

THE EFFECTS OF ATTITUDE SIMILARITY, COGNITIVE  
COMPLEXITY, AND INSTRUCTIONAL SET ON IMPRESSIONS  
FORMED OF STRANGERS

by

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Submitted to the Department of Speech and  
Drama and the Faculty of the Graduate  
School of the University of Kansas in  
partial fulfillment of the requirements  
for the degree of Doctor of Philosophy.

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## Acknowledgements

I owe several people thanks for their help with various aspects of this dissertation. My advisor, Walter H. Crockett, introduced me to the study of impression formation and has been both advisor and friend to me during the entire course of the study from formulation of the design to final writing. Thomas Beisecker and Paul Friedman provided suggestions which improved the final form of the dissertation a great deal. Allan Press provided several suggestions to improve design, and later, interpretation of the data, and performed the thankless task of reliability scoring. Finally, William L. Medley, Jr. helped with some knotty problems in fighting the computer.

This dissertation was supported in part by grant HD MH 06750 from the National Institutes of Health, Walter H. Crockett, principal investigator.

N. W. B.

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## CHAPTER I

### INTRODUCTION AND REVIEW OF THE LITERATURE

In everyday interpersonal exchanges, people form impressions of others around them. These impressions are based on observations of others' behaviors. These bits and pieces of information are interpreted and put together to make an impression, even though it may be quite a tentative one.

It is important for students of communication to study impression formation processes for two reasons. First, impression formation is an important example of information processing which may help in understanding how messages in general are processed. Second, once impressions have begun to form, they affect the communication and other interactions which go on between or among people. If a negative impression is formed at the outset, further attempts at communication may be avoided altogether.

Newcomb (1947) recognized this in positing his autistic hostility hypothesis. He stated that when a person develops hostility or other negative feelings toward another, he will tend to avoid mutual communication and contact with that person. This avoidance leads to a perpetuation of the hostility because one or both of the parties avoid

communication which could bring new information and could break down the hostility. So, hostility or negative feelings become self-perpetuating.

Hostility or other negative feelings need not come from impressions formed through communication of the parties involved. The entire impression may result from stereotyping or other factors such as reports from third parties; a person's looks, race, sex, or demeanor; or other things which are more or less out of the control of most people. Or, the impression may be formed on the basis of the first few statements or behaviors of an interaction, and the matter closed. In either case, autistic hostility may remove the opportunities to communicate before any real contact between the persons directly involved can take place.

People may differ in their tendencies to avoid communication with others toward whom they feel negatively. Some people, in fact, seem to be intrigued with others from whom the autistic hostility hypothesis would predict that they would withdraw. These differences may lead to considerable differences in impressions formed of others in interpersonal interactions. There may be differences in depth of impressions due to greater and lesser contact with the person, differences in attraction toward the other person, and differences in assumptions about the other person's behavior.

One possible reason for differences in tendency to

avoid communication as the autistic hostility hypothesis would predict may be differences in the attitude that the perceiver brings to the situation. Rogers (1951) argues that a perceiver can either try to understand or try to evaluate the object of his perception. He makes the plea that people ought to try to understand others with whom they come in contact rather than allowing the evaluation which occurs in the first moments of interaction, or even before an interaction can take place, to cloud reception and interpretation of later statements and behaviors. He argues that, while people may not like each other any better after they understand one another, at least the dislike will be for some cause based in the behavior of the other person and not because of a misinterpretation of his position or the evocation of a stereotype. If people try to understand rather than to evaluate others, lines of communication will tend to remain open. This means that the tendencies predicted by the autistic hostility hypothesis will be overcome, at least until each person has had a fair hearing. Thus, whether the perceiver tries to understand or to evaluate the other person may make an important difference in his tendency to avoid communication with initially negatively valued others.

However, people may also differ in their ability to adopt the understanding or evaluative perceptual stances toward others at will. This difference in ability may be

due to differences in level of cognitive functioning. One important indicator of level of cognitive functioning is cognitive complexity (Crockett, 1965). This personality characteristic indicates both the differentiation and organization of a person's cognitive system and has been shown to be a very important factor related to differences in impression formation. The cognitively complex person is able to differentiate his perceptions more completely, to more readily recognize and accept positive and negative characteristics as simultaneously existing in the same person, and to organize his impressions so that both positive and negative characteristics are accounted for. Since the understanding set is a request to suspend judgment until the other person has had a fair hearing and to try to put oneself in his position, it may require the recognition of positive and negative characteristics in a single person more than the evaluative set does. Thus, it is reasonable to expect that a person who is better able to recognize and accept both good and bad aspects of a person and to organize them into a coherent whole may be better able to adopt the understanding set.

Thus, we have three variables which are related to impression formation -- similarity between the person forming the impression and the object of the impression, instructional set, or tendency to either understand or evaluate, that the person forming the impression uses, and the cog-

nitive complexity of the person forming the impression. This study will use these three variables as independent variables to try to determine their effects, singly and in combination, upon various aspects of impressions formed of others.

