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The effects of effectance arousal, patterning of information, and attitude similarity upon the intensity of interpersonal attraction responses

Richard Clark Sherman

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THE EFFECTS OF EFFECTANCE AROUSAL, PATTERNING OF INFORMATION, AND ATTITUDE SIMILARITY UPON THE INTENSITY OF INTERPERSONAL ATTRACTION RESPONSES

by

Richard Clark Sherman

A Dissertation Submitted to the Graduate Faculty in Partial Fulfillment of The Requirements for the Degree of DOCTOR OF PHILOSOPHY

Major Subject: Psychology

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Dean of Graduate College

Iowa State University
Ames, Iowa
1969
# TABLE OF CONTENTS

<table>
<thead>
<tr>
<th>Section</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>I. QUOTATION</td>
<td>iv</td>
</tr>
<tr>
<td>II. INTRODUCTION</td>
<td>1</td>
</tr>
<tr>
<td>A. Interpersonal Attraction: Theory</td>
<td>1</td>
</tr>
<tr>
<td>1. Reward and drive</td>
<td>3</td>
</tr>
<tr>
<td>2. Impression formation and drive level</td>
<td>6</td>
</tr>
<tr>
<td>B. Interpersonal Attraction: Research</td>
<td>9</td>
</tr>
<tr>
<td>1. Patterning of information</td>
<td>11</td>
</tr>
<tr>
<td>2. Drive level</td>
<td>14</td>
</tr>
<tr>
<td>3. Drive level and patterning of information</td>
<td>15</td>
</tr>
<tr>
<td>C. Purpose</td>
<td>19</td>
</tr>
<tr>
<td>III. METHOD</td>
<td>23</td>
</tr>
<tr>
<td>A. Subjects</td>
<td>23</td>
</tr>
<tr>
<td>B. Design</td>
<td>23</td>
</tr>
<tr>
<td>C. Instrumentation</td>
<td>24</td>
</tr>
<tr>
<td>1. Survey of Attitudes</td>
<td>24</td>
</tr>
<tr>
<td>2. Interpersonal Judgment Scale</td>
<td>26</td>
</tr>
<tr>
<td>3. Effectance Arousal Scale</td>
<td>27</td>
</tr>
<tr>
<td>4. Drive stimuli</td>
<td>28</td>
</tr>
<tr>
<td>5. Manipulation of similarity and patterning</td>
<td>32</td>
</tr>
<tr>
<td>D. Procedure</td>
<td>35</td>
</tr>
<tr>
<td>1. Session I</td>
<td>35</td>
</tr>
<tr>
<td>2. Session II</td>
<td>36</td>
</tr>
<tr>
<td>IV. RESULTS</td>
<td>38</td>
</tr>
<tr>
<td>A. Check on Manipulations</td>
<td>38</td>
</tr>
<tr>
<td>1. Effectance arousal</td>
<td>38</td>
</tr>
<tr>
<td>2. Discrepancy</td>
<td>39</td>
</tr>
</tbody>
</table>
IV. RESULTS (continued)

B. Tests of Hypotheses

1. Hypothesis 1: Subjects will be more intense in their attraction responses to similar and dissimilar strangers than to moderately similar strangers.

2. Hypothesis 2: Subjects in the High-Patterning condition will be more intense in their attraction responses to highly similar and dissimilar strangers as compared to moderately similar strangers than will be subjects in the Low-Patterning condition.

3. Hypothesis 3: Subjects in the Low-Patterning condition will be less intense in their over-all attraction response than subjects in the High-Patterning condition.

4. Hypothesis 4: Drive, degree of patterning, and similarity will interact such that as drive increases, subjects in the High-Patterning condition will be more intense in their responses to highly similar and dissimilar strangers as compared to moderately similar strangers than will subjects in the Low-Patterning condition.

C. Post-hoc Analyses

V. DISCUSSION

A. Intensity as a Function of Similarity

B. Intensity as a Function of Patterning and Similarity

C. Intensity as a Function of Drive Level, Patterning, and Similarity

D. Conclusions

VI. LITERATURE CITED

VII. ACKNOWLEDGMENTS
<table>
<thead>
<tr>
<th>Appendix</th>
<th>Description</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>VIII.</td>
<td>APPENDIX A  MEAN IMPORTANCE RATINGS OF FIFTY-SIX TOPICS</td>
<td>69</td>
</tr>
<tr>
<td>IX.</td>
<td>APPENDIX B  SURVEY OF ATTITUDES QUESTIONNAIRE</td>
<td>72</td>
</tr>
<tr>
<td>X.</td>
<td>APPENDIX C  INTERPERSONAL JUDGMENT SCALE</td>
<td>77</td>
</tr>
<tr>
<td>XI.</td>
<td>APPENDIX D  REACTION SCALE</td>
<td>80</td>
</tr>
<tr>
<td>XII.</td>
<td>APPENDIX E  COMPUTER PROGRAM FOR PRODUCING &quot;STRANGERS&quot;</td>
<td>83</td>
</tr>
</tbody>
</table>
"How can you live like this, Father Arsenios? How do you stand the loneliness?" Father Yanaros asked one day as he watched the sea from among the orange trees and felt the longing to leave, "Have you lived in solitude many years?"

"I've been glued to this cell since I was twenty, Father Yanaros," he replied, "like the silkworm in its cocoon. This, "he said and pointed to his cell, "is my cocoon."

"And is it large enough to hold you?"

"Yes, it is, because it has a small window, and I can see the sky."

(Kazantzakis, 1964, p. 51)
II. INTRODUCTION

A. Interpersonal Attraction: Theory

In his 1956 Presidential Address to the American Psychological Association Theodore M. Newcomb stated:

"... there exists no very adequate theory of interpersonal attraction. It has often seemed to me that even we psychologists, who like to pride ourselves in recognizing that nothing occurs apart from its necessary and sufficient conditions, have come very close to treating the phenomena of personal attraction as an exception to the general rule. It is almost as if we, like our lay contemporaries, assumed that in this special area the psychological wind bloweth where it listeth, and that the matter is altogether too ineffable, and almost passeth even psychological understanding (1956, p. 575)."

It is fair to say that some progress has been made during the past 13 years in achieving an adequate theory of interpersonal attraction, although there is still a great deal which "passeth psychological understanding." Theories of attraction have become numerous, but they remain narrow and unrelated. Lack of specific definition and delineation of variables has hindered the development of an adequate methodology with which to test and integrate these theories. Yet, in spite of these shortcomings, there has accumulated much research information about the complexity and range of possibly important factors which an adequate theory of
attraction must eventually consider. Further, examination of the various attempts at theorization in this area reveals certain concepts and assumptions which appear necessary for building an adequate theory.

An initial note on the current state of attraction theory concerns the elementary problem of the definition of "attraction." Few theorists have attempted a rigorous definition, and in fact most offer none at all. It might be inferred from the methods commonly used to measure attraction, such as sociometric choice, positive or negative evaluations of the "target" person's characteristics, and overt expressions of liking, that most researchers and theorists have included interpersonal attraction within the broader concept of "attitude." Newcomb states this type of definition quite clearly, proposing that attraction is an "...attitude toward persons as a class of objects" (1956, p. 575). Further, dimensions of attraction have in common" ...degree and direction on an approach--avoidance continuum, together with associated cognitive content" (p. 575). This is only partially satisfying, of course, since "attitude" is left undefined. For present purposes the definition of "attitude" proposed by Chein (1948) will be used: "An attitude .... is a disposition to evaluate certain objects, actions, and situations in certain ways" (p. 177). Throughout the present investigation, then, interpersonal attraction will be considered as a dispositional, evaluative, and affective response toward
(between) persons or classes of persons.

1. **Reward and drive**

Most theories have used reward as their underlying concept. Newcomb (1956; 1961) and Homans (1950; 1961) explicitly stated the role of reward in their theories. This position views interpersonal attraction as the product and producer of reciprocal rewards between persons engaged in communicative (interactive) behavior. For Newcomb, the major factor in continued interaction, and consequent continuing of the exchange of rewards, is the real and perceived similarity of the individuals toward each other and towards objects which both deem of value. It should be noted that Newcomb's call for rigorous investigation of attraction, and his theoretical formulation of the problem with subsequent empirical testing have been very instrumental in structuring the current state of this area.

A second point of commonality among attraction theories concerns the issue of what is rewarding. Most formulations posit that the antecedent condition necessary for attraction is the reduction of a heightened drive state of the interacting individuals. "Reward," then, is seen as any behavior which mutually reduces drive level. The nature of the drive state has been postulated in various ways. Newcomb (1953; 1961), for example, proposes that lack of "co-orientation" (disagreement) with other persons is stressful and tends to initiate
activity to reduce the stress. Similarly, Heider (1946; 1958), Osgood and Tannenbaum (1955), Festinger (1957), Cartwright and Harary (1956), and Rosenberg (1956) emphasize the "imbalance," "incongruity," and "dissonance" between cognitive elements in interaction and propose that the reduction of such drive states is rewarding. Therefore, individuals seek interactions with others who either maintain drive at a low level or who reduce drive level.

Several theorists have proposed types of drive which are less reliant upon "balance." Festinger's (1954) Social Comparison Theory, and Schachter's (1959) theory of affiliative behavior (cf. also Zander and Havelin, 1960; Schachter and Singer, 1962) posit that individuals are motivated to evaluate their opinions, abilities, and emotional states in terms of the social reality presented by others. Since the most "trustworthy" sources of comparison are those who are similar to ourselves, we will be attracted toward such persons and it will be rewarding to be considered correct or competent in their eyes. Pepitone and Kleiner (1957), Kleiner (1960), and Aronson and Linder (1965) propose that threat to self-esteem is a potent drive state, and attraction is directed to the agent who either reduces threat or increases self-esteem.

It would seem that these various views of the role of drive in interpersonal attraction are not so much contradictory or independent as they are descriptions of variations in the same underlying process. Such a stand has been taken
recently by Byrne, Nelson, and Reeves (1966), and by Byrne and Clore (1967). These authors argue that the many concepts of drive all fit within the framework of White's (1959) idea of effectance motivation, in that each involves consideration of the person's effective interaction with the environment. People strive for competence in dealing with the world about them. In the service of this need for effective behavior, they manipulate objects without direct or observable reward, seek stimulation and novelty of experience, and avoid situations which pose too great a threat to their feeling of efficacy. Accordingly, individuals seek to maintain cognitive balance, congruity, consonance, self-esteem, and to compare themselves favorably to others because such activities increase the effectiveness with which they deal with the environment:

White stressed the 'positive' aspects of the motive to explain why organisms avoid the monotonous and repetitious and familiar in order to seek stimulation via exploration, play, intellectual curiosity, and manipulation of the environment...The present authors argue, however, that the same motivational construct which accounts for a preference for stimulation also accounts for a negative response to stimuli which lie further along the continuum of unfamiliarity, unpredictability, and unexpectedness. ... If...the stimulus events are sufficiently unfamiliar, unpredictable or inexplicable, they arouse anxiety and fear. The desire to deal effectively with the environment can thus lead either to pleasurable exploration or to fearful withdrawal. (Bryne and Clore, 1967, pp. 2-3).

Since people who are dissimilar from us are unfamiliar and unpredictable compared to persons who are similar to us, the
former will be unattractive and less well-liked, whereas the latter will be attractive and well-liked. The desire to deal effectively with the environment will thus lead to either attraction or rejection, depending upon the degree of similarity between two persons (Byrne and Clore, 1967).

2. Impression formation and drive level

Two important sets of variables have received little attention in terms of theoretical integration, even though they have high theoretical relevance. These are variables which involve the organization of the information an individual receives from or about another person, and variables involving the temporary drive states of individuals which have been proposed as the bases of interpersonal attraction. Most theories rely upon the idea that reduction of some drive through the receipt and processing of information is central to the determination of the attraction response. It would seem important, therefore, to understand how drive and information are related.

