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GRADUATE COLLEGE

REINFORCEMENT PROPERTIES OF NEGATIVE AFFECT REDUCTION

A DISSERTATION

SUBMITTED TO THE GRADUATE FACULTY

in partial fulfillment of the requirements for the

degree of

DOCTOR OF PHILOSOPHY

BY

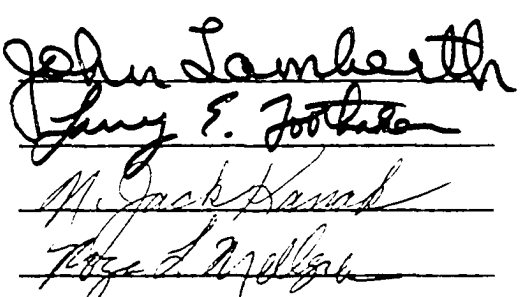
JOHN MICHAEL DAVIS

Norman, Oklahoma

1974

REINFORCEMENT PROPERTIES OF NEGATIVE AFFECT REDUCTION

APPROVED BY



DISSERTATION COMMITTEE

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I would like to express my deep and lasting appreciation first to Dr. John Lamberth. I owe more than I can ever hope to repay. Any success I may achieve will be largely due to the wisdom and patience of his advice and to the excellence of his scholarly work and his guidance.

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REINFORCEMENT PROPERTIES OF NEGATIVE AFFECT REDUCTION

John Michael Davis

University of Oklahoma

Abstract

The hypothesis was investigated that responding on the dependent measures of interpersonal attraction and interpersonal affect has reinforcing as well as affect reducing properties. By performing a simple instrumental response, Ss (n = 32) obtained the opportunity to respond to disagreement with (a) an expression of personal feelings (affect) or (b) an evaluation of the disagreer (attraction). Instrumental response speeds increased over trials ($p < .0001$) for both groups. Negative affect was dissipated by expressions of negative evaluations but not by expressions of negative feelings. These results suggest that responses on the attraction and affective measures play more fundamental roles than merely those of dependent variables. They also reinforce instrumental responses upon which they are made contingent and attraction responses alter affective states.

REINFORCEMENT PROPERTIES OF NEGATIVE AFFECT REDUCTION

John Michael Davis

University of Oklahoma

Byrne, Lamberth, Palmer & London (1969) first suggested that the act of evaluating a stranger who has disagreed with S reduces the affect elicited by the disagreement. Lamberth, Gouaux & Padd (1973) used both disagreement and negative evaluations and found that both types of negative stimuli induce negative affect and that evaluating the source of the negative stimuli reduced the affect elicited. Gouaux (1972) presented Ss with a disagreeing stranger and had (1) group 1 evaluate the stranger on the Interpersonal Judgement Scale (IJS) (Byrne, 1961), (2) group 2 fill out a bland information form and (3) group 3 evaluate the stranger on a 30-item adjective check list prior to assessing affect on the semantic differential. The negative affect induced by the disagreement was dissipated for both groups 1 and 3, but not for group 2. Evidence from the Byrne et al., data indicate that the evaluation of the stranger by S need not be explicit to reduce the affect.

These studies have been consistent in showing the dissipation of negative affect subsequent to evaluating the source of the

negative stimuli. Gouaux (1972) also showed that when given the opportunity to again evaluate the stranger on a different measure of attraction, attraction to the disagreer was more positive than that shown by groups who had not previously evaluated the stranger. Increased positive attraction scores occasioned by the act of evaluating may suggest more than mere negative affect reduction. The positive attraction scores can also be interpreted as preliminary support for the notion that the act of evaluating is reinforcing.

Weiss, Lombardo, Warren and Kelley (1971) have provided powerful support for the hypothesis that the opportunity to speak in reply to a disagreeing statement functions as a reinforcer. In four separate experiments, the opportunity to reply to disagreement was made contingent upon an instrumental response. Their results showed that the act of replying to disagreement, rather than being merely a dependent variable, plays a more fundamental role as a reinforcer which influences the subject's behavior. From this data and the data suggesting that negative affect reduction occasioned by evaluating results in more positive attraction scores, the notion was derived that the opportunity to evaluate has reinforcement properties.

Interpersonal attraction theory (Byrne, 1971; Byrne & Clore, 1970; Clore & Byrne, in press) has suggested a close relationship

between affective and evaluative responses and their reinforcing properties, a relationship that remains little understood. Typically the evaluative responses have been on the IJS and designated as the dependent variable measuring attraction. The affective responses have usually been measured on the semantic differential and assumed to mediate attraction. The stimuli that determine attraction (attitudinal and evaluative statements) have reinforcing properties and also elicit affective responses. The chain seems complete: stimuli with reinforcement properties elicit implicit affective responses which determine evaluative responses. However, the situation is more complex than this. As Byrne (1971, p. 270) has pointed out, the responses on the semantic differential are also evaluative responses in that they are an evaluation by the S of his own affective responses to information, while the IJS is an evaluation of the source of information. The empirical evidence clearly shows that evaluating on the IJS is affect reducing and that evaluating on the adjective check list is affect reducing (Gouaux, 1972). Is evaluating on the semantic differential also affect reducing? If so, it reduces the very thing it is intended to measure. Moreover, it may function as a reinforcer, thereby further influencing behavior.

The present study was designed to investigate the hypothesis that the opportunity to evaluate on the dependent variables of affect and interpersonal attraction is specifically a reinforcer when it follows the receipt of disagreement induced negative affect.

Method

The Ss were 32 introductory psychology students at the University of Oklahoma who volunteered to participate in the experiment as part of a course requirement. All Ss had filled out a 20 item Survey of Attitudes in class approximately six weeks earlier in the semester. The Ss were divided into two groups, an unpleasant-pleasant (U-P) group and a dislike-like (D-L) group.

The apparatus was a gray wooden panel, 30 X 30 inches, which separated the S from the experimenter during conditioning trials. The S was seated facing the panel which included a large lever in the center that could be depressed 15 inches, a slit through which cards were received in the bottom right quadrant, a green "ready" light in the top right quadrant, and a semicircle of seven buttons over an amber light in the top left quadrant. The center button was labeled "NEUTRAL". In the U-P condition, the button on the extreme left was labeled "UNPLEASANT" and the button on the extreme right was labeled "PLEASANT". In the D-L condition, the button on the extreme left was labeled "DISLIKE" and the button on the extreme right was labeled "LIKE". The experimenter was seated behind the panel. The back of the panel contained a small tray and a slit through which cards could be passed to the S, a clock which recorded the time from the onset of the green "ready" light to the beginning of the lever press, a second clock which recorded the time from the top to the bottom of the lever press, and seven lights to indicate

which button the S pushed.

The cards which Ss received contained homogeneous dissimilar attitude statements. That is, they were statements about a single attitudinal topic and they were consistently in disagreement with the attitude expressed by the S on his Survey of Attitudes. Each S received attitude statements involving only a single topic on which he had checked an extreme alternative. The attitudinal topic was always chosen from among six important topics (Byrne, 1971).

Ss were run individually. When an S arrived for the experiment, he was seated in front of the gray panel and told that the experiment concerned the way in which people respond to social stimuli. Each S was told that he would receive the attitudes of another student typed on cards and was asked to read aloud the typed statements. He was also told that after reading each attitude statement, he would have the opportunity to record his own feelings (in the U-P condition) or to record his evaluation of the stranger (in the D-L condition) by pushing one of the seven buttons. However, in order to have the opportunity to record his response on the buttons, he was told that he must first pull the lever. Moreover, each S was told that he might stop pulling the lever whenever he wished. Following these instructions, each S was asked to fill out a set of six semantic differential scales indicating his personal feelings at that moment.

After an S completed the semantic differential, conditioning

trials began. The S received an attitude statement and read it aloud. When the green "ready" light came on, the S pulled the lever in order to obtain the opportunity to respond on the buttons. At the same time the lever reached the bottom of the channel, the amber light in the button semicircle illuminated signalling the S that he might push one of the seven buttons to record his response. In the U-P condition, Ss were instructed to push the button that best described their feelings at that very moment; in the D-L condition, Ss were instructed to push the button that best described their evaluation of the student whose attitude statements they had just read. When one of the seven buttons was pushed, the light in the semicircle went out. Approximately four seconds later, the next trial began with the next attitude statement card being received by the S. This procedure was repeated for twenty trials with a different dissimilar attitude statement card on each trial.

The experimenter recorded times on clocks one and two as well as the button that was pushed on each trial. Following trial twenty, Ss were asked to fill out a second semantic differential the way they felt at that moment and then to fill out an IJS. The Ss were thanked and debriefed.