Attitude similarity between two persons has been shown to affect attraction or liking in several studies. Thus, if attitude similarity is varied, it will yield examples of persons who should be liked or disliked, gravitated toward or withdrawn from. Other techniques could be used to create such persons, but an additional reason for choosing attitude similarity is that people who differ in levels of cognitive functioning may react to similar and dissimilar persons differently. Since the attitude similarity-attraction relationship has been the subject of much study, it will be valuable to know if the linear relationship found for general populations is the same or different when the population is divided according to level of cognitive functioning. Thus, using attitude similarity will allow for not only creating others who should be liked or disliked, but also will allow other important questions to be asked.

Cognitive complexity, as measured by the Four Role Category Questionnaire (Crockett, 1965) is an indicator of a person's level of cognitive functioning. It indicates the degree of differentiation and integration in a person's

perceptions of other people around him -- liked and disliked, male and female. While the Four Role Category Questionnaire actually measures only differentiation with respect to other people, it has been shown to correlate well with ability to integrate disparate information (Crockett, 1965). Thus, while it measures only one aspect of cognitive functioning, it serves as a good indicator of the other and will allow the separation of people into different levels of cognitive functioning. Its use will allow us to pose the question "Do people who show different levels of cognitive complexity show different responses to similar and dissimilar people and/or to different instructional sets?"

Instructional set to understand or evaluate may serve to modify a person's cognitive functioning in forming an impression and/or to modify reactions to similar or dissimilar persons. The understanding set may raise organization level by inducing people to suspend judgment and, therefore, to absorb both positive and negative information about the stimulus person rather than only the information which agrees with a beginning impression. This may induce people to try to link disparate portions of a person's behavior through the use of motivational explanations. It may lead to greater differentiation by making people more sensitive to nuances in behavior which might otherwise be lumped into a single evaluative category. In addition,

the inclusion of a control condition in which Ss are simply told to form an impression may give some information as to which of the two modes of perceiving, understanding or evaluation, if either, people of different levels of cognitive complexity ordinarily use in forming an impression.

### Review of the Literature

#### Attitude Similarity and Impressions of Strangers

Numbers of studies have indicated that both husbands and wives and mutual friends tend to have more similar attitudes, values, and behaviors than people who do not bear such relationships to one another. (e.g., Newcomb and Svehla, 1937; Schooley, 1936; Winslow, 1937; and Richardson, 1940). Newcomb (1961) provided further support for the notion that similar people like each other when he found that in a group of complete strangers who were brought together to live and become acquaintances, prior similarities of attitude predicted attraction. Others (Schachter, 1951; Smith, 1957; Byrne, 1961; and Berkowitz and Howard, 1959) have found that Ss in experimental situations tend to respond favorably to others who express ideas agreeing with their own and unfavorably to others who disagree with them.

While there is little argument that similarity and attraction are often associated with one another, there is argument as to the proper theoretical explanation for the phenomenon. The two models most often used are cognitive

models and reinforcement models. Cognitive models are most often associated with Heider (1958), Newcomb (1961), and Festinger (1954, 1957). Many theorists have used reinforcement models to explain their experimental findings. Among these are Byrne and Clore (1970), Lott and Lott (1960, 1969), and Staats (1969).

Byrne and his colleagues (Byrne and Nelson, 1965a, 1965b; Byrne and Rhamey, 1965; Clore and Baldrige, 1968; Byrne, Clore, and Griffitt, 1967; Byrne, 1971) have done the most precise and extensive studies using reinforcement theory as a paradigm. Through their studies they have been able to describe the mathematical relationship between attitude similarity and attraction as a positive linear function in which attraction is a straight line function of proportion of similar attitudes weighted by importance.

#### The Byrne Studies

Byrne's research began with a "rather vague reinforcement theory" (Byrne, 1971, p. 268) and progressed to the precise linear prediction model mentioned above. These studies used attitude statements which agreed or disagreed with a S as reinforcers rather than the more traditional reinforcers such as electric shock, verbal responses, head nods, and so on. This approach, of course, assumes that an agreeing attitude statement will serve as a positive reinforcer and that a disagreeing statement will serve as

a negative reinforcer.

A series of experiments was performed to demonstrate the reinforcing properties of attitude statements. Golightly and Byrne (1964) had 60 Ss, who had previously completed a 45 item attitude questionnaire, participate in a discrimination learning task in which the reinforcements were either traditional ("Right" or "Wrong" printed on a card), attitudinal (a printed card containing an attitude statement which either agreed or disagreed with the attitudes expressed by the S), or were neutral statements of fact relevant to the attitude topics. Thus, when S chose the correct alternative he was shown the word "Right," an agreeing attitude statement, or a neutral statement of fact. If he chose the incorrect alternative, he was shown the word "Wrong," a disagreeing attitude statement, or a neutral statement of fact. Each S received the same type of reinforcement for all trials. Trials were continued until the S had made eight consecutive correct responses or until 96 trials were completed. The results showed that the attitude statements group learned significantly better than the neutral statements group, but that the traditional reinforcement group showed the most learning. The conclusion was that traditional reinforcers were the more powerful, but that both traditional and attitude reinforcements produced learning effects.