Investigators of "impression formation" have noted for some time that order, consistency, and meaningfulness of information describing a person have an effect upon the organization of others' impressions of that person's personality (cf. Asch, 1946; Anderson, 1962; 1965; 1967; Anderson and Jacobson, 1965; Anderson and Norman, 1964; Levy and Richter, 1963; Willis, 1960, Rosenberg et al., 1968; Pyron, 1965;
Stewart, 1965) "Information" in these studies has usually been a list of trait adjectives and "impression" defined as the subjects' ratings of the person on a series of other trait adjectives. The general viewpoint of authors in this area is that the formation of an impression is a cognitive process involving the categorization of information. The categories used by individuals are the products of past experience and represent expectations about the relationship between pieces of information. For example, Leventhal and Singer stress that "...an impression of a specific person can be regarded as the product of a process involving the multiple categorization of complex stimulus events" (1964, p. 210). The viewpoint that individuals hold expectancies about the relationship between items of information is exemplified by Hokansen and Doerr (1964, p. 529): "...prior to an interpersonal encounter, a subject anticipates characteristics of the other person in keeping with those which have predominated in previous encounters; moreover, these anticipations seem to be probabilistic, approximating their relative occurrence in prior situations."

At present, few psychologists in the field of interpersonal attraction have sought to explore the relationship between impression formation and attraction. As a point of departure for such exploration, one might propose that the formation of impressions is the cognitive activity which takes place prior to and/or concurrently with the evaluative,
dispositional, and affective activity of attraction. Such
cognitive activity centers around the categorization of infor-
mation, i.e., determining the relationships of patterning
between items of information. The attraction response, there­
fore, is determined by the over-all pattern which the
individual perceives and its meaning for him in terms of past
experience and present expectations. For example, a person
may process and categorize the behaviors and characteristics
of a "target" person and perceive the pattern of information
he receives to be "someone-who-is-a-threat-to-my-self-esteem." The
subsequent attraction response would be negative.

One very basic implication of this viewpoint is that the
degree of patterning in the information which an individual
receives is a key factor in this formation of an impression
and the consequent attraction response he emits. "Degree of
patterning" is defined here as the relative ambiguity of
information items, their consistency with one another, and
their relative weights as indicators of a type of pattern.
The importance of these variables lies in their effect upon
the individual's ability to categorize information and to
perceive patterns. If the information permits little clear-
cut categorization, the person will be unable to form a
definite impression of the "target" and will be likely to
withhold his affective response. If the information is
highly patterned, however, impression formation should be
facilitated and the attraction response should be appropriately
intense.
Within the framework of a patterning proposal, it might be suggested that drive level has two possible effects upon the attraction response. First, drive may function to make the individual more or less responsive to certain types of patterns. For example, the pattern "someone-who-is-a-threat-to-my-self-esteem" would probably receive a more intense attraction response under conditions where the individual's self-esteem was threatened prior to his receiving information about another person than when no threat preceded the information (cf. Kleiner, 1960; Aronson and Linder, 1965; Walster, 1965, for data which support this notion). Secondly, certain types of drive may influence the attraction response by making the individual more or less responsive to the degree of patterning in information. For instance, when an individual is motivated to reduce uncertainty and to be accurate in his social perceptions, he is more likely to be responsive to high degrees of patterning than when he is not so motivated. Responsiveness to low degrees of patterning, however, should be approximately the same regardless of level of motivation. In short, one would expect an interaction between the degree of patterning in information and drive level.

B. Interpersonal Attraction: Research

Research activity in the area of interpersonal attraction has been intense and diverse. In a recent review of literature limited to the period between 1950 and 1962, Lott and
Lott (1965) cite nearly 300 references. In a preliminary review the present author collected an additional 150 citations for the years 1962-1968. The majority of these studies have been concerned with the identification of variables which influence the attraction response and with theory testing. Examples of some of these identified variables are: propinquity (Bossard, 1932; Davis and Reeves, 1939; Byrne and Buehler, 1955; Byrne, 1961a); frequency and amount of interaction (Bovard, 1951; 1956; Heber and Heber, 1957; Sherif and Sherif, 1953; Sherif et al., 1955; Wilson and Miller, 1961; Palmore, 1955; Deutsch and Collins, 1958; Mann, 1959); similarity of attitudes (Newcomb, 1956; 1961; Byrne, 1961b; Byrne and Nelson, 1965a; Byrne and Clore, 1967); similarity of personality characteristics (Izard, 1960a; 1960b); affiliation need (Byrne, 1962, Smith, 1960); authoritarianism (Byrne, 1965; Sheffield and Byrne, 1967); attraction of others toward self (Aronson and Worochel, 1966; Backman and Secord, 1959); good fortune of others (Jellison and Mills, 1967); personal tragedy of others (Kiesler et al., 1967); a pratfall of another (Aronson et al., 1966); eye contact and pupil size (Stass and Willis, 1967); gain and lose of self-esteem (Aronson and Linder, 1965; Kleiner, 1960; Walster, 1965); anticipation of cooperation or competition (Lerner et al., 1967); similarity of competence level (Zander and Havelin, 1960). To a lesser extent, investigators have focused upon the consequences of interpersonal attraction and upon the
effects of manipulation of attraction on group dynamics
(of Lott and Lott, 1965, for a thorough review of the latter aspect).

1. Patterning of information

It was noted above that one implication of the viewpoint held by impression formation theorists is that the degree of patterning in the information which an individual receives is an important factor in his formation of an impression and the consequent attraction response he emits. Some pilot data collected by the present author support this notion.

In this experiment the specific pattern-to-be-perceived was held constant and the degree of patterning was varied. Subjects filled out a "Survey of Attitudes" questionnaire (Byrne, 1961b; 1962) which required them to indicate their attitudes about a number of different issues (e.g., integration, premarital sex relations, religion) on six-point bipolar scales. Later in the school year subjects received the questionnaires of bogus "strangers," and were asked to evaluate their stranger in terms of how much they felt they would like the stranger if they met him and how much they would enjoy working with him on a project. Answers to these two questions constituted the attraction response. The questionnaire responses of the "strangers" were manipulated so that all subjects received strangers who agreed with them on 67 per cent of the subjects' items (i.e., were on the same side of the mid-point of the scale for those items). Thus,
the pattern-to-be-perceived was designated as "agreeable-person" and was the same for all subjects. The degree of patterning in the attitude information was varied by manipulating the relative strengths of the strangers' attitudes with respect to the relative strengths of the subjects' attitudes. One group of subjects received strangers whose responses were entirely randomly determined. A second group received strangers whose responses were randomly determined on half of the items and were exactly the same as those of the subject on the other half of the items. A third group received strangers whose responses were determined systematically (either exactly the same response or exactly opposite the response made by the subject). These groups represented increasing levels of patterning in the attitude information. In the first group, the lack of relationship (patterning) between the strengths of a subject's attitudes and the attitude strengths of the stranger obscured the pattern-to-be-perceived. This was less true in the second group and least in the third.

It would be predicted from an impression formation standpoint that the intensity of the attraction response should be a function of the degree of patterning in the information a subject receives about another person. This prediction follows from the hypothesis that the easier it is for a subject to process and categorize information, the easier it will be for him to form an impression, and consequently, the
more intense will be the attraction response he emits. The results of this study supported the prediction; subjects in the first group (low patterning of information) were less intense in their attraction responses than were subjects in the second or third (moderate and high patterning of information) groups.

A second implication of the impression formation viewpoint is that it should be possible to influence the attraction response by varying the patterns-to-be-perceived in information. Some data relevant to this implication are offered by a series of studies conducted by Byrne and his co-workers at the University of Texas. These authors have hypothesized that the attitudes of a stranger are rewarding when they are similar to those of an individual and punishing when they are contradictory. By presenting subjects with strangers who vary in the relative number of attitudes which they hold in common with the subject, Byrne et al., have shown that attraction is a linear function of the proportion of similar attitudes (Byrne, 1961b; 1962; Byrne and Clore, 1966; Byrne and Griffitt, 1966; Byrne and Nelson, 1965; Byrne and Rhamey, 1965; Byrne, Nelson, and Reeves, 1966; Byrne, Young, and Griffitt, 1966). Though these authors propose a reinforcement model to account for their finding, (i.e., that each similar attitude is a reinforcement which increments the positive attraction response), they do not propose any clear explanation of why the proportion of similar attitudes is the crucial
variable in their results and not the absolute number of agreements (see Byrne and Nelson, 1965). If "proportion of similar attitudes" is considered to be a type of pattern which the subject perceives, however, these findings are well explained by the application of impression formation concepts. "Proportion of similar attitudes" in this case can be considered as a pattern inherent in the information presented to the subject which leads to an impression of "agreeable-person" or "disagreeable-person" and hence to a positive or negative attraction response.

2. **Drive level**

Concerning the second area of neglect, the effect of drive level upon the attraction response, three studies point to the possible importance of drive variables. An experiment by Peak (1960) indicates that attitudes increase in intensity under conditions of aroused motivation (manipulated by giving students a "pop" quiz). Worchel and Schuster (1966) manipulated drive level by varying the number of strangers which disagreed with the subject on a social issue before a stranger agreed with the subject. The results showed that an agreeing stranger was liked more if he was preceded by several disagreeing strangers (high drive condition) than if he was preceded by several agreeing strangers (low drive condition). Finally, data reported by Byrne and Clore (1967) indicate a curvilinear relationship between the intensity
of the attraction response and level of "effectance motivation." At low and high levels of arousal the intensity of attraction responses was less than at a moderate level.

3. **Drive level and patterning of information**

No studies have been reported which deal directly with the implication of impression formation theory that certain types of drive may make the individual either more responsive to certain types of patterns or more responsive to certain degrees of patterning in the information he receives from or about another person. However, the data and methodology of the Byrne and Clore (1967) experiment offer some relevant information concerning these questions.

These authors aroused the effectance motive in their subjects by showing them a ten-minute "non-predictable" movie in which there was no meaningful relationship between a series of scenes or between events within a single scene. The rationale for this manipulation was that exposure to the film constituted a situation in which events were unfamiliar, unpredictable, and inexplicable, and therefore led to increased effectance motivation. A control group was shown a non-arousing travelog film.

Immediately after the movie, subjects were presented with the attitude questionnaires of bogus strangers. Subjects received questionnaires with either a high or a low proportion of responses similar to their own. The initial analysis
revealed only an effect due to similarity; no differences were found between subjects who had seen the arousing film and those who had seen the control film. Byrne and Clore then divided the subjects who had seen the arousing film into two groups: (1) those whose arousal scores fell above the median, and (2) those whose arousal scores fell below the median. A second analysis indicated that subjects who were the most highly aroused gave a less negative response to dissimilar strangers and a less positive response to similar strangers than did subjects who had seen the arousing movie but were the least aroused by it. Compared to the subjects who had viewed the control film, those who were highly aroused by the non-predictable movie were not significantly different in the "intensity" of their responses to dissimilar or similar strangers, and both of these groups were less "intense" than those subjects who were least aroused by the non-predictable movie. Byrne and Clore (1967) concluded that as effectance level increased, the similarity-attraction relationship was initially increased, but as higher levels are reached subjects became disorganized, disoriented, and less sensitive to environmental stimulation.

Three aspects of this study bear upon the question at hand. First, the method of producing strangers' responses in this experiment is exactly the same as that used in the third experimental group (high degree of patterning) of the pilot study described above. Secondly, there were two types
of patterns made available to subjects: "agreeable-person" and "disagreeable-person." Finally, it can be argued that effectance motivation is one type of drive which should influence an individual's responsiveness to the degree of patterning in information. This latter point follows from the work of a number of authors which indicates that under conditions of stress, uncertainty, and threat (condition describable as effectance-motivating), individuals are motivated to seek structure, order, and pattern in the information they receive from the environment (Brim and Hoff, 1957; Cohen et al., 1955; Munsinger and Kessen, 1964; Gerard, 1963; Lanzetta and Driscoll, 1966; Maddi, 1961; Elliot, 1966; Gergen and Jones, 1963; Pervin, 1963). Rephrasing the results of Byrne and Clore's experiment in terms of the patterning proposal, the data indicate that with degree of patterning held constant at a high level, the intensity of attraction responses to either of two types of patterns is curvilinearly related to drive level.

