

Long-Term Behavioral Effects of Cognitive Dissonance¹

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Since the publication of *A Theory of Cognitive Dissonance* (Festinger, 1957), a large number of studies have been conducted to test a variety of deductions from the theory. Although not all of the results have been positive, in general the published research has supported the basic theory (see Brehm and Cohen, 1962, for a review).

There is, however, one quite serious limitation in this research. Virtually all of the results supporting dissonance theory have involved attitudes of one sort or another as measured by paper and pencil questionnaires, and all of the significant effects were found a very short time after the experimental manipulation. The authors of these studies have made the explicit or implicit assumption that the same results would also hold for appropriate behavioral measures and that with sufficiently powerful manipulations the effects would endure for some time. Unfortunately, there is little or no evidence supporting such an assumption.

Only two published studies have aroused dissonance in an attempt to produce behavioral changes. Although both of these (Cohen, Greenbaum, and Mansson, 1963; and Wieck, 1964) report positive results, the experimental situations were quite unusual; and the effects were obtained very soon after the manipulation. The data on long-term effects are less consistent. Aronson and Carlsmith (1963) report that 45 days after an initial manipulation there was still some tendency for a dissonance effect to remain. Opposed to this is the result of a study by Walster (1964). Post-decisional changes in attitudes were taken at various intervals after a choice, and it was found that after ninety minutes attitudes were the same as before the decision was made.

The issue of whether or not dissonance theory applies to important, enduring, behavior is particularly important because of the nature of the

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theory. It is clearly a cognitive theory, and is stated in terms of thoughts, opinions, beliefs, etc. A person's awareness of his own behavior is a cognitive element and fits into the theoretical framework, but the theory does not deal directly with the behavior itself. It is assumed, of course, that changes in cognitions will tend to produce corresponding changes in relevant behavior and vice versa; but as Festinger has recently pointed out (1964), this remains to be shown. The present study, therefore, was designed primarily to demonstrate that the arousal and subsequent reduction of cognitive dissonance can affect relatively important behavior and that this effect can endure over a reasonably long period of time.

One of the most ubiquitous and important problems in behavior modification is the attempt to shape a child's behavior so that it is in accordance with the moral, legal, and social values of society. It is relatively easy to make the child behave correctly when he is offered a reward or threatened with punishment, but this is far from enough. For the socialization process to be successful, the child must also behave correctly in the absence of any such direct pressure, and this is considerably more difficult to accomplish. It has been suggested (Aronson and Carlsmith, 1963; Festinger and Freedman, 1964; Mills, 1958) that the theory of cognitive dissonance provides one possible framework within which to consider this problem.

Attempts to shape a child's behavior often occur in a type of forced compliance situation. The child is told not to do something² and is under varying amounts of pressure to obey. The parent or authority giving this restriction may strengthen it with a promise of a reward if the child obeys, a threat of punishment if he does not obey, or some other justification for obeying such as that the toy is fragile and may break if not used correctly. Any of these justifications may vary in magnitude. The rewards may be large or small, the threats mild or severe, the reasons good or bad, etc. If the child obeys the restriction, he is in a potentially dissonant situation because he wanted to perform the forbidden act but did not. As in other forced compliance situations, the greater the justification for obeying, the less dissonance should be aroused (cf. Festinger and Carlsmith, 1959; Freedman, 1963; Rabbie, Brehm, and Cohen, 1959; etc.).

Consider a situation in which a child is told not to play with a very attractive, desirable toy, and is threatened with either mild or severe punishment for disobeying. If he obeys, all those factors which made him want to play with the toy are dissonant with the knowledge that he did not play with it. However, these factors are to some extent balanced by

²The same arguments would hold for situations in which the child is told to do something, but for purposes of this paper the discussion will refer only to the case in which the authority attempts to prevent certain behavior.

those factors which justified not playing with it. With a severe threat, the child has a very good justification for not playing since if he played, he would have been punished severely. Since there is little or nothing dissonant about refraining from playing even with a desirable toy in order to avoid severe punishment, little or no dissonance should be aroused under a severe threat condition. With a mild threat, on the other hand, the child does not have as good a reason for refraining. If the threat is mild enough relative to the desirability of the toy, a considerable amount of dissonance should be aroused. Regardless of the absolute level of threat, more dissonance should be aroused by obeying under mild than under severe threat.