Byrne, Young, and Griffitt (1966) performed a repli-

cation of the Golightly and Byrne study with two conditions added. These were a similar-neutral condition in which Ss saw a similar attitude statement after correct responses and a neutral statement after incorrect responses; and a neutral-dissimilar condition in which Ss saw a neutral statement after correct responses and a dissimilar attitude statement after incorrect ones. A series of 64 extinction trials was also added. The traditional reinforcement group, as in the Golightly and Byrne study, showed greater learning than any of the other groups, and had a lower rate of extinction. The similar-dissimilar and neutral-dissimilar attitude reinforcement groups showed greater learning than the similar-neutral or the neutral statements only groups, which did not differ significantly from one another. These findings presented the possibility that dissimilar attitudes alone were responsible for the reinforcement effects.

In a follow-up study to explore this possibility, Byrne et. al. (1966) substituted a blank card for an attitude statement in the reinforcement apparatus. Similar-blank, neutral-blank, and dissimilar-blank conditions were used. Learning occurred in all three groups, and there were no significant differences among them. So, the conclusions were that both similar and dissimilar attitudes have reinforcement properties and that neutral statements of fact can serve as positive reinforcers under certain

conditions. Later experiments have shown that attitude reinforcers are more effective when the S is high in social evaluative anxiety (Smith and Jeffery, 1970) and that homogeneous sets of attitudes are more effective reinforcers although heterogeneous statement sets do produce significant learning (Reitz, Douey, and Mason, 1968; Byrne, Griffitt, and Clore, 1968).

Thus, it seems reasonable to conclude that similar-dissimilar attitudes can serve as reinforcers. They may be more potent for some personality types than for others and if the attitudes used for a given S deal with a single topic, the reinforcement effects may be greater. Significantly better than chance learning does take place when heterogeneous attitudes are used, however, so one can say that any agreeing-disagreeing attitude statement can be used as an effective reinforcer.

Having established that attitude statements can be effective as reinforcers, Byrne et. al. returned to their original experiments to integrate their findings about attitudes as reinforcers with their findings regarding attitude similarity and attraction to form and begin to test a more well-defined reinforcement theory of attraction.

The original Byrne study (1961) established the basic methodology for research in the similarity-attraction paradigm. A group of 34 Ss were given a 26 item attitude scale early in the semester and assigned to either an ex-

perimental group in which they would be exposed to a stranger with attitudes similar to their own or one in which they would be exposed to a stranger with dissimilar attitudes. The "strangers" were represented by attitude questionnaires forged by E to agree or disagree with the S's attitudes. In the first experiment, the stranger agreed with either all or none of the S's own attitudes. In later studies, other proportions of agreement and disagreement were used -- most often 80 or 83 per cent and 20 or 17 per cent agreement for the similar and dissimilar conditions, respectively. In some studies, an intermediate condition of 50 per cent agreement was added. In a second session, later in the semester, Ss were given the forged questionnaires which had the background information section scissored out, allegedly to protect the identities of the students who had filled them out, asked to read it over and to respond to the stranger by completing a six item Interpersonal Judgment Scale (See Appendix A). Only the last two items of this scale, which asked how much the S thought he would like the stranger and how much he would like working with the stranger in an experiment, were actually used as measures of attraction. These items were chosen because they were based on the most frequently used sociometric indices of attraction (Byrne, 1971, p. 52). Because the two measures also correlated .85 with one another, they were summed to yield a single measure of attraction.

This original study found that there was, indeed, a significant difference in attraction for similar and dissimilar strangers. A further study (Byrne, 1962) was done, following the same procedures but using only those seven items of the 26 item attitude scale which elicited the most heterogeneous responses from Ss, and varying the number of items of agreement from seven agreements and no disagreements to no agreements and seven disagreements. Heterogeneous items were used to determine whether Ss were responding to dissimilarity or cultural deviancy of the disagreeing strangers. The number of agreeing and disagreeing items was varied to determine the functional relationship between attitude similarity and attraction. The similarity-attraction finding still held, and attraction increased with each additional item of agreement. A later experiment (Byrne and Nelson, 1965a) determined that it was proportion of agreeing attitudes in a set, rather than the actual number, which affected attraction. This later study also established a linear regression formula for predicting attraction from similar attitudes. The formula was  $Y = 5.44X + 6.62$  where Y is the summed attraction score and X is the proportion of similar attitudes in the attitude set.