There is an obvious discrepancy between the results of the Byrne and Clore (1967) study and the predictions made from the impression formation proposal that requires explanation. At the highest level of effectance arousal attraction intensity was lower than at the moderate level of arousal. This is contrary to the patterning prediction that as drive increases, individuals should be more responsive to a high degree of patterning. However, it will be remembered that
drive has two possible effects upon the attraction response: to make the individual more or less responsive to certain \textit{types} of patterns, and to make the individual more or less responsive to \textit{degrees} of patterning. From the descriptions of effectance motivation put forth by Byrne and Clore and from the supportive data cited above, it can be argued that effectance motivation is one type of drive variable which has both of these effects. If this is true, Byrne and Clore's results may be explained by suggesting that the tendency of subjects to "fearfully withdraw" from making intense attraction responses to the patterns they perceived at high levels of drive overshadowed their increased responsiveness to the degree of patterning. In short, Byrne and Clore's methodology confounded the two effects of drive level upon intensity of attraction responses.

It is concluded that the Byrne and Clore study failed to test the predictions made from the patterning proposal because only one level of patterning was present (high), and because the two effects of drive were possibly confounded. However, the technique of these authors for arousing the effectance motive, combined with the present author's technique of varying degree of patterning, makes such a test possible. Since the relationship between drive level and degree of patterning has relevance for the patterning proposal and for the field of interpersonal attraction as a whole, the empirical testing of this relationship is selected as the
focus of the present investigation.

C. Purpose

The purpose of this study is to examine the effects of effectance motivation, patterning of information, and patterns-to-be-perceived upon the intensity of interpersonal attraction responses. Further, on the basis of the theory and data reviewed above, it is desirable to examine the effects of these variables both separately and jointly.

It was noted above that most theories of interpersonal attraction propose that the reduction of some type of drive through the receipt and processing of information is the basis for a positive response. When drive is increased by such information, the resultant response will be one of avoidance, i.e., a negative attraction response. Whether the information received will decrease or increase drive is dependent upon the past experiences of the individual with the patterns contained in the information. For example, the pattern "disagreeable-person" is contained in a set of attitude statements which are conflicting with the individual's own attitudes. The perception of such a pattern should lead to an appropriately intense negative attraction response. The pattern "neither-agreeable-nor-disagreeable" is contained in a set of attitude statements which agree with the individual on half the topics and disagree with him on the
other half. In this case impression formation should lead to a neutral attraction response, i.e., a response of low intensity. The pattern "agreeable-person" is contained in a set of statements which are similar to those of the individual, and should lead to an appropriately intense positive attraction response. Thus, in the present investigation it is hypothesized that the intensity of attraction responses will be a function of the proportion of similar attitudes between an individual and a stranger such that intensity will be greater toward highly similar and dissimilar strangers than toward moderately similar strangers.

It is also proposed that the intensity of attraction responses will be a function of the degree of patterning in the information received from a stranger. A high degree of patterning should be present in a set of attitude statements where the indicated strengths of the attitudes are the same for all topics. A low degree of patterning, on the other hand, should be present when the strengths of the attitudes vary unsystematically from topic to topic. It follows from impression formation theory that the intensity of attraction responses should be greater when the degree of patterning is high than when it is low. This would be true, however, only when the stranger is either highly similar or dissimilar. In these cases, a high degree of patterning facilitates the formation of a clear impression of "agreeable-person" or "disagreeable-person," and therefore leads to a more intense
attraction response. When the pattern is "neither-agreeable-nor-disagreeable-person" intensity should be low regardless of the degree of patterning.

Increases or decreases in drive level occur most often from the receipt and processing of information about other persons. However, as the evidence of Byrne and Clore (1967) indicates, drive may also be manipulated experimentally and independently from such information. From the theories of effectance motivation and impression formation, it is predicted in the present investigation that highly aroused individuals will be more intense in their responses to high degrees of patterning when the patterns "agreeable-person" and "disagreeable-person" are presented to them than non-aroused individuals. The intensity of responses of highly-aroused and non-aroused individuals to either low degrees of patterning or the pattern "neither-disagreeable-nor-agreeable-person," however, should not differ. This expectation follows from the idea that an increase in effectance motivation is accompanied by an increased desire to seek order and consistency in incoming information. When order and consistency are present in the information, the impression formation is facilitated and the attraction response should be more intense.

In summary, the purpose of the present study is to test the following hypotheses concerning the intensity of interpersonal attraction responses which are derived from theories
of impression formation and effectance motivation:

(1) Subjects will be more intense in their attraction responses to similar and dissimilar strangers than to moderately similar strangers.

(2) Subjects in the High-Patterning condition will be more intense in their attraction responses to highly similar and dissimilar as compared to moderately similar strangers than will be subjects in the Low-Patterning condition.

(3) Subjects in the Low-Patterning condition will be less intense in their over-all attraction responses than subjects in the High-Patterning condition.

(4) Drive, degree of patterning, and similarity will interact such that as drive increases, subjects in the High-Patterning condition will be more intense in their responses to highly similar and dissimilar strangers as compared to moderately similar strangers than will be subjects in the Low-Patterning condition.
III. METHOD

A. Subjects

Subjects were 240 college freshmen and sophomores at Iowa State University enrolled in Introductory Psychology classes during the fall quarter of 1968. Participation was voluntary. Each subject received two points extra-credit toward his course grade if he completed the experiment. Of the total sample, 89 were males and 151 were females.

B. Design

The design of the experiment was a 2x2x3 factorial with 20 replications. Two levels of drive, two levels of patterning, and three levels of attitude similarity were represented. Thus, the model for the design was

\[ Y_{ijkl} = D_1 + P_j + S_k + DP_{ij} + DS_{ik} + PS_{jk} + DPS_{ijk} + E_{ijkl}, \]

where \( D \) = Drive, \( P \) = Patterning, \( S \) = Similarity, and \( i = 1,2, \)
\( j = 1,2, \) \( k = 1,2,3, \) and \( l = 1-20. \) All of the variables were regarded as fixed. The sources of variance, degrees of freedom for each source, and expected mean squares for each source are presented in Table 1.

From Table 1 it can be seen that the appropriate test of any given effect is the ratio of the mean square for that effect to the error mean square.
Table 1. Sources of variance, degrees of freedom, and expected mean squares

<table>
<thead>
<tr>
<th>Source</th>
<th>Degrees of Freedom</th>
<th>Expected Mean Squares</th>
</tr>
</thead>
<tbody>
<tr>
<td>Drive (D)</td>
<td>i-1</td>
<td>$\sigma_e^2 + \theta_{1d}^2$</td>
</tr>
<tr>
<td>Patterning (P)</td>
<td>j-1</td>
<td>$\sigma_e^2 + \theta_{1p}^2$</td>
</tr>
<tr>
<td>Similarity (S)</td>
<td>k-1</td>
<td>$\sigma_e^2 + \theta_{1s}^2$</td>
</tr>
<tr>
<td>D x P</td>
<td>(i-1)(j-1)</td>
<td>$\sigma_e^2 + \theta_{dp}^2$</td>
</tr>
<tr>
<td>D x S</td>
<td>(i-1)(k-1)</td>
<td>$\sigma_e^2 + \theta_{ds}^2$</td>
</tr>
<tr>
<td>P x S</td>
<td>(j-1)(k-1)</td>
<td>$\sigma_e^2 + \theta_{ps}^2$</td>
</tr>
<tr>
<td>D x P x S</td>
<td>(i-1)(j-1)(k-1)</td>
<td>$\sigma_e^2 + \theta_{dps}^2$</td>
</tr>
<tr>
<td>Error (within)</td>
<td>ijk(l-1)</td>
<td>$\sigma_e^2$</td>
</tr>
</tbody>
</table>

C. Instrumentation

1. Survey of Attitudes

In order to manipulate the attitudinal similarity between subjects and strangers it was necessary to construct a questionnaire which elicited subjects' opinions about a number of topics. The topics and specific items used in the present experiment were drawn from a pool of 56 items available from previous research by Byrne and Nelson (1964; 1965b). The format of these bipolar items is a statement of a topic followed by six choice-statements which vary in favorableness with respect to the topic. For example:
Birth Control (choose one)

(1) I am very much in favor of most birth control techniques.
(2) I am in favor of most birth control techniques.
(3) I am mildly in favor of most birth control techniques.
(4) I am mildly opposed to most birth control techniques.
(5) I am opposed to most birth control techniques.
(6) I am very much opposed to most birth control techniques.

The numbers in parentheses indicate the response alternative the subject was to mark on his machine-scored answer sheet.

The selection of items from the pool of 56 was made on the basis of the importance of the topic with which the item dealt. The results of a recent study by Byrne et al. (1968) indicate that when subjects and strangers disagree on topics which vary in importance, more "weight" is given to disagreements occurring on "important" topics than on "unimportant" topics. To simplify procedures in the present investigation, it was desirable to use a set of items which were homogeneous with respect to importance. The topics of the 56 Byrne attitude items were presented to 73 volunteers from introductory psychology classes during the spring quarter of 1968. The subjects were instructed to rate each topic on a scale from 1 to 5 according to how important they felt it was (see Appendix A for a list of the 56 topics and their mean importance ratings). The twelve items whose topics received the highest mean importance ratings were selected for inclusion in the Survey of Attitudes questionnaire. The topics were: belief in God; birth control;
American way of life; sports; premarital sex relations; money; social aspects of college life; dating; war; college education; fresh air and exercise; professors and student needs. The questionnaire is presented in Appendix B.

2. Interpersonal Judgment Scale

The Interpersonal Judgment Scale (IPJS) is a questionnaire constructed by Byrne (1961b) to measure subjects' evaluations of others. The subject is asked to judge the other person's intelligence, morality, knowledge of current events, and adjustment. In addition, two bipolar items deal with how much the subject would like the other person if he met him, and how much he would like to work with him as partners on a project. The correlation between the two attraction items found in the present investigation was .71. This value compares favorably to the correlation found in previous research (Byrne and Nelson, 1965a) of .75.

Two modifications of the IPJS were made for the present study. First, the response-scale was increased from a 7-point to a 9-point scale. Second, bipolar items were added dealing with how similar the other person is, his consistency and his complexity, along with nonpolar items asking how strongly (either positive or negative) the subject would feel about the other person if he met him, and how much additional information the subject would like to have in order to form a firm opinion about the other person.
The attraction intensity score for each subject was computed by adding the absolute values of the differences between the scale points and the neutral point on the two attraction items. The algorithm for computing the intensity scores, then, was: \( X = |Y-5| + |Z-5| \), where \( X \) is the attraction intensity score, \( Y \) is the numerical response to one of the attraction items, \( Z \) is the numerical response to the other attraction item, and \( 5 \) is the neutral point of the response-scale.

The Interpersonal Judgment Scale is presented in Appendix C.

3. Effectance Arousal Scale

The Effectance Arousal Scale was constructed by Byrne and Clore (1967) to measure the level of arousal in subjects after exposure to drive-inducing situations. The general rationale behind the method of inducing effectance arousal and measuring the arousal level is most clearly stated by the authors:

Any situation in which the effectance motive is aroused should be unpleasurable and should evoke a negative emotional response. In addition, specific cognitive elements over and above an unpleasant feeling might be expected to accompany arousal.... It was hypothesized, therefore, that the effectance motive is aroused by stimulus conditions which are unpredictable (and hence novel, unfamiliar, ambiguous, and unexpected), and that arousal is associated with verbal reports of uneasiness, confusion, unreality, dream-like feelings, and a desire for social comparison. (Byrne and Clore, 1967, p. 5)
Accordingly, Byrne and Clore selected items which dealt with feelings of unreality, feelings like those when dreaming, uneasiness, confusion, and the desire to know the thoughts of others. Each item is self-rated by the subject on a scale from 1 to 5 and the total effectance arousal score can range from 5 to 25. Four buffer items are included with the 5 arousal items and the resulting 9-item questionnaire is presented to subjects as a "Reaction Scale." The Reaction Scale is presented in Appendix D.

