiveness of such elements to reality [p. 24]." He further states that the pressure to hold ideas in accord with reality is usually strong, and sometimes overwhelming.

Rosenberg and Abelson (1960, p. 159) would agree that reality is often a strong deterrent to many cognitive changes which, if adopted, could produce balance. They view the general sequence of operations in balance reduction as "a search for balance appropriate material, followed by a reality test of such material. (Does it make sense? Is it appropriate and realistic in context?)" Only if the solution passes a reality test do they feel there finally will be an adoption and application of the material.

The following experiment will test the authors' notion that in selecting a technique of dissonance reduction, people are particularly sensitive to the extent to which each possible solution will be a stable one. We expect that, given a choice among modes of dissonance reduction, the individual will search not only for that mode which is not challenged by present events and information, but also for that mode which is least likely to be under reality attack in the future. A person can anticipate his rationalizations being attacked in two ways: (a) One might fear that in the future

he might receive objective evidence concerning that alternative. When compared to his distortions such evidence, because it is strongly tied to reality, would probably generate more dissonance and further cognitive reorganization to bring his cognitions in line with reality might be required. (b) In addition to a desire to avoid future dissonance and the work of additional reorganization, it seems probable that there is also a desire to avoid embarrassment and ridicule often attendant upon the discovery by others that one has indulged in distortion. For example, suppose a man buys a house. Theoretically, there are several avenues available by which he can reduce his postdecision dissonance. He can convince himself that the house is cheaper, is more centrally located, or is more comfortable than any other house available. However, depending on his expectations about the future, an individual is more or less likely to use any one of these alternatives. If the man has a brother-in-law who delights in mocking his blunders and if his brother-in-law has recently been pricing houses himself, our home buyer is going to look for a dissonance-reducing mode which will allow him both to avoid his brother-in-law's ridicule and to avoid future reorganization of his cognitions. Under these conditions the home buyer is not likely to try to convince himself and others that the house is financially and situationally a bargain. The brother-in-law may be able to point out cheaper or more centrally located houses. However, the comfort of a house is ordinarily defined by the person who owns it. It is quite likely that in these circumstances, the dissonance reduction will focus on the comfort aspects of the house rather than on any other. This is the "safe" mode of dissonance reduction.

In brief then, we expect the perceived *stability* of a particular cognitive solution to be an important determinant of whether or not that solution is adopted. People will not adopt solutions when they expect that subsequent objective evidence may contradict these solutions.

## METHOD

### Overview

To test the hypothesis, young children rated the attractiveness of a number of toys and then chose which of two toys they wished to have for their own. After they had chosen a toy, half of the subjects were told that they would periodically, over a long period of time, receive information about how objectively desirable the chosen toy was; the remainder of the subjects were told they would receive information about the objective desirability of the rejected toy. Finally, all subjects were asked to indicate how much they liked the toy they had

chosen and how much they liked the toy they had rejected. We predicted that if the subject expected to receive information about the chosen toy, he would not reduce his decision-aroused dissonance by increasing the attractiveness of the chosen toy, since the forthcoming objective information could very well conflict with his value distortion. Instead, we predicted that subjects in this condition would reduce dissonance by derogating the rejected alternative. Similarly, we predicted that if the subject expected to receive objective information about the rejected toy, he would reduce his dissonance by overvaluing the toy he had chosen, rather than by derogating the rejected toy.

### *Subjects*

Twenty-eight boys enrolled in the University of Minnesota nursery school participated in this experiment. Their ages ranged from 3 years, 8 months to 5 years, 11 months.

### *Procedure*

After the experimenter was introduced to the entire class of nursery-school children by the teacher, he approached each child individually and asked if the child "wanted to play a game" with him. After each child agreed, the experimenter took the subject to a room which had been set aside for the experiment.

After chatting with the subject for a few minutes to establish rapport, the experimenter showed him a rating scale. The rating scales used in the study were designed especially for use with younger children. Each scale consisted of 5 squares which increased in size, one centimeter at a time, from 1 square centimeter to 5 square centimeters. Underneath each square were marked values ranging from 1 to 5. Subjects' ratings on these scales constituted our measurement of the dependent variable.