Byrne and Wong (1962) gave white Ss who showed either high or low prejudice toward blacks a photograph of either a white or black person, purported to be another college student, and asked them to predict this student's

responses on the 26 item attitude scale. The Ss high in prejudice assumed more dissimilarity between themselves and blacks than between themselves and whites, while there was no such difference for Ss low in prejudice. Thus, it appears that not only do people like people with similar attitudes more, they also assume that people they dislike have dissimilar attitudes.

Another study (Baskett, 1970, cited by Lamberth and Byrne, 1971) showed that the more favorably the stranger was rated on an already completed Interpersonal Judgment Scale (IJS), the more similar the Ss presumed him to be to themselves. Scott (1969) found that the greater the similarity between two questionnaires, purported to have been completed by a rater and a stranger, the more attraction for the stranger was attributed to the rater. Both of these studies increase the strength of the findings that Ss associate attitude similarity with liking.

Some later experiments have modified the functional relationship between attraction and proportion of similar attitudes proposed by Byrne and Nelson (1965a). These studies were begun because Newcomb (1961) had found that topic importance was a factor in determining whether similar attitudes would yield attraction, while Byrne and Nelson (1964) had found the similarity-attraction relationship to be independent of topic importance. The stranger questionnaires were varied systematically so that Ss were ei-

ther agreed with on the most important and disagreed with on less important items or the reverse. The results showed that differential topic importance did affect attraction responses. The explanation for the difference in findings was that the earlier Byrne et. al. studies had used normative importance of the topics rather than importance to individual Ss. Clore and Baldrige (1968) varied topic interest in the same fashion in which Byrne, London, and Griffitt had varied importance and found results quite similar to those for topic importance. Byrne (1971) suggested that these two factors should be combined into a factor of "topic impact" (p. 70). He used the information from these two studies to develop a modified linear prediction formula for attraction in which similar and dissimilar attitudes are weighted by their magnitudes of importance or impact. The formula is:

$$Y = m \left[ \frac{(SxM)}{(SxM) + (DxM)} \right] + k$$

where Y is the summed attraction score, S is similar attitudes, D is dissimilar attitudes, M is the magnitude of an attitude, and m and k are empirically derived constants. Unfortunately, Byrne does not say how one derives M -- the magnitude -- specifically, but simply uses three and one for important and unimportant topics, respectively.

This plethora of information, then, had to be fitted into a reinforcement theory of attraction. Byrne and Clore

(1970) maintain that it is really a model rather than a theory, since they have no pretensions that any anomalies between the similarity-attraction responses and learning theory should indicate that change is necessary in learning theory (p. 109). Clore had, in fact, stated this earlier:

The concept of reinforcement used to explain attraction is a model rather than a theory for at least two reasons. First, reinforcement theory is a system with its own ideas and laws external to the attraction phenomenon. The attributes and meanings of this system are being transferred from their original realm, simple animal learning, to the previously unrelated data of interpersonal attraction. Secondly, a model rather than a theory is in use because we are not interested in altering learning theory with our data but rather in suggesting a theory of attraction. If our model does not fit, we may certainly discard it, but we would not claim that learning theory had been shown to be in error. (1966, p. 11)

The Byrne and Clore (1970) model states, following Lott and Lott (1960) that 1) persons represent discriminable stimuli, 2) reinforcement in the form of attitude statements results in goal responses, 3) the goal response will be conditioned to all discriminable stimuli (in this case, people) present at the time of reinforcement and 4) when the goal response is conditioned to a person, that person will evoke the goal response himself (Byrne and Clore, 1970, pp. 107ff.). They report several studies to indicate that this is, in fact, what is taking place. In the first study, Ss were shown two same-sex pictures of college students one at a time. One picture was always paired with agreeing attitude statements and the other was

always paired with disagreeing attitude statements. The Ss then completed Semantic Differential scales for each of the pictures. The responses to the agreeing stimulus were significantly more favorable than the responses to the disagreeing stimulus. To determine that this effect was due only to agreeing statements and not to the combination of agreeing statements and the attribution of those statements to the stranger, Sachs and Byrne (1970) repeated the study twice -- once using geometric figures as the visual stimulus and once using pictures of strangers with opposite-sex voices providing the disagreeing or agreeing statements. The results were the same as in the first study.

The position of Byrne and his colleagues can be summarized by saying that they hold the position that agreeing attitude statements serve as positive reinforcements and that reinforcement from agreeing attitudes is the foundation of the relationship between attitude similarity and attraction.

Exception can be taken to this set of studies and the theoretical model which explains them on a number of grounds. First, and most obviously, one can argue that the measure of attraction is inadequate. It is not a very far-ranging measure, especially when one considers the extensive measures used to assess attraction in other studies. In addition to this, the measure is quite simplistic. It

measures only one dimension, really, since the two questions which are summed to yield the attraction score correlate .85 with one another. It could have been broadened somewhat by including the other four items in the Interpersonal Judgment Scale in the measure of attraction. In essence, Byrne et. al. argue that attraction is both simple and unidimensional.