Results

Figure 1 shows the mean response speeds (1.00/latency) on clock 1 for conditioning trials in blocks of two trials. The times recorded on clock 1 were the times from the onset of the "ready" light to indicate that Ss could pull the lever which allowed them to respond on the buttons until Ss began pulling the lever. Therefore, the actual times recorded on the clock were measures of response latency. Response speed scores were obtained by calculating reciprocals on the response latency values.

An examination of figure 1 shows that response speeds for the two groups on the first trial block are approximately equal. Furthermore, the increased speed over trials indicates the Ss in both

---

Insert Figure 1 about here

---

groups learned the instrumental response. Figure 1 also indicates that the response speeds for the two groups did not substantially diverge over the 20 conditioning trials.

Clock 1 response speeds were analyzed with a two-way repeated measures analysis of variance (Groups X Trials). The results indicated a significant increase in response speeds over trials ($F = 5.002$, $df = 19/570$, $p < .0001$). Neither groups effects ($F < 1$) nor interaction effects ($F < 1$) approached significance.

Figure 2 shows the mean response speeds on clock 2 for con-

ditioning trials in two-trial blocks. Clock 2 recorded the times from the beginning to the end of the lever pull. These times were also converted to response speeds. An examination of Figure 2 shows

---

Insert Figure 2 about here

---

the same pattern of results found in Figure 1. That is, response speeds increased over trials indicating that Ss learned the instrumental response and the two groups did not substantially diverge over the 20 trials. Clock 2 response speeds were analyzed with a two-way repeated measures analysis of variance (Groups X Trials). The results indicated a significant increase in response speeds over trials ($F = 3.722$, $df = 19/570$, $p < .0001$). Neither group effects ($F<1$) nor interaction effects ($F<1$) were significant.

Mean scores on the seven buttons were below the neutral score of 4 for both groups on all 20 trials. Thus, it can be concluded that the dissimilar attitude statements had the desired effect of arousing negative affect. In the U-P group, Ss rated their feelings as unpleasant on every trial; in the D-L group, Ss rated their evaluation of the stranger as dislike on every trial. Furthermore, when scores on the buttons were analyzed with a two-way repeated measures analysis of variance (Groups X Trials), the groups main effect showed no difference between groups ($F < 1$).

Semantic differential score means were almost identical for

the two groups on the pre-conditioning semantic differential: 33.00 for the U-P group and 32.63 for the D-L group. Post-conditioning score means were 27.31 for the U-P group and 33.75 for the D-L group. The semantic differential scores were analyzed with a two-way repeated measures analysis of variance (Groups X Pre- Post-). The results showed a significant effect for the pre- post- main effect ($F = 5.155$, $df = 1/30$, $p < .05$) and a significant interaction ($F = 11.493$, $df = 1/30$, $p < .005$). Post hoc comparisons using Duncan's Multiple Range Test (Kirk, 1968) showed that significant differences ($p < .01$) occurred between pre- and post- scores in the U-P group and also between the U-P and D-L groups on post-conditioning scores.

Mean IJS scores for the two groups were 8.188 (U-P group) and 6.750 (D-L groups). The difference between these groups did not reach an acceptable level of significance.

Discussion

Scores for the two groups on the pre-conditioning semantic differential scale as well as the initial trials scores presented in Figure 1 and Figure 2 indicate that Ss in the two groups were similar.

The hypothesis of the present experiment was that the opportunity to evaluate on the dependent variables of affect (unpleasant-pleasant) and interpersonal attraction (dislike-like) is specifically a reinforcer when it follows the receipt of disagreement induced negative affect. The results indicated that Ss will acquire an instrumental response that gives them the opportunity either to express their unpleasant feelings or their dislike of a disagreeing stranger following noxious disagreement. It can be tentatively concluded, therefore, that both the opportunity to express unpleasant feelings and to express dislike are both reinforcing under these conditions. The performance curves shown in Figure 1 and Figure 2 are somewhat surprising, however, in light of the studies showing that negative affect is reduced by evaluating a disagreeing stranger (Bryne, Lamberth, Palmer & London, 1969; Lamberth, Gouaux & Padd, 1973) but not by expressing one's feelings on the semantic differential (Lamberth, et al., 1973). In the present study, the U-P group and the D-L group performed non-differentially on the instrumental response.

Previous studies (Byrne, Lamberth, Palmer & London, 1969;

Lamberth, Gouaux & Padd, 1973) have shown that negative affect generated by dissimilar attitudes is dissipated by the act of evaluating the stranger holding the dissimilar attitudes. The data from the pre- and post- semantic differential scores of the present experiment further support this conclusion. The group which indicated their feelings (U-P) following each lever press had a significant drop from the pre- to the post-semantic differential while the group which had the opportunity to evaluate the stranger (D-L) indicated a slight (non-significant) rise. The difference between the groups on the post-test semantic differential was also significant. The lack of change between the pre- and post-test semantic differentials for the group which evaluated the disagreeing stranger is consistent with the previous research mentioned above and is strong evidence that the act of evaluating the stranger dissipates the affect which is aroused by the dissimilar attitudes.

One problem of interpretation should be made explicit at this point. The results of the semantic differentials were inconsistent with the performance on the conditioning trials if it is assumed that the reinforcement for the lever press response was negative affect reduction occasioned by the opportunity to evaluate. The semantic differential scores showed significant affect reduction for D-L group Ss. However, the performance on the instrumental response did not show greater reinforcement effects for the D-L

group Ss. This inconsistency suggests either (1) that the reinforcement for the lever press response was not isomorphic with the negative affect reduction occasioned during the conditioning trials, or (2) that artifacts of the design masked the differential reinforcement effects of differential negative affect reduction. The second possibility seems most probable. Both groups were being punished by disagreement following each evaluative response. Moreover, the instrumental response (lever press) did not terminate the noxious negative affect. It merely provided the opportunity for an evaluative response. Therefore, the stimulus which was contingent upon the lever press cannot strictly be called negative reinforcement. It is possible that the reinforcement difference between the opportunity to evaluate the disagreer and the opportunity to indicate one's feelings immediately following each lever press was not sufficiently strong to show response-speed differences. Clearly, this is a case where more research is needed.