The experimenter then instructed each child in the use of these scales. He placed a toy on the table in front of the subject and said:

Let's pretend that we are going to rate how much you like this toy. Look at the line of boxes in front of you. We are going to pretend that you like this toy the "best, best in the whole world." I know this may not be true but we are just pretending. Do you see that the boxes in front of you all have different sizes? If you liked this toy the "best, best in the whole world" it would mean you liked it a whole lot. This big, big box on the end means you like it a whole lot and that you think it is the "best, best toy in the whole world."

The experimenter then asked the subjects to point to the box which meant that they thought the toy was the "best, best in the whole world." When they pointed to the largest box, the experimenter said "very good."

After instructing subjects in the use of the largest box, the experimenter continued, "Now let's pretend you think this toy is the 'worst, worst in the whole

world.' That means you only like it a little, little bit. If you only like the toy a little, little bit, where do you think you would put a mark?" If the subject appeared unsure, the experimenter, pointing to the smallest box, said, "That's right, you like it very, very little so we would put a mark in the smallest, smallest box here on the other end."

At this point, the experimenter again asked the subject to indicate which box he would point to if he liked the toy "best, best in the whole world." If at any time the subject appeared to be unsure of his choice, the experimenter repeated the whole procedure until satisfied that the subject understood.

The experimenter continued,

Now that you know how to tell me you like the toy the "best, best in the whole world" or the "worst, worst in the whole world," I am going to teach you how to tell me that the toy is a medium toy. Let's pretend you think this is a good toy, not the best nor the worst in the whole world, which means you like it medium well. If you like it medium, you would point to the medium size box. Can you show me the medium size box in this row?

After the subject had pointed out the medium size box, the experimenter said, "Very good, now you can tell me when you like something a medium amount."

The experimenter then said,

You also see that there is a large medium box and a small medium box. The large box means it is a good toy but not the 'best, best toy in the whole world.' Can you show me the box which means you like the toy very much but don't think that it is the "best, best toy in the whole world?"

The child usually pointed to the large medium size box, labeled "4." After the child had successfully pointed out this box, the experimenter said,

Very good. Now I would like to show you the box that means you think the toy is a bad toy but not the "worst, worst in the whole world." Do you see the small medium size box? This means the toy is a bad one, but not the "worst, worst toy in the whole world." Can you point to the box which means you think the toy is bad but not the "worst, worst toy in the whole world?"

At this point, if the child pointed to the small medium size box labeled "2," the experimenter responded, "Very good." If at any time the subject appeared unsure of his choice when questioned, the experimenter would stop and go through the entire procedure until the subject understood the meaning of each box from the smallest, through the medium sized boxes, to the largest.

When the experimenter was completely satisfied that the subject understood the use of the rating scale, he said, "Why don't we go over here and play with some of the toys I brought with me?" These toys were lined up on a shelf directly in front of the

table where the subject had been working on the rating scales. The toys consisted of: two gasoline-powered racing cars, one white and the other yellow; a Slinky; a Superball; and a house built of interlocking plastic bricks. On the floor in front of the shelf was an inflated Bobo doll.

The experimenter explained to each child that the racing cars had gasoline-powered engines just like real cars. He also explained that they could achieve speeds of 40 or 50 miles per hour. The experimenter demonstrated the use of the Superball, showing how it could bounce far over his head, and demonstrated the use of the Slinky by making it "walk" down a flight of stairs constructed of blocks for the occasion. He showed subjects how the house was built using the interlocking plastic bricks which came in the set, and allowed the subject to look at a book of plans which came in the set and which illustrated many other projects which could be constructed with the set. And, finally, the experimenter showed the Bobo doll and asked the subject if he knew how to play with it. The children generally indicated they knew how to use a Bobo doll and responded by punching the doll several times.

After each subject played with the toys for a few minutes, the experimenter requested that the subject again sit at the table. The experimenter explained that it was time to rate the toys on the scales which he had just learned to use.