Any dissonance that is aroused may be reduced either by decreasing the desire to play with the toy or by increasing the justification for not playing with it. The most direct and obvious way of accomplishing the former is to devalue the forbidden toy or increase the value of other, nonforbidden toys or activities. Aronson and Carlsmith (1963) and Turner and Wright (1964) have recently demonstrated in a situation similar to the one described above that a forbidden toy is devalued more under mild than under severe threat. The justification for not transgressing may be increased by magnifying the perceived dangerousness of the act, by enhancing the value of the prohibiting agent, by accepting the adult's evaluation of the act as wrong, or by a variety of similar changes in the perception of the situation.

The important point for our purpose is that any of these modes of dissonance reduction would tend to make the child less likely to play with the toy in the future. A lessening in the value of the toy, an increase in the value of the authority, an acceptance of the moral value that playing with that toy was wrong will all decrease the child's tendency to play with the toy. All these modes of dissonance reduction should be reflected in one specific type of behavior—to the extent that these modes of reduction occur the child should have less inclination to play with the toy, and he should be less likely to play with it even if the original threat were no longer salient or had been removed entirely.

It should be recalled that less dissonance should be aroused by obeying under severe than under mild threat, and correspondingly, less dissonance reduction should occur in the severe threat condition. Thus, if children refrain from playing with the toy under either severe or mild threat and are then given another opportunity to play with the toy with the threats removed, more of the children in the mild threat than in the severe condition should refrain from playing in this second session.

One final point should be made. The arousal of dissonance in this situation depends upon the lack of justification for obeying the restriction. If

the child never considers transgressing because he perceives the pressure against this to be too great, no dissonance should be aroused. In other words, the child must face and resist temptation in order for dissonance to be produced. If, for example, the parent made the threat, even a mild threat, but never gave the child a chance to transgress, little or no dissonance would be aroused.

The analysis in terms of cognitive dissonance may now be summarized. A child is told not to play with a toy and is threatened with severe or mild punishment if he transgresses. If he is put into a situation in which he is tempted to play with it and he does not, greater dissonance will be aroused under mild than under severe threat. If there is then another opportunity to play with the toy and the threats are removed, those children who resisted temptation under mild threat will be less likely to play with the toy than those who resisted under severe threat. This difference between mild and severe threat will not occur if the child was not exposed to temptation in the first place. The present experiment was done to test this prediction with the additional specification that the effect could be demonstrated 3 or more weeks after the initial dissonance manipulation.

METHOD

Design

Children were told not to play with a very desirable toy under either high or low threat for disobeying, and were given a five minute free period during which the toy was present and available. During this period half of Ss in each threat condition were left alone with the toy (experimental groups); half were not left alone (control groups). Ratings of the attractiveness of the forbidden toy and four other toys were taken before the threat instructions were given and after the free period. Several weeks later the threats were nullified by a second *E* and Ss were again given the opportunity to play with the forbidden toy. There were thus four groups: experimental mild and severe threat (EM and ES), and control mild and severe threat (CM and CS). The mild and severe threats served as high or low justification for obeying in the first session, and the major prediction was that fewer Ss in the EM than in the ES condition would play with the toy during the second session. The control groups were included to assess the direct effect of the threat instructions. There was presumably little or no temptation during the first session of the control condition because *E* was present. Since only those Ss who resisted temptation should feel any dissonance, the predicted superiority of the mild threat instructions should appear in the experimental conditions but not in the control conditions.