The internal consistency of the Effectance Arousal Scale is reported by Byrne and Clore (1967) to be .69 (corrected split-half). In the present investigation an internal consistency reliability of .71 was found.

4. Drive stimuli

In order to have a standard, controlled stimulus with nonpredictable qualities which would arouse the effectance motive, Byrne and Clore (1967) devised an 8-millimeter sound color movie. The rationale which they followed was simply to produce a series of scenes having no meaningful interrelationship and in which the sequence of events within a scene followed no logical schema:

...the resultant edited version consists of 10 minutes and 23 seconds of continuing meaninglessness. Scenes include ceramic figures of cannibals cooking a missionary, an aerial view of a toy battleship, Mr. Ed the talking horse, a flushing toilet, a chess game played with cosmetic bottles, Negro children playing, a girl swimming, a
dizzying ride through the tree-tops, and a variety of animals. The sound track is predominately that of Voodoo Suite played by Perez Prado with occasional interpolations of other sounds. (Byrne and Clore, 1967, p. 5.)

To test the arousal properties of this type of stimulus, the authors showed the unpredictable film, a control film entitled Life in Morocco (Pat Dowling Company), and a medical film entitled Extracapsular Cataract Operation with Peripheral Iridectomy (Visual Education Service, University of Minnesota) to a total of 120 subjects. Subjects in all three groups were given the same instructions prior to seeing the movie:

There is an increasing interest in movies and television for instructional purposes. We are interested in what kind of learning takes place while a person watches a film. In a moment you will see a movie, and after it is over you will be asked about your understanding of it. Since we are interested in the learning process, it is important that you do not talk to each other or share your reactions either during the movie or after it is over. (Byrne and Clore, 1967, p. 6)

After viewing the movie the subjects were asked to complete the Reaction Scale, which was then scored for effectance arousal. A one-way analysis of variance indicated significant differences between the groups (F = 38.12, df = 2/117, p < .001). The mean arousal score for the control movie (Life in Morocco) was 7.20, 9.60 for the medical film, and 12.48 for the unpredictable movie.

In the present investigation an attempt was made to follow the rationale of Byrne and Clore as closely as possible
in devising the arousal and control stimuli. A nonpredictable video tape served as the arousal stimulus. The scenes on the tape included gloved hands fondling a model of a human brain, a non-sensical game played with cosmetic bottles, a dart striking a *Playboy* fold-out, out-of-focus close-ups of statuary, tragic newspaper headlines superimposed on comic-strips, and a dizzying walk through a hallway. The accompanying sound was a recording of Bela Bartok's Quartet No. 1 in A Minor (Columbia Records) and various shouts, whistles, and groans. The tape lasted for 9 minutes and 10 seconds. A control tape of the same length was made of two psychology graduate students discussing intelligence testing procedures.

In order to pretest the drive stimuli and to insure their comparability to those used by Byrne and Clore, 66 volunteers (35 females, 31 males) from psychology courses during the summer session of 1968 were randomly assigned to the two tape conditions. The instructions given to the subjects were the same as those of Byrne and Clore. After viewing the tapes the subjects filled out the Reaction Scale. The subsequent analysis indicated that the nonpredictable tape was comparable in its arousal properties to the non-predictable movie devised by Byrne and Clore. The mean

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1 Appreciation is extended to D. L. Nord for his creative help in devising this tape.
arousal score from the pilot data was 12.49, as compared to the mean arousal score of 12.48 obtained by Byrne and Clore. The control tape, however, was found to be more arousing than the control film used by these authors. The mean arousal score for the control tape was 11.70 as compared to 7.20 for the film used by Byrne and Clore. The arousing properties of the control tape may have been due to the unstructured nature of the taped conversation (verbal reports of the discussants indicated that the talk was somewhat confusing even to them). It was also discovered that the quality of the sound recording in the control tape was poor, and that background noise of nearby construction interfered with the conversation.

In order to find an acceptable control stimulus, it was decided to follow the rationale of Byrne and Clore more closely. Accordingly, an educational film entitled *The Columbia River* (Coronet Films) was selected and shown to a new sample of 48 subjects who were enrolled in an abnormal psychology class during the fall of 1968. The mean arousal score for the new control film was 7.19, a figure quite close to that obtained by Byrne and Clore.

As a final precautionary step, the differences between male and female arousal scores were examined in both the aroused and control conditions. The results indicated no significant sex differences.
5. **Manipulation of similarity and patterning**

Attitudinal similarity was operationally defined in this investigation as agreement on specific items of the Survey of Attitudes questionnaire. Agreement in this study was either exact, as when both subject and stranger indicated the same response-choice on an item, or close, as when the choices of both subject and stranger are of the same direction with respect to polarity. In the present experiment three levels of agreement were used: 17 per cent (agreement on two items); 50 per cent (agreement on six items); and 83 per cent (agreement on ten items).

Patterning of information is operationally defined here as the relative strengths of response-choices across items of the Survey of Attitudes questionnaire. For example, a highly-patterned set of responses would be characterized by response choices which were all the same scale distance from the neutral attitudinal position. That is, the attitudinal statements across items are all of the same intensity of favorableness or unfavorableness. A low-patterned set of responses, on the other hand, would be characterized by inconsistency across items with respect to the intensity of response-choices. In the present investigation two levels of patterning in the response sets of "strangers" were used: low (response strengths to all 12 Survey of Attitudes items were randomly determined and thus varied from item to item); and high (all response strengths were 2 scale points from the
neutral attitudinal position). Examples of a highly-patterned set of responses and a low-patterned set of responses are given in Table 2 and Table 3.

In order to have the highest possible control over the variables of attitude similarity and response patterning it was necessary that the "strangers" in the present study be actually manipulated by the experimenter, rather than being real people. To accomplish the task of creating "strangers" whose responses fit each of the six possible similarity-patterning conditions, a computer program was written to operate upon the original responses of each subject to the Survey of Attitudes questionnaire and to print out the "stranger's" response choices appropriate to the experimental condition to which the subject had been randomly assigned (see Appendix E). Thus, each subject received a set of responses supposedly chosen by a stranger, but which was actually a function of the subject's own response-choices and the particular similarity-patterning condition to which he had been assigned. The program was constructed so that within each similarity condition the specific responses on which the stranger agreed or disagreed with the subject were randomly varied across subjects. Assignment to the similarity-patterning conditions was accomplished by randomly ordering the data cards containing the subjects' questionnaire responses before each computer run.
Table 2. Example of a set of highly-patterned responses

<table>
<thead>
<tr>
<th>Choice Number</th>
<th>Response</th>
</tr>
</thead>
<tbody>
<tr>
<td>2</td>
<td>I believe that there is a God.</td>
</tr>
<tr>
<td>5</td>
<td>I am opposed to most birth control techniques.</td>
</tr>
<tr>
<td>5</td>
<td>I believe that the American way of life is the best.</td>
</tr>
<tr>
<td>2</td>
<td>I enjoy sports.</td>
</tr>
<tr>
<td>5</td>
<td>In general, I am opposed to premarital sex relations.</td>
</tr>
<tr>
<td>2</td>
<td>I believe that money is not one of the most important goals in life.</td>
</tr>
<tr>
<td>5</td>
<td>I am in favor of an emphasis on social aspects of college life.</td>
</tr>
</tbody>
</table>

Table 3. Example of a set of lowly-patterned responses.

<table>
<thead>
<tr>
<th>Choice Number</th>
<th>Response</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>I strongly believe that there is a God.</td>
</tr>
<tr>
<td>4</td>
<td>I am mildly opposed to most birth control techniques.</td>
</tr>
<tr>
<td>6</td>
<td>I strongly believe that the American way of life is the best.</td>
</tr>
<tr>
<td>2</td>
<td>I enjoy sports.</td>
</tr>
<tr>
<td>1</td>
<td>In general, I am very much opposed to premarital sex relations.</td>
</tr>
<tr>
<td>3</td>
<td>I feel that perhaps money is not one of the most important goals in life.</td>
</tr>
<tr>
<td>6</td>
<td>I am very much in favor of an emphasis on social aspects of college life.</td>
</tr>
</tbody>
</table>
D. Procedure

1. Session I

Subjects were run in groups of 20 to 30. Before reporting for the experiment they were informed that they would participate in an experiment on social perception which would require two sessions of one hour each, one week apart.

Session I was introduced by the following instructions:

This is an experiment in social perception. I am interested in how people evaluate other people just from knowing some of their attitudes. Tonight I am going to ask you to indicate your attitudes about a number of topics on the questionnaire which I will hand out in a minute. Next week I will ask you to make some judgments about other people who have filled out this same questionnaire. Because of the personal nature of some of the items on this questionnaire, your answers and those of the other people will be kept strictly confidential. No one will associate your name with the answers you give.

The subjects were then instructed in how to use the machine-scored answer sheets that were provided and allowed to complete the Survey of Attitudes questionnaire. Before leaving Session I they were reminded that they had to complete both Session I and Session II in order to receive credit for the experiment.

During the interim between Session I and Session II, the subjects' responses were transferred to data cards, the cards randomly ordered, and then run through the "stranger program."
2. **Session II**

Session II was introduced by the following instructions:

Tonight I am going to ask you to make some judgments about people from knowing their answers to the questionnaire which you filled out last week. However, before doing this, I have been asked by Dr. Rhamey (a fictitious name) to help him in collecting some pilot information concerning a project he is going to do in a few weeks. There has been an increasing interest in movies and television for instructional purposes. Dr. Rhamey is interested in what kind of learning takes place while a person watches audio-visual material, such as a movie or a t.v. video tape. In a moment you will see some audio-visual material, and later in this session you will be asked about your understanding of it. Since Dr. Rhamey is interested in the learning process, it is important that you do not talk to each other or share your reactions either while you are watching the material or afterwards.

Both the arousal tape and the control movie had been set up prior to the arrival of the subjects. After giving the above instructions, the experimenter excused himself from the room for a moment, and determined which drive condition was to be run by means of a random event.

Immediately after the tape or the movie was shown, the subjects were given the Survey of Attitudes responses of a "stranger" along with the following instructions:

The purpose of this experiment is to determine the extent to which one person can form valid judgments about another person just by knowing a few of his attitudes. Recently you filled out a questionnaire called "A Survey of Attitudes" which asked you to choose attitudes which were closest to your own on a number of topics. Listed on this sheet are attitudes chosen by
someone in another class. The name has been removed from the choices because of the personal nature of some of the items. To the best of my knowledge this person is a stranger to you, and the only information you have about this person is that he or she is the same sex as yourself.

Read through the choices carefully and try to form an impression and an opinion of him or her. Then complete the Interpersonal Judgment Scale (your judgments will remain strictly confidential). If you have further comments about the person or about the task, you may write them on the back of this sheet.

After completing the Interpersonal Judgment Scale the subjects were asked to fill out the Reaction Scale. Finally, the true nature of the experiment and the manipulations were revealed to them, and an explanation offered for the necessity of the deceptions concerning the reality of the "strangers" and the purpose of the t.v. tape or movie. Before being dismissed the subjects were asked not to reveal to their classmates the true nature of the experiment.