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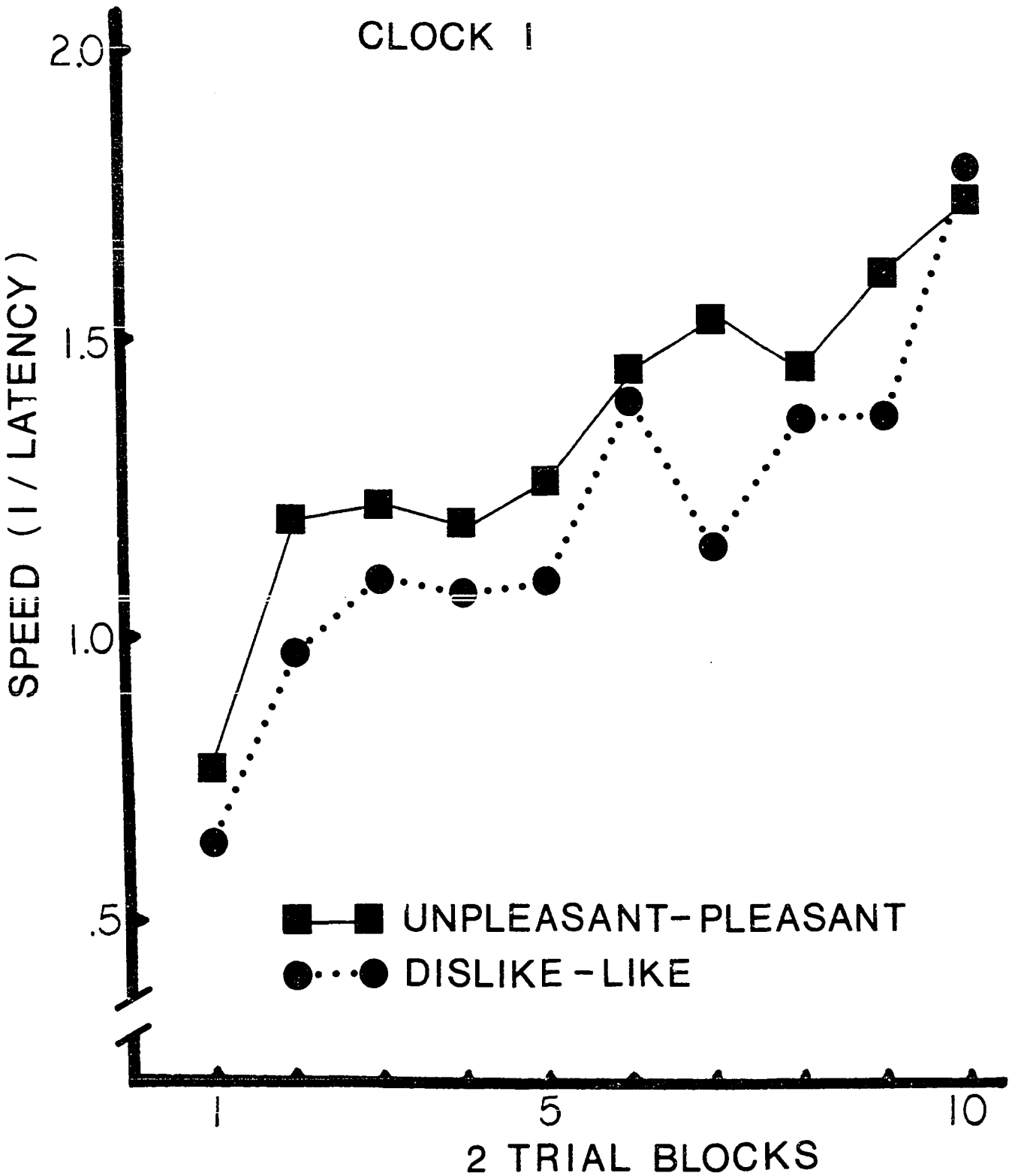
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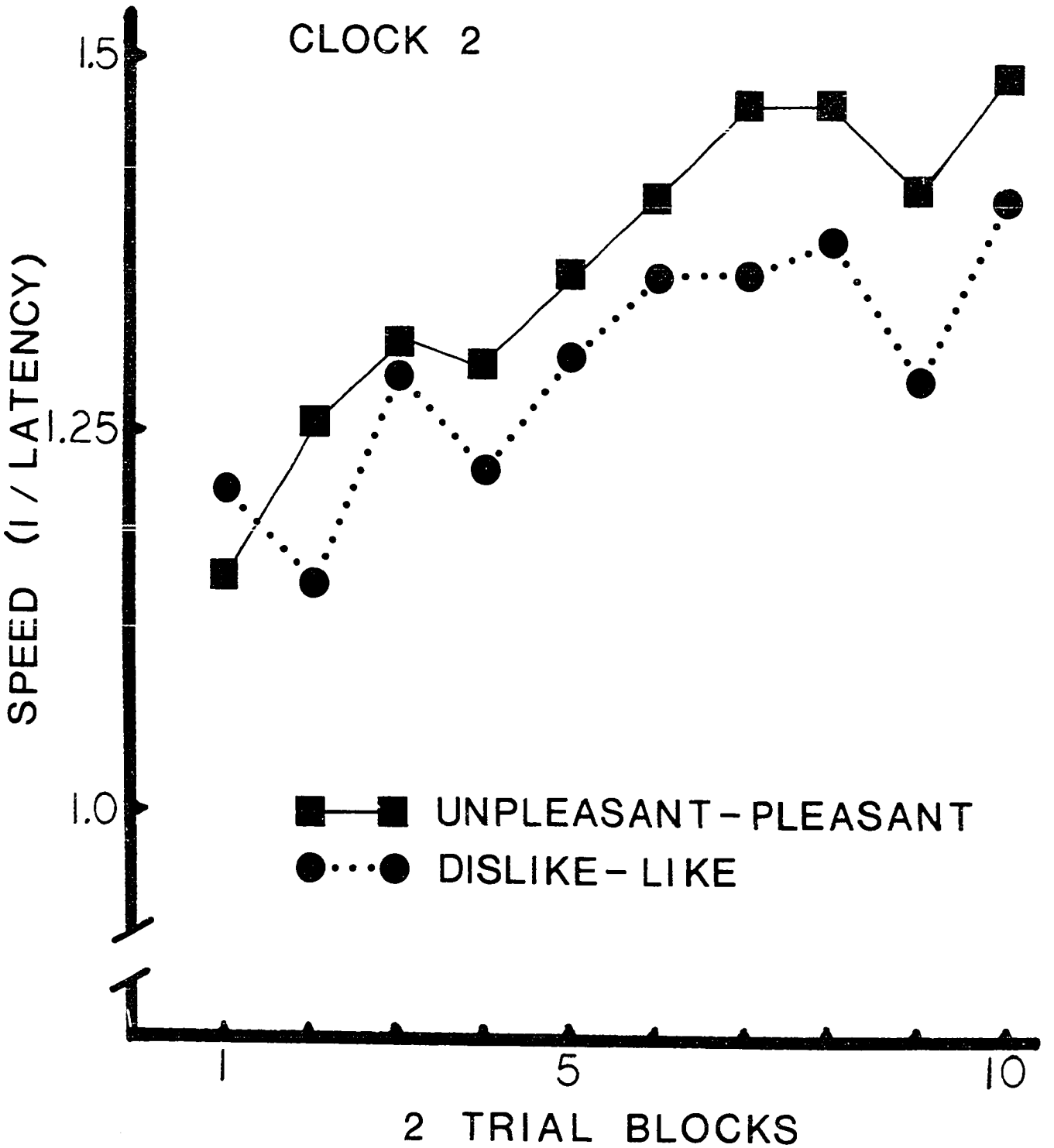
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Figure Captions

Figure 1 Mean response speeds on clock 1.

Figure 2 Mean response speeds on clock 2.


CLOCK 1
2.0
1.5
1.0
.5
SPEED (1 / LATENCY)
UNPLEASANT-PLEASANT
DISLIKE-LIKE
1
5
10
2 TRIAL BLOCKS


CLOCK 2
1.5
1.25
1.0
SPEED (1 / LATENCY)
UNPLEASANT - PLEASANT
DISLIKE - LIKE
1
5
10
2 TRIAL BLOCKS

APPENDIX A

PROSPECTUS

REINFORCEMENT PROPERTIES OF NEGATIVE AFFECT REDUCTION

The present study is concerned with the role of negative affect reduction as a process mediating the attitude similarity-attraction relationship in the reinforcement theory of interpersonal attraction. This study will consist of: (1) a brief overview of the development of the reinforcement-affect theory of interpersonal attraction, (2) a selective review of the literature relevant to the place of negative affect arousal in the theory, (3) a review of the literature bearing on negative affect reduction, and (4) a theoretical reinterpretation of the role of negative affect reduction. Finally, a hypothesis suggested by this reinterpretation will be proposed and a research proposal will be described.

The focus of this study will be directed at the process of negative affect reduction. More specifically, the study will examine the negative affect reduction occasioned by responding on the dependent variables frequently used in interpersonal attraction research to measure attraction and affect.

Interest in the similarity-attraction relationship can be

documented at various points of development. For example, folk wisdom such as "birds of a feather flock together" attests to the recognition of this relationship long before it became the subject of empirical investigation. Early empirical studies consisted of correlational investigations of similarity between husbands and wives (Newcomb & Svehla, 1937; Schiller, 1932; Schooley, 1936; Schuster & Elderton, 1906) or between friends (Newcomb, 1956, 1961; Richardson, 1940; Winslow, 1937).

Byrne (1961) designed an experimental study to explore the effect of attitude similarity-dissimilarity on attraction. Students filled out attitude scales, then, at a later time, received either similar or dissimilar attitude scales purportedly filled out by a stranger. Subsequent evaluations of the "stranger" showed that similar and dissimilar attitudes resulted in high and low attraction scores respectively. The basic methodology used in this study has been proliferated (Byrne & Griffitt, 1973) into the now well known attraction paradigm (Byrne, 1971).

The empirical attitude similarity-attraction relationship has been interpreted within a reinforcement theory framework (Byrne, 1971; Byrne & Clore, 1970). That is, attitude similarity and dissimilarity have been interpreted as special cases of rewards and punishers, and attraction toward another person is hypothesized to be a function of the relative number of rewards and punishments associated with that person.

Recently, increased emphasis has been placed on the role of positive and negative affect associated with attitude similarity and dissimilarity. The results of several studies (Bleda, in press; Singh, 1973) have shown the importance of the affective processes in the similarity-attraction relationship, and a reinforcement-affect model of attraction (Clore & Byrne, in press) has been proposed.

Negative Affect Arousal and Drive

Negative affect has been variously described as unpleasant emotion or feeling and discomfort (Griffitt, 1970), sadness and depression (Gouaux, 1971) and a drive state (Gouaux & Gouaux, 1971; Lombardo, Libkuman & Weiss, 1972).