When the subject was seated, the experimenter said, "We are going to rate two of the toys." Two rating scales appeared on the prechoice questionnaire placed in front of the subject. Under the first rating scale was written "Bobo doll," and under the second scale was written "Block set." (The prechoice ratings were always presented in a predetermined and balanced order.) The experimenter then asked the subject to point to the box which best represented how much he liked the Bobo doll, and then to point to the box which best represented how much he liked the block set.

After recording the subject's responses and after placing the scales out of sight in a folder, the experimenter told subjects,

We are going to give you one of the two toys which you have just rated. You have your choice of taking home with you either the Bobo doll or the brick set to keep. All you have to do is tell me which one you want. I will write your choice down, and the teacher will give it to you when you go home at the end of the day.

After each subject made his choice, the experimenter instructed him as follows:

I have a friend who is going around to all the other nursery schools in the city. He is talking to all the boys who chose the \_\_\_\_\_ toy [for half the subjects the name of the chosen toy was inserted here; for the other half, the rejected toy]. He is getting all these boys to tell him how much they like the toy, whether they play with it a great deal, whether their brothers and sisters like

to play with it, the kinds of games they played with it, and generally how good a toy they thought it really was. What I am going to do is bring in these reports and read them to you so that you can hear what these boys said about the toy. I will be coming back for the next seven days to read to you. What this means is that I am going to come back to this school for the next week, five days, every day, to read all the things the boys have told my friend about the \_\_\_\_\_ toy. Every day for a week, you will be able to hear evaluations from all the boys who have taken these toys home, played with them, and who have told us how much they liked the toy and the kinds of games they played with it. Can you tell me what we are going to do for the next five days?

Generally the subject was able to tell the experimenter exactly what he had just been told and most seemed to understand exactly what was to take place. If there were any questions, or if it appeared that the subject did not understand what was going to take place, the experimenter went back and explained the whole procedure again until he was satisfied that the subject understood exactly what was going to happen.

The final step in the experimental procedure was to obtain the subject's postchoice ratings of the chosen toy first and the rejected toy second. The experimenter said, "I would like you to show me on this scale, by pointing to one of the boxes, how much you like the toy you are going to take home with you, that is, the \_\_\_\_\_ toy." After the subject had pointed to the box which best represented how much he liked the chosen toy, the experimenter said, "Now I would like you to show me how much you like your *not* chosen toy, that is, the \_\_\_\_\_ toy."

The subject was then told the session was over and that he could go back outside and resume play with the other children. He also was cautioned not to discuss the experiment in any way with the other children until after the experimenter left the school. He was told to tell the other children, if he was asked, that the experiment was a surprise and they would find out what was going to happen when they came into the room. Children were given the toy they chose at the end of the day.

## RESULTS AND DISCUSSION

We hypothesized that the preferred mode of dissonance reduction will be the one least likely to be challenged by subsequent events and information. If this hypothesis is correct, those subjects who were told that they would receive objective information concerning the chosen alternative should show less change (prechoice to postchoice) in their ratings of the chosen toy than in their ratings of the rejected toy. Conversely, subjects who were told that they would receive objective information concerning the attractiveness of the rejected toy should show less

TABLE 1  
MEAN AMOUNT OF DISSONANCE REDUCED BY CHANGES IN THE CHOSEN AND REJECTED ALTERNATIVES BY SUBJECTS IN VARIOUS CONDITIONS

	Chosen alternative			Rejected alternative		
	Original rating	Post-decision rating	Dissonance reduction	Original rating	Post-decision rating	Dissonance reduction
Ss who expect to hear objective material on chosen alternative	3.36 <sup>a</sup>	4.07	+0.71	2.93	1.93	+1.00
Ss who expect to hear objective material on rejected alternative	3.29	4.86	+1.57	3.07	2.86	+0.21

<sup>a</sup> The higher the number, the greater liking the subject has indicated for the toy.

change in their ratings of the rejected toy than in their ratings of the chosen toy. The means of prechoice and postchoice attractiveness ratings of both the chosen and rejected toys are presented in Table 1.