Beyond the argument that the measure of attraction is too simplistic, one can say that the explanation of the results of the studies is simplistic because it is derived from data which gives information on only one aspect of attraction. Attraction is a complex phenomenon. When information other than attitudes is available, attraction is related to diverse factors such as physical attractiveness (Walster, Aronson, Abrahams, and Rottman, 1966; Brislin and Lewis, 1968), proximity (Festinger, Schachter, and Back, 1950), perception that another likes one or is going to like one (Backman and Secord, 1959; Walster and Walster, 1963), self-esteem (Dittes, 1959; Walster, 1965) and other factors.

Because these other factors enter into the determination of attraction, it seems sensible to argue that Byrne's reinforcement model of attraction is inadequate because it promotes a single type of person as attractive--the attitudinally similar person. It does not take into account that similarity may not be reinforcing for all or

that other factors may enter the picture to overbalance similarity as a reinforcer. The person who is low in self-esteem, for example, may find a person who has attitudes different from his own to be more attractive, since he has a low opinion of himself and his own attitudes. Another possible reason that the similarity-attraction paradigm holds so nicely is that for the vast majority of people a person who agrees with their own attitudes fills a "good figure" position in their cognitive structures. Such a person completes a relatively harmonic picture of the world and satisfies a need for consistency on the part of the perceiver. This latter model can take into account all of the factors mentioned above, without violating the amply demonstrated relationship between attitude similarity and attraction and has considerably more parsimony than a reinforcement model which, unlike Byrne's, tries to take into account all the different possible reinforcers.

Such a cognitive approach views the relationship between similarity of attitudes and attraction in a different and somewhat less precise and rigid way than the reinforcement model. First, the cognitive position presumes that man will do whatever will help him to maintain equilibrium in his life space. Usually it will be the case that liking someone with whom one agrees will help to maintain cognitive equilibrium. Sometimes, however, it will not -- as is the case in a lover's triangle. Thus, the cognitive

theorists' position is that attitude similarity will tend to lead to attraction. This position is not the convenient theoretical loophole that it may seem. It is a statement that the parts of the cognitive space which are perceived to be related to one another must be in balance for the maximum psychological comfort to obtain. If balancing a single relationship -- a small portion of the cognitive space -- will seriously imbalance the larger space, then the single relationship will remain unbalanced in the interests of harmony of the whole. In short, the larger cognitive space must be considered in preference to a single part.

There is some evidence to indicate that, in fact, liking attitudinally similar persons is a response to the fact that such persons fit comfortably into the perceiver's cognitive world. Wright and Wright (1972) report a study which used set-wise multiple regression to analyze not only attitude similarity but also anticipated liking for a stranger, which is one of the questions used by Byrne, and the understandability and nonthreateningness of the stranger as predictors of the total attraction score defined consistently with Byrne et. al. They found that anticipated liking was the strongest predictor of attraction overall. This supports Byrne's finding of high correlation between the two components of his attraction measure -- liking and working with. But, Wright and Wright found that for some types

of target persons (strangers) attitude similarity did not significantly predict attraction. For these stimulus persons, understandability and nonthreateningness were more important in predicting attraction than attitude similarity. The Wrights concluded that the perception of attitude similarity may lead to the anticipation of understandability and nonthreateningness, but that other factors can evoke the same anticipation. They summarize by saying:

In some cases, but by no means all, . . . similarity is related to nonthreateningness and understandability. Thus, if there is a paucity of other relevant information about the /stranger/ attitude similarity becomes the major source of assumptions about the more direct rewards that would be forthcoming from actual interaction with the stranger. There is a strong possibility, then, that attitude similarity is more 'accidental' than 'essential' as a predictor of specific levels of interpersonal attraction. (p. 139)

In any case, it appears from their study that it may be the possibility of the stranger's fitting comfortably into the S's cognitive framework that determines attraction rather than the stranger's value as a reinforcer.

#### Cognitive Complexity and Impressions of Strangers

Several authors have developed measures of cognitive complexity and theoretical positions relating cognitive complexity and perception of people and events (Barron, 1953; Berkowitz, 1957; Bieri, 1955; Leventhal, 1957; Crockett, 1965; Scott, 1962, 1963; Zajonc, 1960). Since it has been shown that these measures do not correlate very well with

one another (Vannoy, 1965; Miller, 1969) it is necessary to choose one of them. This study will follow Crockett's position primarily because his measures are simple for Ss to complete while treating complexity and organization as logically related and discretely scoreable entities.

Crockett (1965) outlines his basic measures of cognitive complexity and his view of the relationship between cognitive complexity and impression formation. He synthesizes Kelly's theory of personality and Werner's developmental psychology into a single system which provides for both the analysis of the complexity of a person's cognitive construct system and the assessment of that construct system for developmental level.