Several dependent measures have been used to provide operational definitions of negative affect. Among these, negative affect has been defined as low scores on the semantic differential (Byrne & Clore, 1970) or change in scores on the semantic differential in a negative direction (Gouaux, 1971; Lamberth, Gouaux & Padd, 1973). Byrne and Clore (1970) obtained responses on six of the evaluative scales of Osgood's semantic differential (Osgood, Suci & Tannenbaum, 1957). The scales were comfortable-uncomfortable, bad-good, high-low, sad-happy, pleasant-unpleasant, negative-positive. Each scale was scored from 1 (most negative) to 7 (most positive) and the scores were summed. Thus, totals could range from 6 (most negative) to 42 (most positive) and had a midpoint of 24. Byrne and Clore (1970)

noted that the evaluative responses Ss made after receiving similar and dissimilar attitude statements fell on the positive and negative sides respectively of the mid score of 24.

Experiments using a pre- post-affect manipulation design Davis & Lamberth, in press; Gouaux, 1971; Lamberth, Gouaux & Padd, 1973), have shown however that Ss generally respond above the midpoint prior to the experimental affect manipulations. Thus, in a pre- post-test design, negative affect has been defined as significant change in a negative direction from pre- to post-affect manipulation scores.

Negative affect has been aroused by a variety of experimental manipulations. Independent variable manipulations have included dissimilar attitude statements purportedly checked by another student on an attitude survey (Byrne & Clore, 1967; Gouaux, 1972; Gouaux, Lamberth & Friedrich, 1972; Lamberth, Gouaux & Padd, 1973), dissimilar attitude statements projected on a screen and attributed to another student (Davis & Lamberth, in press), spoken disagreement attributed to another student in a conversation represented as a study of opinion change (Lombardo, Libkuman & Weiss, 1972; Lombardo, Weiss & Buchanan, 1972; Weiss, Lombardo, Warren & Kelley, 1971), a depressing movie (Gouaux, 1971) mood induction cards (Gouaux & Gouaux, 1971) and negative personal evaluations (Davis & Lamberth, in press; Lamberth, Gouaux & Padd, 1973).

Within the literature on interpersonal attraction, the re-

sults of a number of experiments have shown that disagreement is negative affect arousing. In one such experiment, Stapert and Clore (1969) tested several predictions derived from the hypothesis that disagreement produces a state of arousal. The predictions were that disagreement would (a) increase attraction to a subsequent agreeing stranger, and (b) decrease attraction to a subsequent disagreeing stranger. In a design that varied the number of disagreeing strangers (D) preceeding an agreeing stranger (A), the conditions were (1) AAAA, (2) DA, (3) DDA, (4) DDDA and (5) DDDSA. Condition 1 controlled for sequential effects while condition 5 tested for the possibility of attitude change by asking Ss to fill out an attitude survey again after the third disagreeing stranger. Ss evaluated each stranger on the interpersonal judgement scale before going on to the next stranger. The hypothesis that disagreement produces arousal was supported by confirmation of the first prediction. Disagreement did increase attraction to a subsequent agreeing stranger.

In an earlier study Worchel and Schuster (1966) tested a similar hypothesis. They hypothesized that attraction would be greater to an agreeing person following group disagreement than agreement. This hypothesis was based on the reinforcement theory idea that reinforcement effects are greater under conditions of high drive than under conditions of low drive. Ss were assigned to conditions (1) AAAA, (2) ADDD or (3) DDDA. The results supported the hypothesis. Attraction was found to be greater to an agreeing

person following group disagreement than following agreement.

Thus, both Stapert and Clore (1969) and Worchel and Schuster (1966) have shown that Ss are more attracted to agreeing strangers following prior exposure to disagreement. Interpreted within a learning theory - reinforcement framework, these results are consistent with the hypothesis that disagreement arouses a state of drive and that the higher drive level of the DA Ss over the AA Ss leads to greater attraction to the second agreeing subject.

Using a slightly different design, similar results have been found by several investigators (Aronson & Linder, 1965; Byrne, Lamberth, Palmer & London, 1969). Rather than presenting disagreement from one stranger and agreement from another, these investigators presented sequences of disagreement and agreement in which the same person began disagreeing with the subject, then at some point changed to agreeing with the subject. Again, the effects of agreement upon attraction were enhanced by prior disagreement.

Negative affect is assumed to mediate the attitude similarity-attraction relationship. Byrne and Clore (1970) interpreted affective states as implicit affective responses to unconditioned stimuli (e.g. attitude statements) which have reinforcement properties. These implicit affective responses can be either positive or negative, and are assumed to mediate the positive and negative evaluative responses involved in interpersonal attraction research. Thus, a series of positive stimuli (e.g. agreeing attitude statements)

elicit positive implicit affective responses and result in a positive evaluation or liking. A series of negative stimuli (e.g. disagreeing attitude statements) elicit negative implicit affective responses which in turn mediate a negative evaluation or dislike.

Correlational studies (Gouaux, 1971; Gouaux, Lamberth & Fredrich, 1972; Lamberth, Gouaux & Padd, 1973) have, in fact, shown a strong relationship between the Ss affective states and their subsequent evaluation or attraction scores.

While attraction to persons associated with reinforcement has been repeatedly investigated, the acquisition of disliking for persons association with punishment has been studied less frequently. However, in a recent study, Frakes (1971) hypothesized that significant dislike could be acquired for a neutral person associated with punishment. In the presence of an unknown test partner, Ss in the punishment condition were given feedback indicating poor performance on a bogus test of leadership skills. The results showed that the punishment manipulation aroused significant negative affect (semantic differential scores) and also caused significant dislike (pre- post- attraction scores) of the test partner who was merely associated with the punishment.

Stimuli that arouse negative affect have been used as punishers in instrumental discrimination learning tasks (Byrne, Young & Griffitt, 1966; Golightly & Byrne, 1964) as well as in simple instrumental

response tasks (Lombardo, Libkuman & Weiss, 1972; Lombardo, Weiss & Buchanan, 1972).

Disagreement can serve as a punisher in simple discrimination learning tasks. Golightly and Byrne (1964) hypothesized that similar and dissimilar attitude statements would function as rewards and punishers respectively in a simple two-choice discrimination learning task. They presented Ss similar attitude statements after correct choices and dissimilar attitude statements after incorrect choices. The results showed that similar and dissimilar attitude statements function like tradition reward and punishment to respectively increase and decrease response probability. These results were replicated by Byrne, Young and Griffitt (1966). Thus, with simple discrimination learning problems, disagreeing attitude statements can decrease the probability of a response like a traditional punishment.

Disagreement can also decrease the probability of a simple instrumental response upon which it is made contingent. Lombardo, Libkuman & Weiss (1972) designed an experiment to investigate the general drive properties of disagreement. The first half of the experiment envolved the arousal of drive by the presentation of disagreement on topics which had high interest value to the subject, or the reduction of drive arousal by the presentation of agreement on high interest topics. Disagreement or agreement was made contingent upon a simple switch throwing response.

The results showed that agreement increased the speed with which Ss threw the switch, while disagreement decreased the speed with which Ss threw the switch. Lombardo, Libkuman and Weiss concluded that agreement and disagreement not only have drive reducing and arousing properties but that they also function as reinforcers and punishers respectively.

A similar procedure was used by Lombardo, Weiss and Buchanan (1972) to investigate the reinforcing and attracting functions of yielding. Of particular interest here are the results in the disagreement condition. In two experiments disagreement functioned as a punisher in that it reduced the speed of the instrumental switch throwing response.

In both discrimination learning studies and simple instrumental response studies, the results have been consistent in showing that disagreement functions as punishment.

The studies described above provide substantial evidence that negative affect arousal can function as a punisher, and also for the assumption that negative affect arousal has many of the properties of a drive. Disagreement which can serve as a punisher (in depressing a contingent response) serves also as a drive in that it enhances the effects of reinforcement (agreement).

Several recent studies (Davis & Lamberth, in press; Lombardo, Libkuman & Weiss, 1972) have shown clearly that negative affect arousal also has energization properties similar to those of drive.

In both studies, negative affect was aroused in Ss by presenting them with disagreement. All Ss then learned a paired-associates list (Spence, Farber & McFann, 1956) which has been frequently used to index levels of drive arousal. Performance on this list showed that the disagreement-induced negative affect arousal facilitates the learning of simple tasks but impairs the learning of complex tasks in a manner analogous to that of drive.

If negative affect arousal is similar to drive and stimuli that arouse negative affect function as punishers, the notion is not surprising that negative affect can motivate avoidance and escape behavior. Following several other investigators (Exline & Winters, 1965; Wessman & Ricks, 1966), Gouaux (1971) proposed that increased social approach behavior is associated with elation (positive affect) while increased social avoidance behavior is associated with depression (negative affect). In a study to investigate this hypothesis, Gouaux and Gouaux (1971) used social or non-social reinforcers to reinforce Ss in whom elation, neutrality or depression had been induced. Depressed (negative affect) Ss were hypothesized to respond at a lower rate than elated (positive affect) Ss for social reinforcers but at about the same rate for non-social reinforcers.