Procedure

The Ss were 89 boys in the second to fourth grades in the Carmel and Springer schools in Los Altos, California. They were run individually and randomly assigned to conditions. Four Ss (two in each of the experimental conditions) violated the

prohibition by playing with the toy in the first session and were not included in the analysis, and two more were absent and could not be seen in the second session. The remaining 83 Ss were divided equally among the four conditions except that the CS had 20 Ss and the other groups had 21 Ss.

The procedure in the first session was quite similar to that employed by Aronson and Carlsmith (1963). The S was told that the study concerned children's preferences among various toys. He was asked to indicate his liking of each of five toys on a scale ranging from 0 ("very, very bad toy") to 100 ("very, very good toy") by pointing to a place on the scale. The five toys were a cheap plastic submarine, an extremely expensive, battery controlled robot, a child's baseball glove, an unloaded Dick Tracy toy rifle, and a Tonka tractor. The robot was the toy which was forbidden in order to maximize the temptation to transgress. It was placed on the floor with its control handle on a table, and the other toys were laid out neatly on the table. The toys were demonstrated briefly by E in the order listed above, and were then rated by S in the same order. The E recorded the ratings on a separate sheet.

At this point the procedure diverged for the various conditions. For the experimental Ss, E pretended to remember that he had an errand to do and said that he had to leave for about 10 minutes. For the control Ss, E said that he had something to do and would be busy for about 10 minutes working in the room.

In the low threat conditions E continued, "While I'm gone (or busy) you can play with the toys if you want. You can play with any of them except the robot (pointing to it). Do not play with the robot. It is wrong to play with the robot." The high threat conditions had these same instructions with the addition of the following: "If you play with the robot I'll be very angry and will have to do something about it." Note that Ss are told that it is "wrong" to play with the robot, and also that the severe threat condition depends primarily on an ambiguous, vague threat to "do something about it." It was felt that this would probably be more threatening and would be less susceptible to disbelief than any specific threat.

The E then left the room in the experimental conditions, or worked at some papers in the room in the control conditions. A concealed electric timer was attached to the control switch on the robot so that it would indicate whether or not the robot was turned on, and if so, for how long. At the end of only five minutes, E returned to the room (or finished his work), told S that we wanted a second rating of the toys, and said that sometimes ratings change and sometimes they did not change, and that S should rate them as he felt about them now. After the second rating, S was thanked, told not to talk about the study with anyone else, and sent back to his class. This first session was run by a male E.

The second session was arranged to make it appear unrelated to the first. The interval between the two sessions ranged from 23 to 64 days (Christmas vacation interrupted the course of the study) with a mean interval of 39.8 days. There were no appreciable differences among the groups in either the range of time intervals or the mean interval. This second session was run by a female E who was not described as coming from Stanford, whereas the male E who ran the first session was explicitly from Stanford. The same experimental room was used to make the presence of the toys plausible, but the furniture was rearranged somewhat. The toys were in the far corner of the room placed in a disorderly manner. The control switch for the robot was draped carelessly over a music stand, and the other toys were scattered around.

The E, who did not know what group S was in, asked him to sit at the table and told him that she wanted him to copy some drawings. She then administered five cards of the Bender Gestalt (Bender, 1938) which S copied while E timed his re-

sponses. After the Bender was finished, *E* said that she had to score it and might want to ask *S* some questions about it. She said that while she was doing that, if *S* wanted he could play with any of the toys that someone had left in the room (pointing to the toys). This was delivered rather casually, and she then pretended to begin scoring the test. If, as happened occasionally, *S* continued to sit at the table, *E* repeated that *S* could play with the toys, and finally she said that she would prefer it if *S* did not watch her. Most *S*s played with some of the toys, but as will be discussed later, a few did not play with any. If *S* asked specifically if he could play with the robot, *E* responded that as far as she was concerned he could play with any of the toys. As before, the timing apparatus timed if and how long *S* played with the robot, and *E* also recorded from the stopwatch how many seconds the toy was running. Unfortunately, part-way through the experiment, the robot broke down and would no longer operate. This, of course, made time scores meaningless since *S* would immediately discontinue playing with the robot as soon as it was obvious that it was not working. Therefore, the major data are simply whether or not *S* pressed the control switch.