The order of events in Session II follows that of Byrne and Clore's (1967) investigation. The purpose for presenting the "strangers" to subjects immediately after seeing the tape, instead of having them fill out the Reaction Scale first, was simply to insure that effectance arousal was as high as possible while the subjects were reacting to the "strangers." The same order was maintained in the movie groups for purposes of control.
IV. RESULTS

A. Check on Manipulations

1. Effectance arousal

To determine if the tape and movie drive stimuli had produced the appropriate levels of high and low effectance arousal, mean arousal scores were computed for the high and low arousal groups. The differences between these two group means was tested and found to be significant and in their expected direction (t = 16.15, d.f. = 238, P < .001). The mean arousal score for the low drive group was 7.83. The mean arousal score for the high drive group was 14.12. These scores were comparable to those found by Byrne and Clore (1967) and to those obtained in the pilot studies described above, as indicated in Table 4.

Table 4. Mean arousal scores of high and low drive groups in three studies

<table>
<thead>
<tr>
<th>Study</th>
<th>Low Drive Group</th>
<th>High Drive Group</th>
</tr>
</thead>
<tbody>
<tr>
<td>Present</td>
<td>7.83</td>
<td>14.12</td>
</tr>
<tr>
<td>Pilots</td>
<td>7.19</td>
<td>12.49</td>
</tr>
<tr>
<td>Byrne and Clore (1967)</td>
<td>7.20</td>
<td>12.48</td>
</tr>
</tbody>
</table>
2. **Discrepancy**

Studies by Byrne *et al.* (1967) and by Nelson (1965) indicate that the average discrepancy between attitude responses of a subject and responses of a stranger across items on the Survey of Attitudes questionnaire can affect attraction scores, over and above the proportion of items in which the subject and the stranger agree or disagree. In the present investigation it was possible that the manipulation of patterning may have produced differential average discrepancies between subjects and strangers in the Low and High Patterning conditions. This difference in discrepancy would then be confounded with the variable of patterning, and would not permit the conclusion to be made that effects on attraction intensity scores were due to the influence of degree of patterning alone.

In order to test whether or not discrepancy and patterning were confounded, the mean discrepancies between subjects and strangers in each of the two patterning conditions were computed. The mean discrepancy in the Low-Patterning group was 23.19. The mean discrepancy in the High-Patterning group was 21.89. The difference between the two means was not significant \( t = 1.41, \text{ d.f.} = 238, p > .10 \).

**B. Tests of Hypotheses**

The attraction intensity scores were analyzed by analysis of variance. These results are presented in Table 5.
Table 5. Analysis of variance of attraction intensity scores

<table>
<thead>
<tr>
<th>Source</th>
<th>Sum of Squares</th>
<th>Degrees of Freedom</th>
<th>Mean Square</th>
<th>F</th>
</tr>
</thead>
<tbody>
<tr>
<td>Drive (D)</td>
<td>0.5042</td>
<td>1</td>
<td>0.5042</td>
<td>0.1081</td>
</tr>
<tr>
<td>Patterning (P)</td>
<td>1.2042</td>
<td>1</td>
<td>1.2042</td>
<td>0.2581</td>
</tr>
<tr>
<td>Similarity (S)</td>
<td>40.6750</td>
<td>2</td>
<td>20.3375</td>
<td>4.3592*</td>
</tr>
<tr>
<td>D x P</td>
<td>6.3375</td>
<td>1</td>
<td>6.3375</td>
<td>1.3584</td>
</tr>
<tr>
<td>D x S</td>
<td>0.1583</td>
<td>2</td>
<td>0.0792</td>
<td>0.0170</td>
</tr>
<tr>
<td>P x S</td>
<td>42.3083</td>
<td>2</td>
<td>21.1542</td>
<td>4.5342*</td>
</tr>
<tr>
<td>D x P x S</td>
<td>1.2250</td>
<td>2</td>
<td>0.6125</td>
<td>0.1313</td>
</tr>
<tr>
<td>Error (within)</td>
<td>1063.7251</td>
<td>228</td>
<td>4.6655</td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>1156.1382</td>
<td>239</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

*p < .05

1. **Hypothesis 1:** Subjects will be more intense in their attraction responses to similar and dissimilar strangers than to moderately similar strangers.

The analysis of variance of the intensity scores indicated a significant effect due to similarity, and an examination of the differences between the means for three similarity groups by Duncan's new multiple range test (Edwards, 1960) revealed that these differences were in the predicted directions. The average intensity score was 3.95 for the 17 per cent similarity group, 2.95 for the 50 per cent group, and 3.34 for the 83 per cent group. The 50 per cent similarity group was significantly less intense than either the 17 per cent or 83 per cent groups (p < .05). A graphic
representation of the similarity=intensity relationship is presented in Figure 1.

Figure 1. Graphic representation of mean intensity scores for the three similarity groups

2. **Hypothesis 2:** Subjects in the High-Patterning condition will be more intense in their attraction responses to highly similar and dissimilar strangers as compared to moderately similar strangers than will be subjects in the Low-Patterning condition.

The test of this hypothesis was the patterning-similarity interaction of the analysis of variance (see Table 5). The mean attraction intensity scores for each of the patterning-similarity groups are presented in Table 6, and a graphic representation of the significant patterning-similarity
interaction is given in Figure 2.

Table 6. Mean attraction intensity scores for levels of patterning and similarity

<table>
<thead>
<tr>
<th>Patterning</th>
<th>Similarity</th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Low (17%)</td>
<td>Moderate (50%)</td>
<td>High (83%)</td>
<td>Total</td>
<td></td>
</tr>
<tr>
<td>Low</td>
<td>4.13</td>
<td>3.48</td>
<td>2.85</td>
<td>3.48</td>
<td></td>
</tr>
<tr>
<td>High</td>
<td>3.78</td>
<td>2.43</td>
<td>3.83</td>
<td>3.34</td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>3.95</td>
<td>2.95</td>
<td>3.34</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Figure 2. Graphic representation of the patterning-similarity interaction effect upon attraction intensity scores
A one-way analysis of variance between similarity groups within each of the two patterning conditions indicated significant differences in both instances (Low-Patterning: \( F = 3.62, \text{d.f.} = 2/117, p < .05 \); High-Patterning: \( F = 5.40, \text{d.f.} = 2/117, p < .01 \)). A Duncan's new multiple range test (Edwards, 1960) revealed that in the Low-Patterning condition only the difference between the 17 per cent and 83 per cent similarity groups reached significance at the .05 level. In the High-Patterning condition the 50 per cent similarity group was significantly less intense than either the 17 per cent or the 83 per cent group, and the difference between the means of the latter two groups was not significant.

Comparisons of High and Low-Patterning at each of the three levels of similarity indicated that the two groups differed significantly (\( p < .05 \)) at the moderate and high levels of similarity, but not at the low level.

In the High-Patterning condition, subjects were more intense in their responses to highly similar and dissimilar strangers than they were to moderately similar strangers. In the Low-Patterning condition, however, subjects were most intense in their responses to dissimilar strangers, less intense to moderately similar strangers, and least intense to highly similar strangers. These results give partial support to Hypothesis 2.
3. **Hypothesis 3**: Subjects in the Low-Patterning condition will be less intense in their over-all attraction response than subjects in the High-Patterning condition.

The test for this hypothesis was the main effect due to patterning from the analysis of variance. As indicated in Table 5, this effect was not significant. The mean intensity score for subjects in the High-Patterning condition was 3.34, as compared to 3.48 for subjects in the Low-Patterning condition. It was concluded that Hypothesis 3 was not confirmed.

4. **Hypothesis 4**: Drive, degree of patterning, and similarity will interact such that as drive increases, subjects in the High-Patterning condition will be more intense in their responses to highly similar and dissimilar strangers as compared to moderately similar strangers than will subjects in the Low-Patterning condition.

This hypothesis was tested by the drive-patterning-similarity interaction from the analysis of variance. From Table 5 it can be seen that this interaction was negligible. The mean intensity scores for patterning-similarity groups in the Low-Drive condition are presented in Table 7, and for groups in the High-Drive condition in Table 8. Graphic representations of the patterning-similarity relationships in the Low-Drive and High-Drive conditions are given in Figure 3 and Figure 4.
Table 7. Mean attraction intensity scores for patterning-similarity groups in the Low-Drive condition

<table>
<thead>
<tr>
<th>Patterning</th>
<th>Similarity</th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Low (17%)</td>
<td>Moderate (50%)</td>
<td>High (83%)</td>
<td>Total</td>
</tr>
<tr>
<td>Low</td>
<td>3.95</td>
<td>3.45</td>
<td>2.70</td>
<td>3.37</td>
</tr>
<tr>
<td>High</td>
<td>4.10</td>
<td>2.55</td>
<td>4.00</td>
<td>3.55</td>
</tr>
<tr>
<td>Total</td>
<td>4.02</td>
<td>3.00</td>
<td>3.35</td>
<td></td>
</tr>
</tbody>
</table>

Figure 3. Graphic representation of patterning-similarity intensity means in the Low-Drive condition
Table 8. Mean attraction intensity scores for patterning-similarity groups in the High-Drive condition

<table>
<thead>
<tr>
<th>Patterning</th>
<th>Similarity</th>
<th>Low (17%)</th>
<th>Moderate (50%)</th>
<th>High (83%)</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Low</td>
<td></td>
<td>4.30</td>
<td>3.50</td>
<td>3.00</td>
<td>3.60</td>
</tr>
<tr>
<td>High</td>
<td></td>
<td>3.45</td>
<td>2.30</td>
<td>3.65</td>
<td>3.13</td>
</tr>
<tr>
<td>Total</td>
<td></td>
<td>3.88</td>
<td>2.90</td>
<td>3.33</td>
<td></td>
</tr>
</tbody>
</table>

Figure 4. Graphic representation of patterning-similarity intensity means in the High-Drive condition
C. Post-hoc Analyses

Three additional analyses were carried out to test alternative hypotheses concerning the relationship between intensity, drive, patterning, and similarity. First, it was reasoned that the lack of support for Hypothesis 4 was perhaps due to a decrease in sensitivity to patterning in subjects who had been most highly aroused by the non-predictable tape as compared to those who had been least aroused by it. To test this reasoning, subjects in the High-Drive condition were divided into two groups on the basis of their effectance arousal scores. Those whose scores were below the median were designated as the Moderate-Arousal group and those whose scores were above the median were designated as the High-Arousal group. An analysis of variance of the intensity scores, however, did not support the alternative explanation. A significant drive-patterning interaction was not obtained. Second, the attraction scores (found by summing the numerical responses to the two attraction items on the IPJS) of the Moderate-and High-Arousal subjects were analyzed. A significant main effect for similarity ($F = 20.60$, d.f. = 2/108, $p < .001$) and a significant drive-similarity interaction ($F = 3.12$, d.f. = 2/108, $p < .05$) were found, but not for the main effects of
drive, patterning, nor for the other interactions. Thus, the explanation of decreased sensitivity to patterning as well as similarity at high as opposed to moderate levels of effectance arousal was not supported by this analysis either.

It was also reasoned that an alternative method of computing intensity scores might yield results which supported Hypothesis. Accordingly, responses to item 10 on the IPJS (See Appendix C) which asked subjects to indicate on a 9-point scale how strongly they would feel (not how positive or negative) toward the stranger if they met him, were analyzed. The analysis of variance indicated that High-Drive subjects were significantly less intense in their overall responses than were Low-Drive subjects ($F = 3.99$, d.f. = 1/228, $p < .05$), but no other significant main effects or interactions were found. To further check the comparability of the two methods of measuring intensity, a product-moment correlation was computed between IPJS item-10 responses and original intensity scores. A coefficient of .25 was obtained, indicating that 6.25 percent of the variance in one of the methods was accounted for by the other. It is not

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1The analysis of attraction scores indicated that at the highest levels of effectance arousal subjects were less responsive to similar and dissimilar strangers than were subjects at the moderate level of arousal. There were no significant differences between low and moderately aroused subjects, however and therefore these results only partially replicated those of Byrne and Clore (1967).
clear why these two measures were not more highly related, though it is possible that the wording of item 10 on the Interpersonal Judgment Scale was misinterpreted by some subjects as an additional request for them to indicate the direction of their feelings, rather than the strength (see Appendix C for the exact wording of items 10, 4, and 7). In light of this possibility, it was concluded that the evidence from the analysis of responses to item 10 on the IPJS did not clearly support nor disconfirm the hypotheses in this study.
V. DISCUSSION

A. Intensity as a Function of Similarity

Consistent with Hypothesis 1, it was found that the intensity of attraction responses was a function of attitude similarity such that intensity was greater toward highly similar and dissimilar strangers than toward moderately similar strangers. This finding supports the theoretical explanation that the pattern "neither-agreeable-nor-disagreeable-person" has less effect upon the effectance arousal level of an individual than either "agreeable-person" or "disagreeable-person", and that perception of such a neutral pattern leads to a correspondingly less intense attraction response. This relationship between intensity of response and attitude similarity is the same as found in previous research (Byrne et al., 1966; Byrne and Clore, 1967).