The results partially supported this hypothesis. Thus, Gouaux and Gouaux (1971) proposed tentatively that social approach and avoidance motivation concomitant with positive and negative affective

states mediate the similarity-attraction relationship. Since negative affect arousal can function as a punisher or a drive and can perhaps motivate avoidance and escape behavior, it should be possible to show that responses which serve to reduce or dissipate high levels of negative affect arousal function as negative reinforcers. Let us now turn to an examination of this possibility.

Negative Affect Reduction and Reinforcement

A number of studies in interpersonal attraction (Byrne, Lamberth, Palmer, & London, 1969; Gouaux, 1972; Lamberth, Gouaux, & Padd, 1973) have shown that negative affect aroused by disagreement can be reduced by expressing the negative affect.

Negative affect reduction occasioned by a single act of evaluating on the Interpersonal Judgement Scale (IJS) was investigated by Lamberth et al. (1973). It was hypothesized that negative affect is aroused by negative attitudinal stimuli and reduced by evaluating the source of the negative stimuli. In three experiments, Ss filled out semantic differential scales (Osgood, Suci, & Tannenbaum, 1957) received negative stimuli (e.g. dissimilar attitudes or negative evaluations), then filled out a second semantic differential scale. Negative stimuli consistently induced negative affect according to the semantic differential scales. Negative affect was reduced, however, for half of the Ss who evaluated the source of the negative stimuli on the IJS before filling out the post-test semantic differential scale. Lamberth et al. (1973) concluded that negative affect was elicited by the negative stimuli

and that the IJS was effective in reducing a portion of this negative affect.

In a study by Gouaux (1972), repeated evaluations were hypothesized to neutralize negative interpersonal affect and increase attraction to a disagreeing stranger. Three groups of Ss filled out semantic differential scales, received dissimilar attitudes attributed to a stranger, then filled out semantic differential scales again. Group one Ss then evaluated the stranger on the IJS and completed a third semantic differential. Group two Ss filled out a bland information form which took 10-15 minutes, a third set of semantic differentials, an IJS on the stranger and finally a fourth semantic differential. Group three Ss evaluated the stranger on a 30-item adjective check list, completed a third semantic differential, evaluated the stranger again on the IJS and finally completed a fourth semantic differential.

Results of the semantic differential scale scores indicated that negative affect was induced in all three groups by the dissimilar attitudes. For group one Ss, negative affect shown on the second semantic differential was reduced by evaluating the stranger on the IJS according to the third semantic differential scores. For group two Ss negative affect was not significantly reduced by the bland information form but was reduced by evaluating the stranger on the IJS. For Ss in group three, evaluating the stranger on the 30-item adjective check list neutralized completely the negative affect

aroused by the dissimilar attitude statements. The effects of the interpersonal judgement scale on the fourth semantic differential appeared minimal.

Finally, the IJS scores of the three groups were analyzed. These attraction scores showed significant group differences with group three more positive than group two ($p < .01$) and also more positive than group one ($p < .001$). Thus, it was shown that the group which evaluated the disagreeing stranger twice made a significantly more positive final evaluation than either of the two groups which evaluated the disagreeing stranger only once.

In a series of experiments, Byrne, Lamberth, Palmer and London (1969) presented Ss a sequence of 24 negative affect inducing stimuli (dissimilar attitude statements) interspersed with 24 opportunities to express the negative affect to a second set of Ss they presented the same sequence of negative stimuli interspersed with 6 opportunities to express the negative affect, while to a third set of Ss they presented only the negative affect inducing stimuli. Subsequently all three sets of Ss were asked to evaluate the stranger holding the dissimilar attitudes on the IJS. Results of the attraction responses shown in Table 1 and Table 3 (Byrne et al. 1969, p. 73, 77) indicate that Ss in set one evaluated the stranger most positively. Ss in set two evaluated the stranger less positively, and Ss in set three evaluated the stranger least positively. These results suggest that negative affect was dissipated by the inter-

polated evaluative responses and that more evaluative responses resulted in more dissipation of negative affect. Moreover, the results of Experiment III in the series showed that negative affect can even be dissipated by implicit evaluative responses when Ss are instructed to make these responses covertly after each presentation of negative stimuli.

The results of all these studies are consistent with the conclusions of Stapert and Clore (1969) who suggested that negative attraction (dislike) toward another results from his association with drive arousal while positive attraction (liking) results from association with drive reduction.

Increased positive attraction scores occasioned by the act of evaluating may suggest more than mere negative affect reduction. The positive attraction scores can also be interpreted as preliminary support for the notion that the act of evaluating is reinforcing.

Weiss, Lombardo, Warren and Kelley (1971) have provided powerful support for the hypothesis that the opportunity to speak in reply to a disagreeing statement functions as a reinforcer. In four separate experiments, the opportunity to reply to disagreement was made contingent upon an instrumental response. Their results showed that the act of replying to disagreement, rather than being merely a dependent variable, plays a more fundamental role as a reinforcer which influences the subject's behavior. From this data and the data suggesting that negative affect reduction occasioned

by evaluating results in more positive attraction scores, the notion was derived that the opportunity to evaluate has reinforcement properties.

Proposal

Interpersonal attraction theory (Byrne, 1971; Byrne & Clore, 1970; Clore & Byrne, in press) has suggested a close relationship between affective and evaluative responses and their reinforcing properties, a relationship that remains little understood. Typically the evaluative responses have been on the IJS and designated as the dependent variable measuring attraction. The affective responses have usually been measured on the semantic differential and assumed to mediate attraction. The stimuli that determine attraction (attitudinal and evaluative statements) have reinforcing properties and also elicit affective responses. The chain seems complete: stimuli with reinforcement properties elicit implicit affective responses which determine evaluative responses. However, the situation is more complex than this. As Byrne (1971, p. 270) has pointed out, the responses on the semantic differential are also evaluative responses in that they are an evaluation by the S of his own affective responses to information, while the IJS is an evaluation of the source of information. The empirical evidence clearly shows that evaluating on the IJS is affect reducing and that evaluating on the adjective check list is affect reducing (Gouaux, 1972). Is evaluating on the semantic differential also affect reducing? If so, it

reduces the very thing it is intended to measure. Moreover, it may function as a reinforcer, thereby further influencing behavior.

The present study was designed to investigate the hypothesis that the opportunity to evaluate on the dependent variables of affect and interpersonal attraction is specifically a reinforcer when it follows the receipt of disagreement induced negative affect.

Method

The Ss will be 32 introductory psychology students at the University of Oklahoma who volunteer to participate in the experiment as part of a course requirement. All Ss will have filled out a 20 item Survey of Attitudes in class approximately six weeks earlier in the semester. The Ss will be divided into two groups, an unpleasant-pleasant (U-P) group and a dislike-like (D-L) group.

The apparatus will be a gray wooden panel, 30 X 30 inches, which will separate the S from the experimenter during the conditioning trials. The S will be seated facing the panel which will include a large lever in the center that can be depressed 15 inches, a slit through which cards will be received in the bottom right quadrant, a green "ready" light in the top right quadrant, and a semicircle of seven buttons over an amber light in the top left quadrant. The center button will be labeled "NEUTRAL". In the U-P condition, the button on the extreme left will be labeled "UNPLEASANT" and the button on the extreme right will be labeled "PLEASANT". In the D-L condition, the button on the extreme left will be labeled "DISLIKE" and the button on the extreme right will be labeled "LIKE". The experimenter will be seated behind the panel. The back of the panel will contain a small tray and a slit through which cards will be passed to the S, a clock which will record the time from the onset of the green "ready" light to the beginning of

the lever press, a second clock which will record the time from the top to the bottom of the lever press, and seven lights which will indicate which button the S pushes.

The cards which Ss will receive will contain homogeneous dissimilar attitude statements. That is, they will be statements about a single attitudinal topic and they will be consistently in disagreement with the attitude expressed by the S on his Survey of Attitudes. Each S will receive attitude statements involving only a single topic on which he has checked an extreme alternative. The attitudinal topic will always be chosen from among six important topics (Byrne, 1971).