Kelly's (1955) theory of personality takes the position that man, like a scientist, aims to predict and control his world by placing constructions and interpretations on it which will help him to anticipate future events and thus to regulate his own behavior with regard to them. Construct systems developed to do this anticipating differ from person to person because they are based on past experience and each person's experiences are unique to some degree. The corollary of this statement is, of course, that to the degree that individuals have shared similar past experiences, their construct systems will be similar. Construct systems can vary with regard to the number and kinds of constructs within the system and with regard to the organiza-

tion or relationships of the constructs to one another.

Construct systems must develop based on experience. Kelly does not speculate much as to what forms construct systems will take as development progresses. Nor does he speculate whether, as development progresses, different parts of the content of experience will become greater or lesser contributors to the construct system.

Crockett has used Werner's orthogenetic principle of psychological development to develop criteria for judging the developmental level of construct systems as they are defined by Kelly. The orthogenetic principle is that: "Wherever development occurs it proceeds from a state of relative globality and lack of differentiation to a state of increasing differentiation and hierarchic integration," (Werner, 1957, p. 127). Combining Werner and Kelly, Crockett has defined cognitive complexity:

A cognitive system will be considered relatively complex in structure when a) it contains a relatively large number of elements /constructs/ and b) the elements are integrated hierarchically by relatively extensive bonds of relationship.  
(1965, p. 49)

Thus, there are two components of cognitive complexity -- differentiation and hierarchic integration.

Differentiation is simply the number of constructs available for use in a given cognitive domain. Since it would be quite cumbersome, and perhaps impossible, to measure all of the constructs available in a given domain,

Crockett's Role Category Questionnaire (RCQ) allows one to obtain a sample of the available constructs under standardized conditions. This measure asks the S to think of one person to fit each of several roles, the number of roles varying according to the version of the RCQ used. Then the S is asked to spend three minutes writing down a description of each of the persons he has put into the designated roles. Differentiation is scored by simply counting up the total number of constructs used in describing these people.

The second component of cognitive complexity is hierarchic integration. Crockett and Press<sup>1</sup> have developed systems for scoring hierarchic integration of impressions of others. Crockett's system depends upon the S having been given contradictory information about a stranger. It gives progressively higher integration scores for recognition of the contradiction, giving reasons for and relating isolated pieces of information to one another, and explaining all or most of the conflicting information about the person in relation to a single underlying reason or set of reasons. Press' system is similar except that it does not depend on the S having been given contradictory information and it uses recognition of either variability or conflict in the stranger's personality or behavior and various levels of resolution of the conflict or variability as the basis for assigning an impression to a developmental level.

So, a person's level of cognitive complexity is a

combination of the degree of differentiation he uses to construe reality and his ability to join the elements of his construction into an interrelated system. Several studies (Dornbusch, et. al., 1965; Signell, 1966; Hopkins, Press, and Crockett, 1969; Scarlett, Press, and Crockett, 1971) have indicated that cognitive construct systems do develop according to this orthogenetic principle.

In all the studies to be discussed here, the measure of concern has been the person's interpersonal cognitive complexity rather than his complexity in other domains. One can construe with respect to any number of different domains, and the complexity of construction in one is not necessarily related to another. For example, a person could have a very complex system with regard to mathematical concepts and still have a relatively non-complex cognitive system with respect to other people. Since the subject of interest here is interpersonal interaction and communication, cognitive complexity with regard to other people in one's life space will be of primary importance.

A review of the experimental studies dealing with interpersonal cognitive complexity and impression formation yields a number of correlates of cognitive complexity and information about its effects on impression formation. Among college students, the correlation between cognitive complexity and intelligence level is not significantly different from zero (Mayo, 1959; Sechrest and Jackson, 1961;

Rosenkrantz, 1961; Vannoy, 1965). Crockett (1965) suggests that this may be due to the homogeneity of college students with respect to intelligence rather than to actual absence of relationship, but that including persons who are not college students in the sample would probably make the correlation positive but not significant.

Using an eight role version of the Role Category Questionnaire, Supnick (1964, reported in Crockett, 1965) found that generally people are more complex with regard to liked than disliked others, and use more constructs to describe peers than people older than themselves. This finding is supported by Reich (1969). She also found that females use more constructs than males and that Ss use more constructs in describing same sex than opposite sex others, especially if the same sex person is disliked.

Nidorf and Argabrite (1968) report a curvilinear relationship between cognitive complexity and dogmatism. High and low scorers on dogmatism were significantly more complex than Ss scoring in the middle third. Nidorf and Argabrite (1970) also report that cognitively complex Ss use extreme judgment categories significantly more often than Ss low in complexity when responding to semantic differential scales.

Epting (1967) reports a slight negative relationship between cognitive complexity and persuasibility which is probably due to the strong positive relationship between

suspicion and cognitive complexity which he also found.