B. Intensity as a Function of Patterning and Similarity

Hypothesis 2, derived from a general theory of impression formation, received only partial support in the present investigation. It was proposed that the intensity of attraction responses would be a joint function of the degree of patterning in the information which subjects received from strangers and the level of attitudinal similarity between subjects and strangers. Since a high degree of patterning was felt to enable individuals to form more clear-cut
impressions of strangers than a low degree of patterning, it was hypothesized that subjects in the High-Patterning condition would be more intense in their responses to highly similar or dissimilar strangers than would subjects in the Low-Patterning condition. It was found, however, that this predicted relationship was obtained only at the 83 per cent (high-similarity) level of attitude agreement (see Tables 5 and 6, and Figure 2). At the 17 per cent level of similarity the two patterning groups did not differ significantly. Further, an unexpected difference, shown in Table 5 and Figure 2, was found between the two patterning groups at the 50 per cent level of similarity. Low-Patterning subjects were more intense than High-Patterning subjects. These results suggest that the relationship between patterning and similarity is more complex than was predicted. One possibility concerning this relationship is that the saliency of patterning in determining the intensity of the attraction response differs between levels of similarity. At low levels of similarity, patterning is less salient than at moderate and high levels of similarity. Thus, when a stranger is dissimilar, he receives a negative attraction response which is of the same intensity regardless of the degree of patterning in his attitude responses. At moderate levels of similarity, however, a low-patterned stranger receives a more intense response than does a high-patterned stranger because the individual perceiving the stranger, lacking other information
concerning the positive or negative qualities of the stranger, will respond negatively to the lack of patterning in his responses. Finally, at high levels of similarity, patterning is again more salient than agreement or disagreement, and an individual withholds a positive attraction response when patterning is lacking, and thus the intensity of his response is less than that of an individual to a highly-patterned stranger.

This explanation is, of course, post-hoc with respect to the intensity of attraction responses, but not with respect to the direction (positive or negative) of the responses. Accordingly, the differences between High and Low-Patterning subjects attraction scores were examined by means of Duncan's new multiple range test (Edwards, 1960) and the results were found to support the saliency explanation. Low-Patterning subjects were equally negative in their responses to dissimilar strangers, but were significantly more negative to moderately similar strangers, and significantly less positive to highly similar strangers than were High-Patterning subjects (p. < .05).

The affective responses of subjects in this investigation to degrees of patterning as well as to attitudinal similarity-dissimilarity suggests that patterning may have arousal properties of its own. That is, just as dissimilarity of a stranger arouses effectance motivation and leads to an
avoidance response to reduce the level of drive, a lack of patterning can also arouse this drive and lead to an avoidance response for the same reason. As observed in this investigation, however, the level of arousal and the consequent strength of the avoidance response is dependent upon the level of attitudinal similarity as well as the lack of patterning in the attitude responses of a stranger. In short, a lack of patterning in information received from a stranger may lead to increased difficulty in forming an impression of the stranger, but the results of this investigation suggest that instead of withholding the attraction response to the stranger because of uncertainty, the individual reduces the level of arousal produced by a lack of patterning either by emitting an intense negative response or by withholding an intense positive response, depending upon how similar the stranger is. These results, while not supportive of Hypothesis 2, are nevertheless consistent with the theory of effectance motivation proposed by Byrne and Clore (1967) and with data concerning the behavior of individuals in response to ambiguous or uncertain situations (Lanzetta and Driscoll, 1966; Elliot, 1966; Pervin, 1963).

The explanation that patterning differs in saliency between levels of similarity and that it has arousal properties of its own also can be offered as a post-hoc explanation for the lack of confirming evidence for Hypothesis 3, which proposed that subjects in the Low-Patterning
condition would be less intense in their over-all attraction responses (i.e., averaged over all the levels of similarity) than subjects in the High-Patterning condition. The rationale for this hypothesis was the same as that for Hypothesis 2: if a high degree of patterning facilitated impression formation, then subjects in the Low-patterning condition should withhold their attraction responses because they would be less able to form impressions of strangers than would subjects in the High-Patterning condition. As indicated in Tables 4 and 5 this prediction was not supported. From a saliency-arousal viewpoint this is due to the increased saliency of patterning at moderate and high levels of similarity and the consequent appearance of a negatively intense response at the moderate-similarity level and the withholding of a positively intense response at the high similarity level for Low-Patterning subjects. This increase in intensity at the moderate similarity level and decrease in intensity at the high similarity level balanced out the corresponding decrease and increase of intensity for the High-Patterning subjects and thus no overall differences were found.

The viability of the saliency-arousal explanation could be checked by repeating the present study, perhaps with an additional (moderate) level of patterning included in the design. The hypotheses would correspond to the obtained results of the present investigation, with levels of intensity
for the moderate-patterning condition predicted as falling between the levels observed for high and low patterning.

C. Intensity as a Function of Drive Level, Patterning, and Similarity

As noted in Tables 7 and 8, and represented in Figures 3 and 4, drive did not affect subjects in the Low and High-Patterning conditions differently across levels of similarity and the drive-patterning-similarity interaction was not significant. Thus, Hypothesis 4, that as drive increased subjects in the High-Patterning condition would be more intense in their responses to highly similar and dissimilar strangers as compared to moderately similar strangers than would subjects in the Low-Patterning condition, was not supported.

This hypothesis was derived from two sources. First, it was considered that effectance motivation as described by Byrne and Clore (1967) was one type of drive which should affect responsiveness both to similarity and to high degrees of patterning. It was proposed that independent manipulation of effectance arousal level should therefore lead to more intense responses when similarity was either low or high and patterning was also high. Second, since it was interpreted from general impression formation theory that high degrees of patterning facilitate impression formation then at high levels of effectance arousal and high levels of patterning, intensity to highly similar and dissimilar
strangers was expected to be even greater. The saliency-arousal explanation of patterning offered above, however, suggests that this interpretation was in error. The alternative prediction, derived from this post-hoc explanation, would be that as effectance arousal was independently increased, Low-Patterning subjects would become more negatively intense in their responses to dissimilar and moderately similar strangers, and would become less positively intense in their responses to highly similar strangers, as compared to High-Patterning subjects. This alternative prediction would not have received support, although a comparison of Figures 3 and 4 indicates that the results are in this direction.

Several possibilities might account for why the drive manipulation failed to affect the intensity of attraction responses in the present study. First, effectance motivation may not be the underlying basis for the intensity-similarity and intensity-patterning relationships. Perhaps Byrne and Clore (1967) were too inclusive in their theoretical derivation of the effectance notion, and a more molecular construct, such as "threat to self-esteem" or "frustration of social comparison," if properly operationalized, would produce and account for the predicted effects of the drive manipulation. However, the data discussed above which suggest that patterning has arousal properties of its own, and data collected by Byrne and Clore (1967) which show that attitude
similarity also has arousal properties as measured by the Effectance Arousal Scale, would seem to indicate that this possibility is less plausible than others which might be offered.

Another possible reason for the lack of drive effects is that effectance motivation is the underlying motivational basis of the patterning- and similarity-intensity relationships, but in the present investigation it was not properly operationalized. Although the Byrne and Clore (1967) rationale and procedure for creating the arousal and control stimuli were followed as closely as possible in the present study, it is conceivable that the arousal tape and the control movie (1) differed in certain crucial respects from the stimuli used by Byrne and Clore and (2) were therefore not adequate representations of effectance arousing or non-arousing situations. Two factors make both of these possibilities plausible. First, although it was noted that the stimuli produced for the present investigation were comparable to those used by Byrne and Clore in terms of their mean arousal scores (see Table 4), the internal consistency estimates of the Effectance Arousal Scale are only moderately high (.69 and .71). This would suggest that responses to specific items could be markedly different in the two studies yet produce comparable effectance scores. Second, a careful examination of the content of the stimuli used in the Byrne and Clore study and those used in the present investigation reveals
certain differences which may be relevant to the question at hand. In the Byrne and Clore arousal film several scenes were interpersonal or social in nature (Negro children playing, ceramic cannibals cooking a missionary, a girl swimming, Mr. Ed the talking horse, two people playing a game of chess). Similarly, the control film (*Life in Morocco*) was socially oriented. In the present investigation, however, the arousal tape contained no scenes of direct interpersonal contact. Only a single pair of gloved hands were visible in the chess-game scene, and the only fully discernible human being in the tape was a *Playboy* foldout. Likewise, the control movie in the present study (*The Columbia River*) was not socially oriented.

Since the situation of confronting a stranger is interpersonal in nature, the question arises as to whether the effectance motivation underlying similarity and patterning of the stranger's attitudes is the same as that type of effectance motivation aroused by the arousal tape in the present investigation. Although Byrne and Clore do not distinguish conceptually between interpersonal- and object-oriented effectance motivation, it is possible that the distinction if a valid one. In the present study the ambiguous and confusing stimulus was concerned with things rather than *people*, and thus the motivation to seek order and consistency in the physical environment perhaps did not carry over to seeking order and consistency in the attitude
statements of strangers. That is, while a certain type of effectance motivation was aroused by the t.v. tape in the present study, it is possible that this motivation was not the kind which would effect the intensity of attraction responses to varying degrees of patterning and similarity. This possibility could be empirically examined by repeating the present study and including both the interpersonally-oriented stimuli of Byrne and Clore (1967) and the object-oriented stimuli used here. A comparison of the two sets of stimuli in terms of their effects upon intensity to patterning and similarity would yield evidence concerning the question at hand. It would be predicted that the interpersonally-oriented arousal stimulus should produce significant results in the directions indicated in Figures 3 and 4.