Ss will be run individually. When an S arrives for the experiment, he will be seated in front of the gray panel and told that the experiment concerns the way in which people respond to social stimuli. Each S will be told that he will receive the attitudes of another student typed on cards and will be asked to read aloud the typed statements. He will also be told that after reading each attitude statement, he will have the opportunity to record his own feelings (in the U-P condition) or to record his evaluation of the stranger (in the D-L condition) by pushing one of the seven buttons. However, in order to have the opportunity to record his response on the buttons, he will be told that he must first pull the lever. Moreover, each S will be told that he may stop pulling the lever whenever he wishes. Following these instructions, each S

will be asked to fill out a set of six semantic differential scales indicating his personal feelings at that moment. After an S completes the semantic differential, conditioning trials will begin. The S will receive an attitude statement and read it aloud. When the green "ready" light comes on, the S will pull the lever in order to obtain the opportunity to respond on the buttons. At the same time the lever reaches the bottom of the channel, the amber light in the button semicircle will illuminate signalling the S that he may push one of the seven buttons to record his response. In the U-P condition, Ss will be instructed to push the button that best describes their feelings at that very moment; in the D-L condition, Ss will be instructed to push the button that best describes their evaluation of the student whose attitude statements they have just read. When one of the seven buttons is pushed, the light in the semicircle will go out. Approximately four seconds later, the next trial will begin with the next attitude statement card being received by the S. This procedure will be repeated for twenty trials with a different dissimilar attitude statement card on each trial.

The experimenter will record times on clocks one and two as well as the button that is pushed on each trial. Following trial twenty, Ss will be asked to fill out a second semantic differential the way they feel at that moment and then to fill out an IJS. Ss will be thanked and debriefed.

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APPENDIX B

INSTRUCTIONS

INSTRUCTIONS (Unpleasant-Pleasant)

We are interested in the way in which people respond to social stimuli. You will receive attitude information typed by another student on cards. We asked this student to type a number of short statements on separate cards expressing his (her) attitudes about a specific subject. Therefore, the information you will receive represents the attitudes of this student. The cards will be given to you one at a time through this slit (point). Each time you get a card, please read the attitude statement on it aloud, then put the card in this box.

After reading a statement, you will have the opportunity to let us know how you feel by the use of these buttons. You will note that this button is labeled UNPLEASANT; the button in the middle is labeled NEUTRAL, and the button at the other extreme is labeled PLEASANT. If you feel very pleasant after reading the information, you would push this button. If you feel very unpleasant, you would push this button. Of course, you may use the other buttons to indicate gradations between pleasant and unpleasant. However, in order to have the opportunity to indicate your feelings on the buttons, you must first pull this lever.

After you finish reading an attitude statement, you will notice that this green light will come on. As soon as it comes on you will know that you may pull the lever. Remember, we are interested in how you respond to certain information. In order to have the oppor-

tunity to respond, you must pull this lever. Of course, you may stop pulling the lever whenever you wish. Do you have any questions?

INSTRUCTIONS (Dislike-Like)

We are interested in the way in which people respond to social stimuli. You will receive attitude information typed by another student on cards. We asked this student to type a number of short statements on separate cards expressing his (her) attitudes about a specific subject. Therefore, the information you will receive represents the attitudes of this student. The cards will be given to you one at a time through this slit (point). Each time you get a card, please read the attitude statement on it aloud, then put the card in this box.

After reading a statement, you will have the opportunity to let us know your evaluation of the student by the use of these buttons. You will note that this button is labeled DISLIKE; the button in the middle is labeled NEUTRAL, and the button at the other extreme is labeled LIKE. If you feel you would very much like the student after reading the information, you would push this button. If you feel you would very much dislike the student, you would push this button. Of course, you may use the other buttons to indicate gradations between like and dislike. However, in order to have the opportunity to indicate your evaluations on the buttons, you must first pull this lever.

After you finish reading an attitude statement, you will notice that this green light will come on. As soon as it comes on you will know that you may pull the lever. Remember, we are interested in how you respond to certain information. In order to have

the opportunity to respond, you must pull this lever. Of course, you may stop pulling the lever whenever you wish. Do you have any questions?

APPENDIX C

SUMMARY STATISTICS

MEAN RESPONSE SPEEDS (CLOCK 1) FOR

CONDITIONING TRIALS

Trial	Unpleasant-Pleasant	Dislike-Like
1	.607	.512
2	.904	.802
3	.974	.951
4	1.339	1.013
5	1.074	1.064
6	1.318	1.186
7	1.256	1.048
8	1.061	1.104
9	1.233	1.093
10	1.275	1.131
11	1.422	1.211
12	1.481	1.608
13	1.697	1.044
14	1.356	1.304
15	1.531	1.405
16	1.412	1.349
17	1.741	1.239
18	1.484	1.514
19	1.684	2.066
20	1.846	1.524

MEAN RESPONSE SPEEDS (CLOCK 2) FOR

CONDITIONING TRIALS

Trial	Unpleasant-Pleasant	Dislike-Like
1	1.190	1.243
2	1.109	1.201
3	1.264	1.053
4	1.248	1.230
5	1.299	1.284
6	1.318	1.319
7	1.248	1.277
8	1.338	1.184
9	1.348	1.261
10	1.338	1.331
11	1.404	1.333
12	1.400	1.361
13	1.460	1.384
14	1.474	1.321
15	1.415	1.353
16	1.518	1.403
17	1.429	1.343
18	1.396	1.225
19	1.579	1.352
20	1.407	1.444

MEAN SCORES RECORDED ON THE

EVALUATION BUTTONS

Trial	Unpleasant-Pleasant	Dislike-Like
1	2.500	2.250
2	2.688	2.438
3	2.063	2.563
4	2.125	2.563
5	2.375	1.688
6	2.250	1.813
7	3.938	2.500
8	2.625	1.938
9	2.938	2.688
10	2.188	2.313
11	1.183	1.500
12	2.000	2.813
13	1.875	2.438
14	2.250	2.813
15	3.063	3.000
16	1.688	1.438
17	2.375	1.688
18	2.563	2.188
19	1.563	1.934
20	2.500	2.188

MEAN AFFECT SCORES ON THE SEMANTIC

DIFFERENTIAL SCALES

Scale	Unpleasant-Pleasant	Dislike-Like
Pre-conditioning	33.000	32.625
Post-conditioning	27.313	33.750

MEAN ATTRACTION SCORES ON THE INTER-

PERSONAL JUDGEMENT SCALE

Unpleasant-Pleasant	Dislike-Like
8.188	6.750

APPENDIX D

STATISTICAL ANALYSES

GROUPS X TRIALS ANALYSIS OF VARIANCE

ON CLOCK 1 RESPONSE SPEEDS

Source	SS	df	MS	F
Between	151.280	31	4.880	
A (Groups)	2.581	1	2.581	.521
Error	148.710	30	4.957	
Within	379.392	608	.624	
B (Trials)	53.200	19	2.800	5.002 ***
A X B	7.372	19	.388	.693
Error	319.200	570	.560	

*** $p < .0001$

GROUPS X TRIALS ANALYSIS OF VARIANCE

ON CLOCK 2 RESPONSE SPEEDS

Source	SS	df	MS	F
Between	66.836	31	2.156	
A (Groups)	.661	1	.661	.300
Error	66.180	30	2.206	
Within	48.032	608	.079	
B (Trials)	5.149	19	.271	3.722 ***
A X B	1.178	19	.062	.639
Error	41.610	570	.073	

*** $p < .0001$

GROUPS X TRIALS ANALYSIS OF VARIANCE

ON EVALUATION BUTTON SCORES

Source	SS	df	MS	F
Between	401.202	31	12.942	
A (Groups)	2.756	1	2.756	.207
Error	398.430	30	13.281	
Within	1462.240	608	2.405	
B (Trials)	105.317	19	5.543	2.412 **
A X B	46.493	19	2.447	1.065
Error	1310.430	570	2.299	

** $p < .001$

GROUPS X PRE- POST- ANALYSIS OF

VARIANCE ON SEMANTIC DIFFERENTIALS

Source	SS	df	MS	F
Between	2428.602	31	78.342	
A (Groups)	147.016	1	147.016	1.933
Error	2281.59	30	76.053	
Within	753.504	32	23.547	
B (Pre- Post-)	83.266	1	83.266	5.155 *
A X B	185.641	1	185.641	11.493 **
Error	484.59	30	16.153	