At the end of four minutes, *E* said she was finished scoring the drawings and that *S* had done quite well. She thanked him and urged him not to talk about the study. This concluded the experiment.

TABLE 1
NUMBER IN EACH CONDITION WHO PLAYED WITH ROBOT IN SECOND SESSION

Group	Low threat		High threat	
	Played	Did not play	Played	Did not play
Experimental	6	15	14	7
Control	14	7	13	7

RESULTS

Our original basic assumption was that less dissonance would be aroused by resisting temptation under high justification than under low justification, and that this difference would be reflected in subsequent behavior. In particular, it was predicted that the mild threat experimental condition (EM) would produce more dissonance than the severe threat experimental (ES) and that fewer *S*s in the EM than in the ES would play with the forbidden toy in the second session. The relevant data are presented in Table 1, which shows the number of *S*s in each group who played with the robot in the second session. It may be seen that more than twice as many *S*s in the ES condition as in the EM condition played with the previously forbidden toy. This difference is in the predicted direction and is significant ($X^2 = 6.11, p < .02$). In other words, the use of a mild threat in the first session more effectively prevented subsequent transgression than the use of a severe threat.

Since the presence of *E* during the first session should have been suffi-

cient justification by itself to prevent the arousal of dissonance, no difference was expected between the mild and severe threat control conditions. Regardless of the severity of the threat, Ss should have felt little dissonance; and the two groups should therefore not have differed in amount of transgression during the second session. The results are consistent with this analysis—the amount of transgression in the two control conditions was virtually identical.

No prediction was made regarding differences between the experimental severe threat condition and the control groups, because the exact strength of the threat was undetermined. If the severe threat had by itself been sufficient to preclude the arousal of any dissonance, the additional justification provided by *E*'s presence would not have made any difference. If, however, the severe threat were not this effective, additional justification could have further reduced the amount of dissonance; and the control groups would show greater transgression than the experimental severe threat group. Since the actual results show no differences between the control groups and the experimental severe threat group, it appears that the severe threat provided enough justification for not playing with the toy so that little or no dissonance was aroused.

TABLE 2

NUMBER IN EACH CONDITION WHO PLAYED WITH ROBOT IN SECOND SESSION, WITH Ss WHO PLAYED WITH NO TOYS OMITTED FROM DATA

Group	Mild threat		Severe threat	
	Played	Did not play	Played	Did not play
Experimental	6	12	14	4
Control	14	1	13	7

Included in the data presented in Table 1 are some Ss who did not play with any toys in the second session. It might be argued that these Ss are not resisting the temptation to play with the robot, but rather are not interested in playing with the toys. In a sense these Ss should not be included among those who do not play with the forbidden toy since they do not play with any toy. As may be seen in Table 2, removing these Ss from the analysis does not change the main effect appreciably. The difference between EM and ES conditions is still in the predicted direction and significant ($X^2 = 5.51, p < .02$). There is a slight tendency for the CM Ss to transgress more than the CS Ss. Although this difference is not significant, it suggests that the effect in the experimental conditions may have occurred despite some direct effect of the threat which operated in the direction opposite to the effect of the dissonance manipulation.

The other major data are presented in Table 3 which shows the changes in evaluations of the toys from the beginning to the end of the first experimental session. The toys were rated on a scale ranging from 0 ("very, very bad toy") to 100 ("very, very good toy"). If dissonance were aroused by not playing with the forbidden toy, one possible way of reducing it would have been to devalue the forbidden toy or increase the value of the other toys. This would make the forbidden toy relatively less attractive and would decrease the temptation to play with it. As may be seen, all of the groups change their ratings significantly in the direction of dissonance reduction. This change need not, however, have been due to dissonance reduction. In the first place, the initial ratings of the robot were so high (all above 90) that an increase in its rating was highly unlikely. In addition, almost all Ss played with some of the toys but not the robot. The relative increase in the other toys might therefore have been due to greater familiarity with them, or some other factor associated with having used them.