In summary, the lack of effect of the effectance motivation manipulation upon attraction intensity scores may have been due to either inadequate conceptualization of effectance arousal or to an inadequate operationalization of the concept. The most plausible of these possibilities is that a type of effectance motivation was aroused in the present study which was not relevant to the processing of interpersonal information, and therefore the effects of interpersonal effectance arousal were not tested in the present investigation. However, assessment of the relative viability of these alternative explanations must await further experimental examination.
D. Conclusions

The results of the present investigation support the notion that both similarity of attitudes between an individual and another person, and the degree of patterning in the information the individual receives from the other person are important variables in determining the intensity of interpersonal attraction responses. Further, some indirect evidence was obtained which suggests that the effectance motive as derived by Byrne and Clore (1967) underlies affective responses to a lack of patterning in another person's attitudes. However, it was concluded that this type of effectance motivation was possibly not independently manipulated in the present investigation, and therefore this suggestion remains tentative. The implications of this research for the area of interpersonal attraction lie in the apparent usefulness and heuristic value of the theories of effectance motivation and impression formation for prediction and explanation of experimental findings.
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VII. ACKNOWLEDGMENTS

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VIII. APPENDIX A

MEAN IMPORTANCE RATINGS OF FIFTY-SIX TOPICS
<table>
<thead>
<tr>
<th>Topic</th>
<th>Mean Rating</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Fraternities and Sororities</td>
<td>1.92</td>
</tr>
<tr>
<td>2. Western Movies and Television Programs</td>
<td>1.18</td>
</tr>
<tr>
<td>3. Undergraduates Getting Married</td>
<td>2.15</td>
</tr>
<tr>
<td>4. Situation Comedies</td>
<td>0.97</td>
</tr>
<tr>
<td>5. Belief in God</td>
<td>3.26*</td>
</tr>
<tr>
<td>6. Professors and Student Needs</td>
<td>2.75*</td>
</tr>
<tr>
<td>7. A Catholic President</td>
<td>1.18</td>
</tr>
<tr>
<td>8. Necking and Petting</td>
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</tr>
<tr>
<td>9. Smoking</td>
<td>1.79</td>
</tr>
<tr>
<td>10. Integration in Public Schools</td>
<td>2.12</td>
</tr>
<tr>
<td>11. Comedians Who Use Satire</td>
<td>1.49</td>
</tr>
<tr>
<td>12. Acting on Impulse vs. Careful Consideration of Alternative</td>
<td>2.42</td>
</tr>
<tr>
<td>13. Social Aspects of College Life</td>
<td>2.78*</td>
</tr>
<tr>
<td>14. Birth Control</td>
<td>2.82*</td>
</tr>
<tr>
<td>15. Classical Music</td>
<td>1.63</td>
</tr>
<tr>
<td>16. Drinking</td>
<td>2.19</td>
</tr>
<tr>
<td>17. American Way of Life</td>
<td>2.90*</td>
</tr>
<tr>
<td>18. Sports</td>
<td>2.81*</td>
</tr>
<tr>
<td>19. Premarital Sex Relations</td>
<td>2.89*</td>
</tr>
<tr>
<td>20. Science Fiction</td>
<td>0.96</td>
</tr>
<tr>
<td>21. Money</td>
<td>2.38*</td>
</tr>
<tr>
<td>22. Grades</td>
<td>2.22</td>
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<tr>
<td>23. Political Parties</td>
<td>2.00</td>
</tr>
<tr>
<td>24. Group Opinion</td>
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<tr>
<td>25. One True Religion</td>
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<td>26. Musical Comedies</td>
<td>1.15</td>
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<tr>
<td>27. Preparedness for War</td>
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<tr>
<td>28. Welfare Legislation</td>
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<tr>
<td>29. Creative Work</td>
<td>2.17</td>
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<tr>
<td>30. Dating</td>
<td>3.11*</td>
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<tr>
<td>31. Red China and the U.N.</td>
<td>2.12</td>
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<td>32. Novels</td>
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<td>33. Socialized Medicine</td>
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<td>34. War</td>
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<td>35. State Income Tax</td>
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<td>38. Foreign Movies</td>
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<td>39. Strict Disciplining of Children</td>
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<td>40. Financial Help from Parents</td>
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<td>41. Freshmen Having Cars on Campus</td>
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<td>42. Requiring Students to Learn a Foreign Language</td>
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<td>43. College Education</td>
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*Topic included in the Survey of Attitudes Questionnaire
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<th>Topic</th>
<th>Mean Rating</th>
</tr>
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<tr>
<td>44. Fresh Air and Exercise</td>
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<td>45. Father vs Mother as Disciplinarian of Children</td>
<td>1.75</td>
</tr>
<tr>
<td>46. Nuclear Arms Race</td>
<td>1.96</td>
</tr>
<tr>
<td>47. Community Bomb Shelters</td>
<td>1.42</td>
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<td>48. Divorce</td>
<td>1.75</td>
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<td>49. Gardening</td>
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<td>50. Dancing</td>
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<td>51. Draft</td>
<td>2.78</td>
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<td>52. Women in Today's Society</td>
<td>2.25</td>
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<tr>
<td>53. Family Finances--Husband vs. Wife Controlling</td>
<td>2.26</td>
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<tr>
<td>54. Modern Art</td>
<td>1.23</td>
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<tr>
<td>55. Careers for Women</td>
<td>2.07</td>
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<tr>
<td>56. Men vs. Women as Better Able to Adjust to Stress</td>
<td>1.64</td>
</tr>
</tbody>
</table>

*Topic included in the Survey of Attitudes Questionnaire
IX. APPENDIX B

SURVEY OF ATTITUDES QUESTIONNAIRE
SURVEY OF ATTITUDES

Name ________________________________ Psychology: __ Sect.: __ Date: ____________

Age: ___ Sex: ___ Class: Fr. ___ Soph. ___ Jr. ___ Sr. ___

Directions: This booklet contains a number of topics about which people usually hold opinions or attitudes. Following each topic are 6 possible attitudes. You are to choose the one attitude which is closest to your own and indicate your choice both on this booklet and on the answer sheet provided. For example, suppose that the topic is "Western Movies." The choices offered might be:

(1) I enjoy western movies very much
(2) I enjoy western movies
✓ (3) I enjoy western movies to a slight degree
(4) I dislike western movies to a slight degree
(5) I dislike western movies
(6) I dislike western movies very much

If you chose statement number 3, "I enjoy western movies to a slight degree," you would check that statement on the booklet and blacken the space under "3" on the answer sheet:

1  2  3  4  5  6

Note that there are nine answer spaces provided for each topic on the answer sheet. Use only "1" through "6". Do not use "0" or "7" through "9."

Please answer every item as best you can. Be sure to mark your choices both on this booklet and on the separate answer sheet.

Your answers will remain strictly confidential.
1. Belief in God (choose one)

(1) I strongly believe that there is a God.
(2) I believe that there is a God.
(3) I feel that perhaps there is a God.
(4) I feel that perhaps there is no God.
(5) I believe that there is no God.
(6) I strongly believe that there is no God.

2. Birth Control (choose one)

(1) I am very much in favor of most birth control techniques.
(2) I am in favor of most birth control techniques.
(3) I am mildly in favor of most birth control techniques.
(4) I am mildly opposed to most birth control techniques.
(5) I am opposed to most birth control techniques.
(6) I am very much opposed to most birth control techniques.

3. American Way of Life (choose one)

(1) I strongly believe that the American way of life is not the best.
(2) I believe that the American way of life is the best.
(3) I feel that perhaps the American way of life is not the best.
(4) I feel that perhaps the American way of life is the best.
(5) I believe that the American way of life is not the best.
(6) I strongly believe that the American way of life is the best.

4. Sports (choose one)

(1) I enjoy sports very much.
(2) I enjoy sports.
(3) I enjoy sports to a slight degree.
(4) I dislike sports to a slight degree.
(5) I dislike sports.
(6) I dislike sports very much.

5. Premarital Sex Relations (check one)

(1) In general, I am very much opposed to premarital sex relations.
(2) In general, I am opposed to premarital sex relations.
(3) In general, I am mildly opposed to premarital sex relations.
(4) In general, I am mildly in favor of premarital sex relations.
(5) In general, I am in favor of premarital sex relations.
(6) In general, I am very much in favor of premarital sex relations.

6. Money (choose one)

(1) I strongly believe that money is not one of the most important goals in life.
(2) I believe that money is not one of the most important goals in life.
(3) I feel that perhaps money is not one of the most important goals in life.
(4) I feel that perhaps money is one of the most important goals in life.
(5) I believe that money is one of the most important goals in life.
(6) I strongly believe that money is one of the most important goals in life.
7. Social Aspects of College Life (choose one)

(1) I am very much against an emphasis on social aspects.
(2) I am against an emphasis on social aspects.
(3) I am mildly against an emphasis on social aspects.
(4) I am mildly in favor of an emphasis on social aspects.
(5) I am in favor of an emphasis on social aspects.
(6) I am very much in favor of an emphasis on social aspects.

8. Dating (choose one)

(1) I strongly believe that girls should be allowed to date before they are in high school.
(2) I believe that girls should be allowed to date before they are in high school.
(3) I feel that perhaps girls should be allowed to date before they are in high school.
(4) I feel that perhaps girls should not be allowed to date before they are in high school.
(5) I believe that girls should not be allowed to date before they are in high school.
(6) I strongly believe that girls should not be allowed to date before they are in high school.

9. War (choose one)

(1) I strongly believe that war is sometimes necessary to solve world problems.
(2) I believe that war is sometimes necessary to solve world problems.
(3) I feel that perhaps war is sometimes necessary to solve world problems.
(4) I feel that perhaps war is never necessary to solve world problems.
(5) I believe that war is never necessary to solve world problems.
(6) I strongly believe that war is never necessary to solve world problems.

10. College Education (choose one)

(1) I strongly believe that it is very important for a person to have a college education in order to be successful.
(2) I believe that it is very important for a person to have a college education in order to be successful.
(3) I believe that perhaps it is very important for a person to have a college education in order to be successful.
(4) I believe that perhaps it is not very important for a person to have a college education in order to be successful.
(5) I believe that it is not very important for a person to have a college education in order to be successful.
(6) I strongly believe that it is not very important for a person to have a college education in order to be successful.
11. Fresh Air and Exercise (choose one)
   (1) I strongly believe that fresh air and exercise are not important.
   (2) I believe that fresh air and exercise are not important.
   (3) I feel that perhaps fresh air and exercise are not important.
   (4) I feel that perhaps fresh air and exercise are important.
   (5) I believe that fresh air and exercise are important.
   (6) I strongly believe that fresh air and exercise are important.

12. Professors and student needs (choose one)
   (1) I feel that university professors are completely indifferent to student needs.
   (2) I feel that university professors are indifferent to student needs.
   (3) I feel that university professors are slightly indifferent to student needs.
   (4) I feel that university professors are slightly concerned about student needs.
   (5) I feel that university professors are concerned about student needs.
   (6) I feel that university professors are very much concerned about student needs.
X. APPENDIX C

INTERPERSONAL JUDGMENT SCALE
INTEPERSONAL JUDGEMENT SCALE

Directions: Below are a number of questions dealing with the characteristics of the person you are to evaluate. Indicate your judgement for each item by marking the most appropriate number on the answer sheet provided (do not use "0"). Your judgements will remain strictly confidential. Do not mark on this booklet.

1. **Intelligence**

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<tbody>
<tr>
<td>very</td>
<td>average</td>
<td>very</td>
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2. **Morality**

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<td>moral</td>
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3. **Knowledge of current events**

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<td>knowledgeable</td>
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<td>ignorant</td>
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4. **How much would you like this person if you met him/her?**

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<tr>
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<td>much</td>
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<td>not at all</td>
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5. **Adjustment**

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6. **Similarity to you**

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<tbody>
<tr>
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<td>very</td>
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7. How much would you like to work with this person as partners on a project?

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8. Consistency

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9. Complexity

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<td>very simple</td>
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10. How strongly (either positive or negative) would you feel about this person if you met him/her?

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<tr>
<td>neutral</td>
<td>moderate</td>
<td>strong</td>
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11. How much additional information would you like to have in order to form a firm opinion about this person?

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<tr>
<td>none</td>
<td>some</td>
<td>much more</td>
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XI. APPENDIX D

REACTION SCALE
REACTION SCALE

Directions: Below are a number of questions dealing with your reactions and feelings while watching the audio-visual material. Indicate your answer to each item by selecting one of the possibilities listed and then marking its corresponding number on the separate answer sheet. Do not mark on this booklet.

How did you feel while watching the material?

1. Entertained (choose one)
   - (1) Not at all entertained
   - (2) Slightly entertained
   - (3) Moderately entertained
   - (4) Entertained
   - (5) Quite entertained

2. Disgusted (choose one)
   - (1) Not at all disgusted
   - (2) Slightly disgusted
   - (3) Moderately disgusted
   - (4) Disgusted
   - (5) Extremely disgusted

3. Unreality (choose one)
   - (1) Strong feelings of unreality
   - (2) Feelings of unreality
   - (3) Moderate feelings of unreality
   - (4) Slight feelings of unreality
   - (5) No feelings of unreality at all.