Crockett (1965) reports a reanalysis of the Supnick data which shows that Ss high in cognitive complexity are more likely to give bivalent rather than univalent impressions of others, and to accept the possibility of unbalanced relationships among their acquaintances than Ss low in cognitive complexity. Mayo and Crockett (1964) report that ". . . the final impressions of subjects high in complexity were almost exactly ambivalent, while the final impressions of lows showed recency effects . . .," (p. 337) in a study where Ss were given four positive traits and then four negative traits or vice versa about a man named Joe. This can be interpreted as meaning that highly differentiated people recognize conflicting information more readily than lows do. This result was replicated only for males by Rosenkrantz and Crockett (1965). They found that among females the relationship did not hold, but suggested that the difference was due to the value incongruity between the female Ss in their sample and Joe. Their reasoning is supported by Meltzer, Crockett, and Rosenkrantz (1966).

Not only do highly differentiated people recognize conflicting information, they are more likely to be able to integrate the conflict. Nidorf and Crockett (1965) report that high complexity Ss integrate conflicting information about a stranger into a unified impression while low complexity Ss tend to form univalent or aggregated impres-

sions instead. Kenny (1968) and Fertig and Mayo (1969) found the same results, as did Mahood (1971). Meltzer, Crockett, and Rosenkrantz (1966) found that this result held when Ss were asked to form impressions of persons with values similar to their own. It was suppressed, however, when the object of the impression was purported to have values incongruent with the S's. This anomaly was explain as being the result of the perceivers' ability to utilize a complex set of interpersonal constructs only when the other person fits a familiar social category.

Two studies (Press, Crockett, and Rosenkrantz, 1969; Delia, 1970) have shown that Ss low in complexity tend to rely on the balance rule in learning social structures more than do high complexity Ss.

The causes of differences in differentiation for a given cognitive domain are probably numerous, but one factor which certainly seems to have an effect is frequency of interaction or contact. Crockett (1965) posits such an hypothesis, saying that greater frequency of interaction with people in general will lead to increased interpersonal cognitive complexity and that people will describe people with whom they interact more frequently in a more complex manner than those with whom they are seldom in contact. He cites evidence from Mayo that fraternity members are more complex than nonmembers and from Supnick that more constructs are used to describe liked persons and peers, both

categories of frequent interaction, than disliked and older persons to substantiate his point. In addition, Supnick found a sex-of-subject by sex-of-other interaction which was due to use of more constructs to describe same sex others than opposite sex others. This effect is cited as evidence of the frequency of interaction hypothesis since frequency of contact with same sex others is greater, or at least more intimate, than with opposite sex others.

Using a measure similar to Crockett's Role Category Questionnaire, Reich (1969) specifically tested the frequency of interaction hypothesis against two rival hypotheses -- the vigilance or negative-enhancement hypothesis (Miller and Bieri, 1965; Irwin, Tripodi, and Bieri, 1967) which holds that differentiation will be greater when the object of the impression evokes negative affect, and the neutral affect hypothesis (Harvey, Reich, and Wyer, 1968) which takes the position, following Sherif and Hovland (1961), that the more intense the attitude toward the object of an impression, the less differentiation with regard to it will be. Thus, the neutral affect hypothesis predicts that differentiation will be greater for neutrally regarded persons than for either liked or disliked ones. The frequency of interaction hypothesis was supported for both differentiation and the number of categories of differentiation used. Positive affect was also associated with higher differentiation than either negative or neutral

affect. Unfortunately, Reich's study did not provide a definitive test of the frequency of interaction hypothesis because he used actual people as the impression objects -- persons the S knew well or only slightly. This means that the S may have had varying amounts of knowledge about the particular persons he described. This leaves open the possibility that the results are an artifact of different amounts of knowledge rather than a true effect of frequency of interaction. A better test of the frequency of interaction hypothesis would be to provide the S with equal amounts of information about persons whom he has not met but who represent categories of people with whom his frequency of interaction as a group is likely to have varied -- for instance, persons likely to be liked or disliked for some reason. This would allow a true test of the frequency of interaction hypothesis -- i.e., it would tell if greater frequency of interaction with the category as a category enhances differentiation.

Understanding, Evaluation, and Impressions of Strangers

Rogers (1952) proposes that one of the major barriers to interpersonal communication is the tendency to react to another person's statement by evaluating it from one's own point of view and reacting to that evaluation rather than trying to understand the statement by taking the other person's point of view and reacting to the meaning of the

communication as the other person sees it. This point of view is a restatement in a different context of one of the tenets of his client-centered psychotherapy (Rogers, 1951), in which he repeatedly advocates trying to adopt the client's frame of reference and trying to experience him as he is experiencing himself. This helps the therapist to avoid diagnostic evaluations -- labeling the client's behavior from the therapist's own frame of reference. A reasonably concise definition of the understanding role comes from Rogers' discussion of the proper role of the group leader (psychotherapist) in group therapy.