TABLE 3
MEAN CHANGES IN RATINGS OF TOYS

Group		Robot	Others	Total change in direction of dissonance reduction ^a
Experimental	Mild threat	-5.48 ^b	+7.72	13.20
	Severe threat	-4.28	+5.90	10.18
Control	Mild threat	-4.00	+5.31	9.31
	Severe threat	-4.84	+5.93	10.77

^a The sum of the decrease in rating of the robot and the mean increase in rating of the other toys.

^b All changes are significantly different from no change at $p < .05$. None of the differences between experimental groups approaches significance.

A more meaningful way of considering these data is to compare the various groups in amount of change. Presumably the greater the dissonance that was aroused, the more change in the direction of dissonance reduction that should have occurred. Therefore, the mild threat experimental group should show more dissonance reduction than the other groups. On both individual measures and the overall change measure, the EM group does show the most change in the direction of dissonance reduction; but none of these differences are significant. Thus, although the results are consistent with the dissonance analysis, they do not provide significant support for it.

This lack of significance is in contrast with the results of the study by

Aronson and Carlsmith (1963) in which a forbidden toy was devalued significantly more under mild threat than under severe threat conditions. The experimental situations are not, however, exactly comparable. In the present study the forbidden toy, the robot, was intentionally made much more attractive than any of the other toys in order to maximize the temptation to play with it. It was so much more desirable than the other toys (it was rated an average of more than ten points higher than the closest toy) that devaluing it below the other toys must have been extremely difficult and unrealistic. It seems likely that re-evaluating the toys was not an efficient or practical mode of dissonance reduction in the present experiment and was not employed to any great extent.

DISCUSSION

Although the difference in amount of transgression between the high and low threat experimental groups is clearly consistent with the prediction from dissonance theory, other explanations of this difference are possible. A more severe threat might have called more attention to the forbidden toy or made it seem more attractive, and this would tend to make the severe threat Ss play with the toy more than did the mild threat Ss. Or, *E* may have been liked more or believed more when he made a mild threat than when he made a severe threat, and his original commands would have been obeyed more in the former condition. Any of these explanations sounds plausible, and there are probably a number of other reasonable possibilities that could explain the difference between the high and low threat experimental conditions.

It should be noted, however, that the control Ss received exactly the same threat instructions as the corresponding experimental Ss, and that all Ss went through exactly the same procedure with one crucial difference. In the experimental conditions, *E* left the room and gave *S* a chance to play with the forbidden toy without being observed; in the control conditions, *E* did not leave the room. Any explanation of the results must therefore account for the fact that only when *E* leaves the room during the first session do the threats have differential effects on subsequent behavior. The explanations offered above clearly would require differences in both experimental and control conditions and may thus be ruled out; and most other explanations based on surmises about the differential meaning, plausibility or direct effect of the threat instructions would probably also be eliminated.

The results do fit the analysis in terms of cognitive dissonance. When Ss are given a mild threat and they resist temptation, more dissonance is produced than when they resist temptation because of a severe threat. This dissonance may be reduced in a number of ways, all of which would tend to make *S* refrain from playing with the toy in the future even in

the absence of any threat. Since more dissonance is aroused in the low threat condition, more dissonance reduction occurs in that condition; and the low threat Ss should refrain from playing to a greater extent than should the high threat Ss.

When *E* remains in the room, there is no temptation to play with the forbidden toy since *S* would surely get caught. Therefore, no dissonance is aroused in either high or low threat control conditions; and the two should not differ. The lack of difference between control groups is clearly consistent with the dissonance analysis and would seem to make alternative explanations somewhat difficult.

The results thus strongly support the predictions based on the theory of cognitive dissonance. They provide a clear demonstration that the theory does apply to behavioral as well as attitudinal changes and that the arousal and reduction of differential amounts of dissonance can have a significant effect even after an interval of just under 6 weeks.