4. Anxious (choose one)
   - (1) Not at all anxious
   - (2) Slightly anxious
   - (3) Moderately anxious
   - (4) Anxious
   - (5) Extremely anxious
5. Dreaming (choose one)

   (1) Very similar to feelings I have when I'm dreaming
   (2) Similar to feelings I have when I'm dreaming
   (3) Moderately similar to feelings I have when I'm dreaming
   (4) Slightly similar to feelings I have when I'm dreaming
   (5) Not at all similar to feelings I have when I'm dreaming

6. Bored (choose one)

   (1) Extremely bored
   (2) Bored
   (3) Moderately bored
   (4) Slightly bored
   (5) Not at all bored

7. Uneasy (choose one)

   (1) Not at all uneasy
   (2) Slightly uneasy
   (3) Moderately uneasy
   (4) Uneasy
   (5) Quite uneasy

8. Confused (choose one)

   (1) Not at all confused
   (2) Slightly confused
   (3) Moderately confused
   (4) Confused
   (5) Quite confused

9. Other's Thoughts (choose one)

   (1) Strong desire to know what others thought
   (2) Desire to know what others thought
   (3) Moderate desire to know what others thought
   (4) Slight desire to know what others thought
   (5) No desire to know what others thought at all
XII. APPENDIX E

COMPUTER PROGRAM FOR PRODUCING "STRANGERS"
ONE CARD IS NEEDED BEFORE DATA (THIS COMES AFTER THE CARDS CONTAINING THE EVALUATION INSTRUCTIONS). IN COLUMNS 1-5 PUNCH THE TOTAL NUMBER OF SUBJECTS. IN COLUMNS 11-22 PUNCH THE NUMBER OF SUBJECTS IN EACH AGREEMENT-PATTERNING COMBINATION (USE 12 FORMAT). LEAVE BLANK IF EQUAL SPLIT IS DESIRED.

DIMENSION NSUB(12), NSTRN(12), TOTDIS(6), NCOND(6), NRAND(12,12), NRAND2(12,12), NRAND3(12,12), DISMN(6), STMT(12,6,40), INST(320)

1 READ(1,5) ((NRAND(I,J),J=1,12),I=1,12), ((NRAND2(I,J),J=1,12),I=1,12), ((NRAND3(I,J),J=1,12),I=1,12)
5 FORMAT(12I2)

READ(1,6) (((STMT(I,J,K),K=1,40),J=1,6),I=1,12), INST
6 FORMAT(20A4/2CA4)

READ(1,10) NS, NDRIVE, N11, N12, N21, N22, N31, N32
10 FORMAT(15,6I2)

IF(N11+N21+N12+N22+N31+N32) 20,15,20
15 N11=NS/6
N12=N11
N21=N11
N22=N11
N31=N11
N32=N11
20 NCOUNT=0
DO 10 I=1,6
NCOND(I)=0
10 TOTDIS(I)=0.

COMPUTE LG AGREEMENT-LO PATTERNING STRANGERS

IF(N11) 55, 55, 25
25 DO 51 I=1,N11
NCOND(I)=11
51 READ(1,26) K, NSUB

FORMATT(14,T11,1211)
NDISC=0
NCOUNT=NCOUNT+1
IF(NCOUNT-13): 35,30,30
30 NCOUNT=1
35 DO 40 J=1,12
40 NSTM(J)=NSUB(J)
DO 43 J=1,12
M=NRAND(NCOUNT,J)
L=NSUB(M)
IF(L.EQ.0) L=3
IF(J-2) 200,200,201
200 GO TO(42,42,42,41,41,41),L
201 GO TO(41,41,41,42,42,42),L
41 NSTRN(M)=NRAND2(NCOUNT,J)
GO TO 43
42 NSTRN(M)=NRAND3(NCOUNT,J)
43 NDISC=NDISC+1ABS(NSUB(M)-NSTRN(M))
TDIS=1=TOTDIS(1)+NDISC
WRITE(3,44) K,NDRIVE,NCOND(1),INST
WRITE(3,2914)
DO 54 J=1,12
ICH=NSTRN(J)
54 WRITE(3,290) J,(STMT(J,ICH,KK),KK=1,40)
51 WRITE(2,45) K,NDRIVE,NCOND(1),NSUB,NSTRN,NDISC
45 FORMAT(14,11,12,T11,12II,12II,12)
C COMPUTE GD AGREE-HI PATTERNING STRANGERS
55 IF(N12) 80,80,60
60 DO 75 L=1,N12
NCOND(L)=12
READ(1,26)K,NSUB
NDISC=0
NCOUNT=NCOUNT+1
IF(NCOUNT-13): 63,61,61
61 NCOUNT=1
63 DO 64 J=1,12
64 NSTRN(J)=NSUB(J)
DO 70 J=1,12
M=NRAND(NCOUNT,J)
L=NSUB(M)
IF(L.EQ.0) L=3
IF(J-2) 202,202,203
202 GO TO(66,66,66,65,65,65),L
203 GO TO(65,65,65,66,66,66),L
65 NSTRN(M)=5
GO TO 70
66 NSTRN(M)=2
70 NDISC=NDISC+IABS(NSUB(M)-NSTRN(M))
    TOTDIS(2)=TOTDIS(2)+NDISC
    WRITE(3,44) K,NDRIVE,NCOND(2),INST
    WRITE(3,291)
    DO 76 J=1,12
      ICH=NSTRN(J)
76 WRITE(3,290) J,(STMT(J,ICH,KK),KK=1,40)
75 WRITE(2,45) K,NDRIVE,NCOND(2),NSUB,NSTRN,NDISC
C
GO TO 254

COMPUTE MOD AGREE- LO PATTERNING STRANGERS
80 IF(N21) 105,105,85
85 DO 100 I=1,N21
    NCOND(I)=21
    READ(1,26)K,NSUB
    NDISC=0
    NCOUNT=NCOUNT+1
    IF(NCOUNT-13) 88,87,87
87 NCOUNT=1
88 DO 90 J=1,12
90 KSTRN(J)=NSUB(J)
GO 95 J=1,12
95 M=NRAND(NCOUNT,J)
L=NSUB(M)
    IF(L.EQ.0) L=3
    IF(J-6) 204,204,205
204 GO TO(92,92,92,91,91,91),L
205 GO TO(91,91,91,92,92,92),L
91 NSTRN(M)=NRAND2(NCOUNT,J)
GO TO 95
92 KSTRN(J)=NRAND3(NCOUNT,J)
95 NDISC=NDISC+IABS(NSUB(M)-NSTRN(M))
TOTDIS(3)=TOTDIS(3)+NDISC
WRITE(3,44) K,NDRIVE,NCOND(3),INST
WRITE(3,291)
DO 101 J=1,12
ICH=NSTRN(J)
101 WRITE(3,290) J,STMT(J,ICH,KK),KK=1,40
100 WRITE(2,45) K,NDRIVE,NCOND(3),NSUB,NSTRN,NDISC
C COMPUTE MOD AGREE-HI PATTERNING STRANGERS
105 IF(N22) 125,125,110
110 DO 120 I=1,N22
NCOND(4)=22
READ(1,26)K,NSUB
NDISC=0
ACCOUNT=ACCOUNT+1
IF(ACCOUNT-13) 113,112,112
112 ACCOUNT=1
113 DO 114 J=1,12
114 NSTRN(J)=NSUB(J)
DO 118 J=1,12
M=NRAND(NCOUNT,J)
L=NSUB(M)
IF(L.EQ.0) L=3
IF(J-6) 206,206,207
207 GC TO(115,115,115,116,116,116,116),L
115 NSTRN(M)=5
GO TO 118
116 NSTRN(M)=2
118 NDISC=NDISC+IABS(NSUB(M)-NSTRN(M))
TOTDIS(4)=TOTDIS(4)+NDISC
WRITE(3,44) K,NDRIVE,NCOND(4),INST
WRITE(3,291)
DO 121 J=1,12
ICH=NSTRN(J)
121 WRITE(3,290) J,STMT(J,ICH,KK),KK=1,40
120 WRITE(2,45) K,NDRIVE,NCOND(4),NSUB,NSTRN,NDISC
C     COMPUTE HI AGREEMENT-LO PATTERNING STRANGERS
125 IF(N31) 150,150,130
130 DO 145 I=1,N31
   NCOND(5)=31
   READ(1,26)K,NSUB
   NDISC=0
   NCOUNT=NCOUNT+1
   IF(NCOUNT-13) 132,131,131
131 NCOUNT=1
132 DO 133 J=1,12
133 NSTRN(J)=NSUB(J)
   DO 140 J=1,12
      M=NRAND(NCOUNT,J)
      L=NSUB(M)
      IF(L.EQ.0) L=3
      IF(J.EQ.0) L=3
      IF(J.EQ.0) L=3
      GO TO(136,136,136,135,135,135),L
208 GO TO(136,136,136,135,135,135),L
209 GO TO(135,135,135,136,136,136),L
135 NSTRN(M)=NRAND2(NCOUNT,J)
   GO TO 140
136 NSTRN(M)=NRAND3(NCOUNT,J)
140 NDISC=NDISC+ABS(NSUB(M)-NSTRN(M))
   TOTDIS(5)=TOTDIS(5)+NDISC
   WRITE(3,44) K,NDRIVE,NCOND(5),INST
   WRITE(3,291)
   DD 146 J=1,12
   ICH=NSTRN(J)
146 WRITE(3,290) J,(STATE(J,ICH,KK),KK=1,40)
145 WRITE(2,45) K,NOKIVE,NCOND(5),NSUB,NSTRN,NDISC
C     COMPUTE HI AGREEMENT-HI PATTERNING STRANGERS
150 IF(N32) 180,180,151
151 DO 175 I=1,N32
   NCOND(6)=32
   READ(1,26)K,NSUB
   NDISC=0
   NCOUNT=NCOUNT+1
   IF(NCOUNT-13) 153,152,152
NCGUNT=1
DO 154 J=i,12
NSTRN(J)=NSUB(J)
DO 170 J=1,12
M=NRAOD(NCOUNT,J)
L=NSUB(M)
IF(L.EQ.0) L=3
IF(J-10) 210,210,211
GO TO (154,156,156,155,155,155),L
GO TO (154,155,155,156,156,156),L
NSTRN(M)=5
GO TO 170
NSTRN(M)=2
M=NRAND(NCOUNT,J)
GO TO (154,156,156,155,155,155),L
GO TO (154,155,155,156,156,156),L
154 NSTRN(J)=NSUB(J)
170 M=NRAND(NCOUNT,J)
175 WRITE(3,44) K,NDRIVE,NCOND(6),INST
WRITE(3,291)
DO 176 J=1,12
ICH=NSTRN(J)
WRITE(3,290) J,(STMT(J,ICH,KK),KK=1,40)
WRITE(2,45) K,NDRIVE,NCOND(6),NSUB,NSTRN,NDISC
180 IF(N11.EQ.0) N11=1
IF(N12.EQ.0) N12=1
IF(N21.EQ.0) N21=1
IF(N22.EQ.0) N22=1
IF(N31.EQ.0) N31=1
IF(N32.EQ.0) N32=1
DISMN(1)=TOTDIS(1)/N11
DISMN(2)=TOTDIS(2)/N12
DISMN(3)=TOTDIS(3)/N21
DISMN(4)=TOTDIS(4)/N22
DISMN(5)=TOTDIS(5)/N31
DISMN(6)=TOTDIS(6)/N32
WRITE(3,190) (NCOND(I),TOTDIS(I),DISMN(I),I=1,6)
190 FORMAT(14,12,18X,F4.0,18X,F4.0)
44 FORMAT(14,12,18X,F4.0,18X,F4.0)
290 FORMAT('0',t5,12,t31,20a4/t31,20a4)
291 FORMAT('1', 'QUESTION NUMBER
STOP
END

STRANGER'S CHOICE')