* $p < .05$
** $p < .005$

DUNCAN'S MULTIPLE RANGE TEST

ON SEMANTIC DIFFERENTIAL

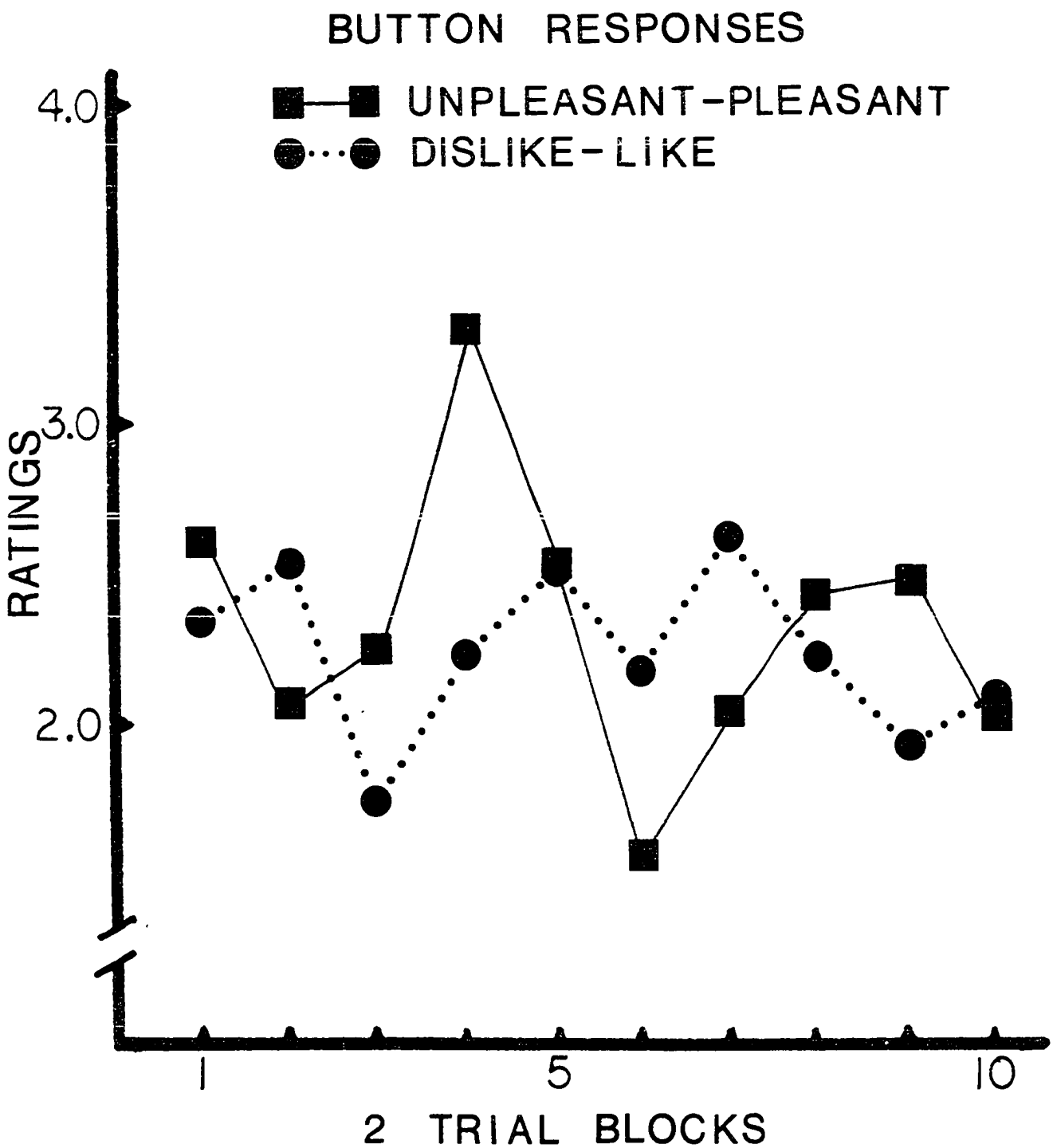
SCORE MEANS

	X2	X3	X1	X4
X2 = 27.31	---	5.31 *	5.69 *	6.44 *
X3 = 32.62		---	0.38	1.13
X1 = 33.00			---	0.75
X4 = 33.75				---

* $p < .01$

APPENDIX E

GRAPHS


BUTTON RESPONSES
UNPLEASANT-PLEASANT
DISLIKE-LIKE
4.0
3.0
2.0
RATINGS
1
5
10
2 TRIAL BLOCKS

APPENDIX F

ATTITUDINAL STATEMENTS

HOMOGENEOUS DISSIMILAR

ATTITUDINAL STATEMENTS

God

Belief in God (check one)

____ I strongly believe there is a God.
____ I believe there is a God.
____ I feel that perhaps there is a God.

The following statements were selected to be in disagreement with the attitudinal statements above.

1. There is no God.
2. God does not exist.
3. God is a myth.
4. God never existed.
5. People who think there is a God are deluding themselves.
6. People should be more skeptical about the existence of God.
7. The concept of God is an unrealistic one.
8. It is unreasonable to believe in the existence of God.
9. The concept of God is a figment of man's imagination.
10. People are not being rational when they believe in God.
11. Belief in God is wishful thinking.
12. People who believe in the existence of God are wrong.
13. God's existence should be questioned.
14. There is no good reason to believe in God.
15. It is wise to be skeptical about the existence of God.
16. People who believe in God are deceiving themselves.
17. It is self-deluding to believe in God.
18. It is not sensible to believe in God.
19. God is mythical.
20. People who believe in God are believing in a fable.

Belief in God (check one)

____ I strongly believe there is no God.
____ I believe that there is no God.
____ I feel that perhaps there is no God.

The following statements were selected to be in disagreement with the attitudinal statements above.

1. God is good.
2. There is a God.

3. God rules the world.
4. The concept of God is a realistic one.
5. God exists.
6. It seems reasonable to believe in God.
7. God created the universe.
8. There is definitely a God.
9. God is great.
10. Some people are too skeptical about God.
11. More people should believe in God.
12. People who do not believe in God are wrong.
13. The world would be a better place if more people believed in God.
14. More people ought to believe in the existence of God.
15. Our country would be better off if more people believed in God.
16. People ought not to question the existence of God.
17. God created men.
18. God loves the world.
19. God controls man's destiny.
20. God made heaven and earth.

Birth Control

Birth Control (check one)

____ I am very much in favor of most birth control techniques.
____ I am in favor of most birth control techniques.
____ I am mildly in favor of most birth control techniques.

The following statements were selected to be in disagreement with the attitudinal statements above.

1. Only harm can come from using birth control techniques.
2. It is unfortunate that birth control is being used more and more.
3. It's unfortunate that birth control techniques are being introduced to overpopulated areas.
4. Many birth control techniques are not successful.
5. Birth control information should not be readily available.
6. It's a good thing that many doctors will not support birth control techniques.
7. Some birth control techniques can be harmful.
8. Some women have died from using birth control techniques.
9. It is a shame some student health centers prescribe birth control pills.
10. Birth control is a bad practice.
11. Families should not use birth control techniques.
12. We do not have the right to deny life to an unborn child.

13. Families should not have access to birth control information.
14. We should stop trying to force birth control on other countries.
15. The danger of overpopulation is not as great as the problems of birth control.
16. The problems of overpopulation have been exaggerated and do not warrant the use of birth control.
17. More use of birth control techniques would be disastrous.
18. Birth control information should not be so readily available.
19. Many birth control techniques are unsafe.
20. Many women have been harmed by using birth control techniques.

Birth Control (check one)

____ I am very much opposed to most birth control techniques.
____ I am opposed to most birth control techniques.
____ I am mildly opposed to most birth control techniques.

The following statements were selected to be in disagreement with the attitudinal statements above.

1. Most birth control techniques are good things.
2. It is good that birth control is being used more and more.
3. It's a good thing that birth control techniques are being introduced to overpopulated areas.
4. Most birth control techniques are very successful.
5. We should make birth control information more readily available.
6. It's a good thing that many doctors support the use of most birth control techniques.
7. Birth control techniques can be very helpful in family planning.
8. It's good that science has made such advances in the area of birth control.
9. Birth control information should be readily available to all families.
10. Birth control is a good practice.
11. Families should not hesitate to use birth control techniques when they want to.
12. People should take advantage of birth control techniques for family planning.
13. All families should have access to birth control information.
14. We should make birth control techniques more readily available to families in overpopulated areas.
15. Birth control is necessary to control overpopulation.

16. Birth control is a valuable tool in the fight against overpopulation.
17. More use of birth control techniques is essential if we are to keep the world from becomming overpopulated.
18. Birth control information should be made available to all who want it.
19. Birth control information is valuable.
20. Birth control information has helped to curb the population of the world.

Way of Life

American Way of Life (check one)

____ I strongly believe that the American way of life is the best.
____ I believe that the American way of life is the best.
____ I feel that perhaps the American way of life is the best.

The following statements were selected to be in disagreement with the attitudinal statements above.

1. The American way of life is not the best.
2. There are many things wrong with the American way of life.
3. Many changes need to be made in the American way of life.
4. Here in America we do not have the best possible way of life.
5. More emphasis should be put on what is wrong with the American way of life.
6. The disadvantages of the American way of life need to be emphasized more.
7. People are correct to think they can find a better way of life than here in America.
8. There are other ways of life which have more to offer than the American way.
9. More people should speak out about what is wrong in America.
10. Improvement needs to be made in the American way of life.
11. Too many people overlook the things which are wrong with the American way of life.
12. Many changes need to be made in the American way of life.
13. Life in America could be better.
14. The American way of life needs to be improved.
15. Life in America has many disadvantages.
16. People are not treated as well as they should be here in America.
17. Life in America needs to be improved.
18. Some Americans are mistreated.