Since the data on changes in ratings of the toy indicated that this was not a major mode of dissonance reduction in the present situation, it might be interesting to speculate on what the primary mode of reduction was. One provocative possibility is that at least in part dissonance was reduced by an acceptance of the idea that it was wrong to play with the forbidden toy. In other words, the subject may have provided himself with moral justification for obeying the restriction. This would tend to make him less likely to play with the toy in the second session, even though another *E* said it was all right to play with it.

As Festinger and Freedman have pointed out (1964), one implication of this is that inculcating moral values will be most successful if a minimal amount of justification of any kind is offered for the relevant behavior. If the goal is to make a child accept the values of society, he should not be given a great many logical reasons supporting the valued behavior, nor threatened with severe punishment or eternal damnation if he transgresses, nor promised great rewards, eternal or otherwise, for obeying. Rather, he should be given just enough justification to cause him to obey in the presence of the justification; and then his acceptance of the value itself will be maximal. This analysis of the development of moral values is, of course, highly speculative, and the present study offers no evidence directly supporting it. The present result and that reported by Mills (1958) are, however, consistent with the analysis, and it is hoped that it will be tested more directly by additional research.

SUMMARY

The study was conducted to investigate whether or not the arousal of cognitive dissonance can produce long-term behavioral effects. Children

were told not to play with a very desirable toy under high or low threat, and were left alone with the toy. Those who did not play with it were given a second opportunity to play with the toy several weeks later, with the original threat removed. The prediction was that those subjects who had resisted temptation under mild threat would be less likely to play with the toy in this second session than would those who had resisted under severe threat. The results supported this prediction.

REFERENCES

- ARONSON, E., AND CARLSMITH, J. M. The effect of the severity of threat on the devaluation of forbidden behavior. *J. abnorm. soc. Psychol.*, 1963, 66, 584-588.
- BENDER, LAURETTA. A visual motor gestalt test and its clinical use. Research Monogr. No. 3, *Amer. Orthopsychiat. Assoc.*, 1938.
- BREHM, J. W., AND COHEN, A. R. *Explorations in Cognitive Dissonance*. Wiley: New York, 1962.
- COHEN, A. R., GREENBAUM, C. W., AND MANSSON, H. H. Commitment to social deprivation and verbal conditioning. *J. abnorm. soc. Psychol.*, 1963, 67, 410-421.
- FESTINGER, L. *A theory of cognitive dissonance*. Stanford, Calif.: Univer. Press, 1957.
- FESTINGER, L. Behavioral support for opinion change. *Pub. Opin. Quart.*, 1964, 28, 404-417.
- FESTINGER, L., AND CARLSMITH, J. Cognitive consequences of forced compliance. *J. abnorm. soc. Psychol.*, 1959, 58, 203-210.
- FESTINGER, L., AND FREEDMAN, J. L. Dissonance reduction and moral values. In *Personality Change* (Worchel and Byrne, ed.). New York: Wiley, 1964.
- FREEDMAN, J. L. Attitudinal effects of inadequate justification. *J. Pers.*, 1963, 31, 371-385.
- MILLS, J. Changes in moral attitudes following temptation. *J. Pers.*, 1958, 26, 517-531.
- RABBIE, J. M., BREHM, J. W., AND COHEN, A. R. Verbalization and reactions to cognitive dissonance. *J. Pers.*, 1959, 27, 407-417.
- TURNER, ELIZABETH A., AND WRIGHT, J. C. The effects of severity of threat and perceived availability on the attractiveness of objects. Unpublished manuscript, 1964.
- WALSTER, ELAINE. The temporal sequence of post-decision processes. In *Conflict, decision and dissonance* (L. Festinger, ed.). Stanford, Calif.: Univer. Press, 1964. pp. 112-128.
- WIECK, K. E. Reduction of cognitive dissonance through task enhancement and effort expenditure. *J. abnorm. soc. Psychol.*, 1964, 68, 533-539.

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