An examination of the means obtained from subjects who expected to hear objective information concerning the *chosen* alternative indicates that subjects in this condition did increase the attractiveness of the chosen toy significantly less than did those subjects who expected to hear objective information concerning the rejected toy ( $F = 8.21$ ,  $df = 1, 26$ ,  $p < .01$ ). Similarly, subjects who expected to hear objective information on the attractiveness of the *rejected* alternative did derogate the rejected toy less than did subjects who expected to hear objective information concerning the chosen toy ( $F = 6.87$ ,  $df = 1, 26$ ,  $p < .05$ ).

There is no evidence to indicate that subjects in one experimental condition were better able to reduce their dissonance than subjects in the other experimental condition. The degree to which subjects reduced their dissonance was assessed by determining the extent to which the postdecisional difference between ratings of the chosen and rejected alternatives was larger than the predecisional difference. Subjects who expected to receive information about the chosen alternative did not reduce their dissonance more than subjects who expected to hear about the rejected alternative ( $F = 0.03$ ,  $df = 1, 26$ ).

It is, therefore, probable that similar processes were occurring in both groups, the only difference being the mode of dissonance reduction used.

It is of course desirable to devise a single test for our hypothesis. This was done in the following way. If our hypothesis is true, subjects who expect to receive information concerning an alternative should be less likely to distort the attractiveness of that alternative than when they

do not expect information concerning the alternative. The mean attractiveness ratings for the chosen and rejected toys in the two experimental conditions are illustrated in Figure 1. We expect that when subjects anticipate future information (solid lines), the changes for the chosen and rejected alternatives would be much smaller than when subjects do not anticipate additional information (see dashed lines). The appropriate test for our prediction is a three-way interaction (Pre- versus Postmeasures  $\times$  Chosen versus Rejected Alternatives  $\times$  Information versus No Information). This interaction is significant as predicted ( $F = 13.62$ ,  $df = 1, 26$ ,  $p < .001$ ).

The data, then, provides strong support for our hypothesis. We may conclude that the perceived stability of a particular cognitive solution to imbalance is an important determinant of

FIGURE 1

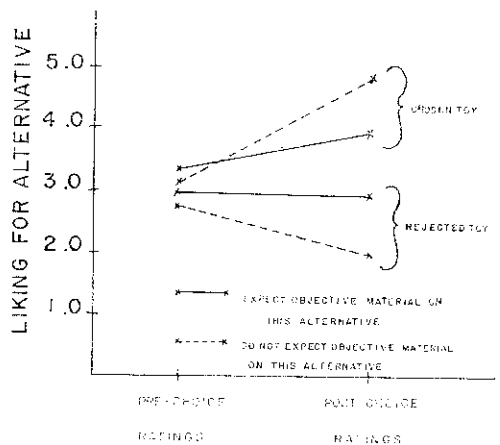


FIG. 1. Liking for chosen and rejected toy by subjects expecting to hear information concerning chosen toy or concerning rejected toy.

whether or not that solution is adopted. The expectation of future objective information concerning a mode of dissonance reduction appears to decrease utilization of that mode.

## REFERENCES

- ARONSON, E. Dissonance theory: Progress and Problems. In R. P. Abelson, E. Aronson, J. M. Newcomb, W. J. McGuire, M. J. Rosenberg, & P. Tannenbaum (Eds.), *Source book on cognitive consistency*. New York: Rand-McNally, in press.
- CARTWRIGHT, D., & HARARY, F. Structural balance: A generalization of Heider's theory. *Psychological Review*, 1956, **63**, 277-293.
- FESTINGER, L. *A theory of cognitive dissonance*. Stanford, California: Stanford University Press, 1957.
- ROSENBERG, M. J., & ABELSON, L. P. An analysis of cognitive balancing. In M. J. Rosenberg, C. I. Hovland, W. J. McGuire, R. P. Abelson, & J. W. Brehm (Eds.), *Attitude organization and change*. New Haven, Conn.: Yale University Press, 1960.
- WEICK, K. E. When prophecy pales: The fate of dissonance theory. *Psychological Reports*, 1965, **16**, 1261-1275.
- ZAJONC, R. B. The concepts of balance, congruity, and dissonance. *Public Opinion Quarterly*, 1960, **24**, 280-286.

(Received October 6, 1966)