19. Life in America presents problems.
20. People who believe that the American way of life is best are wrong.

American Way of Life (check one)

____ I strongly believe that the American way of life is not the best.
____ I believe that the American way of life is not the best.
____ I feel that perhaps the American way of life is not the best.

The following statements were selected to be in disagreement with the attitudinal statements above.

1. The American way of life is the best.
2. People have no reason to be dissatisfied with the American way of life when they consider the alternatives.
3. People couldn't find a better way of life than here in America.
4. The American people should strive to maintain their way of life.
5. People are wrong to think they can find a better way of life than here in America.
6. No other way of life has as much to offer as the American way of life.
7. More people should speak out in support of the American way of life.
8. It's too bad that some Americans are embarrassed to display any patriotism.
9. Here in America we have the best possible way of life.
10. These days there is far too much emphasis on things that are wrong with the American way of life.
11. The advantages of the American way of life far outweigh the disadvantages.
12. There are many things to be thankful for here in America.
13. It's a shame that so many people are trying to destroy the American way of life.
14. People should not emphasize the things that are wrong with the American way of life.
15. Life in America has many advantages.
16. People are treated better in America than anywhere else.
17. Life in America has some problems but there are no better alternatives.
18. Life in America presents less problems than life elsewhere.
19. People who criticize the American way of life are wrong.
20. No other way of life is as pleasant as the American way.

Premarital Sex

Premarital Sex Relations (check one)

____ In general, I am very much in favor of premarital sex relations.
____ In general, I am in favor of premarital sex relations.
____ In general, I am mildly in favor of premarital sex relations.

The following statements were selected to be in disagreement with the attitudinal statements above.

1. People are wrong to become involved in premarital sex relations.
2. It's too bad that some people feel pressured into having premarital sex relations.
3. It is not good to engage in premarital sex relations.
4. Premarital sex relations can cause a lot of problems.
5. It's a shame that so many people seem to condone premarital sex relations today.
6. People should not have premarital sex relations.
7. There are few good reasons for engaging in premarital sex relations.
8. It's not a good idea to engage in premarital sex relations.
9. Premarital sex relations should not occur.
10. It's not very wise to engage in premarital sex relations.
11. Premarital sex relations are harmful to people.
12. There are many good reasons for not engaging in premarital sex relations.
13. Mature people do not engage in premarital sex relations.
14. Only trouble can result from premarital sex relations.
15. Premarital sex relations have ruined many marriages.
16. People who are pressured into premarital sex relations are immature.
17. Premarital sex relations are a bad thing.
18. People who engage in premarital sex relations make poor parents.
19. People are unhappier in societies which condone premarital sex relations.
20. Society should prohibit premarital sex relations.

Premarital Sex Relations (check one)

____ In general, I am very much opposed to premarital sex relations.

____ In general, I am opposed to premarital sex relations.
____ In general, I am mildly opposed to premarital sex relations.

The following statements were selected to be in disagreement with the attitudinal statements above.

1. It is fine for people to become involved in premarital sex relations.
2. There is nothing wrong in engaging in premarital sex relations.
3. It is fine to condone premarital sex relations.
4. Premarital sex relations do not cause problems.
5. People are wrong to condemn premarital sex relations.
6. If people wish to engage in premarital sex relations, no one should object.
7. Everyone should engage in premarital sex relations.
8. It is no one else's business if people wish to engage in premarital sex relations.
9. There are many good reasons for engaging in premarital sex relations.
10. It's a good idea to engage in premarital sex relations.
11. Premarital sex relations should occur.
12. Premarital sex relations are helpful to people.
13. It is very wise to engage in premarital sex relations.
14. Premarital sex relations make people more mature.
15. People who engage in premarital sexual relations have happier marriages.
16. More people should engage in premarital sex relations.
17. Premarital sex relations are a good thing.
18. People who engage in premarital sex relations make better parents.
19. People are happier in societies where premarital sex relations are encouraged.
20. Society should encourage premarital sex relations.

War

War (check one)

____ I strongly feel that war is sometimes necessary to solve world problems.
____ I feel that war is sometimes necessary to solve world problems.
____ I feel that perhaps war is sometimes necessary to solve world problems.

The following statements were selected to be in disagreement with the attitudinal statements above.

1. War is never necessary to solve world problems.
2. World problems can be solved without war.
3. World problems can be solved peacefully.
4. Peaceful solutions to world problems should and can be found.
5. World problems have never been solved by war.
6. War only creates problems, it doesn't solve them.
7. People should never have to resort to war to solve problems.
8. We should devote more energy to solving world problems peacefully than to preparing for war.
9. People can solve problems without war.
10. There are better ways to solve world problems than by war.
11. We can't excuse war as being necessary to solve world problems.
12. War is unnecessary and men should strive for peace.
13. There is no good reason men have to resort to war.
14. War is not the answer to world problems.
15. Mankind can find better ways of solving problems than war.
16. There are peaceful solutions to all world problems.
17. World problems can be solved in peace.
18. We must find peaceful ways of solving world problems.
19. Wars have created many more problems than they have solved.
20. The problems of the world are best solved peacefully.

War (check one)

____ I strongly feel that war is never necessary to solve world problems.
____ I feel that war is never necessary to solve world problems.
____ I feel that perhaps war is never necessary to solve world problems.

The following statements were selected to be in disagreement with the attitudinal statements above.

1. War is sometimes necessary to solve world problems.
2. Some world problems cannot be solved without war.
3. Some problems of this world can be solved by war.
4. Peaceful solutions to world problems cannot always be found.
5. World problems have been solved by war.
6. War solves more problems than it creates.
7. People sometimes have to resort to war to solve problems.
8. We must prepare for war if some of the world's problems are going to be solved.
9. Unfortunately, people cannot solve problems without war.

10. War is sometimes the only way to solve world problems.
11. War is necessary to solve some world problems.
12. Men should strive for peace, but war is sometimes necessary.
13. Sometimes the reasons for war are compelling.
14. War is sometimes the answer to world problems.
15. Sometimes mankind cannot find better ways of solving problems than by war.
16. There are not always peaceful solutions for world problems.
17. Some world problems cannot be solved in peace.
18. Wars have solved more problems than they have created.
19. The problems of the world sometimes cannot be solved peacefully.
20. We must strive for peace, but realize that sometimes war is necessary.

Education

College Education (check one)

____ I strongly believe that it is very important for a person to have a college education in order to be successful.
____ I believe that it is very important for a person to have a college education in order to be successful.
____ I believe that perhaps it is very important for a person to have a college education in order to be successful.

The following statements were selected to be in disagreement with the attitudinal statements above.

1. A college education is not an asset.
2. Many people who do not have a college education are successful.
3. A college education is not necessary for success.
4. A college education is superfluous to success.
5. Many people who drop out of school and never return are successful.
6. It is wrong to assume that a college education is necessary for success.
7. It is not important to have a college education.
8. A college education is not valuable.
9. For most people, a college education is not an important element in success.
10. The value of a college education is overemphasized in this country.
11. Too many people think a college education is important.
12. Too many people try to get a college education.
13. It's too bad that so many people think a college education is necessary for success.

14. The things which are necessary for success are not learned in college.
15. The value of a college education is overrated in this country.
16. The things you learn in college are a waste of time.
17. Getting a college education is a waste of time.
18. A college education tends to mix people up.
19. People tend to lose their important values when they go to college.
20. A college education is not worth what it costs.

College Education (check one)

____ I strongly believe it is not very important for a person to have a college education in order to be successful.
____ I believe it is not very important for a person to have a college education in order to be successful.
____ I believe that perhaps it is not very important for a person to have a college education in order to be successful.

The following statements were selected to be in disagreement with the attitudinal statements above.

1. A college education is an asset.
2. If you want to be successful, you should get a college education.
3. People should be encouraged to get a college education if they want to be successful.
4. A college education is important for success.
5. A person can't expect to be very successful without a college education.
6. People who drop out of school and never return are not likely to be very successful.
7. Most people who are really successful today have college educations.
8. It's important for a person to have a college education.
9. A college education is valuable.
10. For most people, a college education is an important element in success.
11. More people should get a college education.
12. A college education is valuable.
13. You learn many important things in college.
14. The things which are necessary for success are learned in college.
15. The value of a college education is underrated in this country.
16. Getting a college education is an excellent investment in future success.

17. A college education makes people more mature.
18. People learn important values in college.
19. A college education is worth far more than it costs.
20. A college education is almost a necessity for success in today's world.