The group-centered leader tries . . . to adopt the internal frame of reference of the other person, to perceive what the other person perceived, to understand what is in the central core of the speaker's conscious awareness -- in a sense to take the role of the other person. (1951, pp. 351-352)

He explains that this idea is complemented by one from Ichheiser (1949, republished 1970) regarding the source of misunderstanding in interpersonal relations. Ichheiser attributes many misunderstandings to lack of awareness of the difference between communications as expressed and as impressed. Expression and impression can be reasonably accurately translated by the familiar communication model terms sending and receiving, respectively (Ichheiser, 1970, p. 16). He explains that the misunderstandings are due to a lack of pre-established harmony between impression and expression. The absence of such harmony is due to the fact

that sociocultural factors intervene to create differences between expression of a message and the impression or perception of its meaning which is aroused in the perceiver. The only way to overcome this problem is constant awareness on the part of the perceiver of the lack of correspondence between expression and impression.

Rogers suggests that the perceiver should try to compensate for the lack of correspondence between impression and expression by trying to understand the other person by looking at the world from his perspective rather than one's own. Rogers does not pretend that anyone can be fully successful at taking the role of the other, but points out that the attempt to do so will help to put the other person's behavior into a framework of meaningful and goal-directed behavior, when from one's own point of view his actions might seem disorganized, offensive, or even bizarre (Rogers, 1951, p. 494) and that it will help to eliminate any preconceived categories which the person is expected to fit (1951, p. 497).

If this process of understanding or trying to take the role of the other rather than trying to evaluate him were followed in forming impressions of others in everyday situations, it might change the character of the impressions formed. Rogers notes that understanding a client will lead to awareness of the contradictory elements in that person and an acceptance of all of those elements as

belonging to the person. Furthermore, since understanding another person helps to eliminate preconceived categories which he is expected to fit, an understanding impression might avoid another common source of misunderstanding cited by Ichneiser.

. . . we tend either to overlook all factors in the other person which do not fit into our preconceived scheme, or, else, we misinterpret all unexpectedly emerging factors in order to preserve our preformed misconceptions. (1970, p. 51)

Since understanding leads to recognition of contradictions one might expect the impressions to be more differentiated and organized at a higher level than evaluative impressions. To the degree that cognitive development level is associated with ability to recognize and integrate contradictory information about a person, persons of high complexity ought to be able to implement understanding better than persons low in complexity.

Relatively few studies have been done to explore the effects of understanding versus evaluative set on impression formation in non-therapeutic situations. Crockett, Mahood, and Press (1971) asked Ss to form an impression of a girl from seeing her give a speech on video tape. The Ss were instructed to either try to understand or to try to evaluate the girl in forming an impression. More personality inferences were made in the understanding instruction set and the effect of the understanding set was greater for high complexity Ss than for low complexity Ss. In the un-

derstanding instruction set, Ss liked the girl better and judged her more similar to themselves, more assertive, more understanding, more emotional, more sensitive, more intelligent and neater than Ss in the evaluative instruction set.

Another study (Delia, Press, and Crockett, 1973)<sup>2</sup>, which has been analyzed but not published, also induced understanding and evaluative sets with the addition of a control condition in which no set instructions were given. This study found a complexity by set interaction such that low complexity Ss showed essentially no differences across sets while high complexity Ss showed increasingly higher levels of differentiation and organization in the evaluative, no set, and understanding sets. This finding, along with the Crockett, Mahood, and Press (1971) finding that the understanding set was more effective for Ss high in complexity seems to indicate, in support of the theoretical prediction from Rogers, that persons low in complexity are not as able to implement the understanding set as those high in complexity.

Rogers (1951, 1952, 1961) says in a number of places and implies in others that if one attempts to understand another by trying to take that person's frame of reference, one will respond more favorably, or at least less unfavorably, than one would if an evaluative approach were taken. This seems to be supported by the Crockett, Mahood, and

Press (1971) finding that persons in the understanding set form more favorable impressions of others than those in the evaluative set.

Thus, it would appear that it is possible for people to adopt different perspectives for forming impressions of others and that the results of adopting understanding versus evaluative perspectives coincide with Rogers' predictions.

### Hypotheses

This study has three purposes. They are to find 1) the main effects and interaction effects of cognitive complexity, attitude similarity-dissimilarity, and instructional set on the favorability and other attitudinal aspects of impressions formed of strangers; 2) the main effects and interaction effects of cognitive complexity, attitude similarity-dissimilarity, and instructional set on the differentiation and organization of impressions formed of strangers; and 3) whether other factors besides attitudinal similarity-dissimilarity affect attraction as measured by Byrne.

To this end, three general hypotheses will be posited along with several sub-hypotheses relating to each. The sub-hypotheses are given to make more precise predictions with regard to the variables included in the general hypothesis to which they pertain. They will be numbered 1a,

lb, and so on for clarity of future references. In addition, a few hypotheses will be posited which cannot be included under one of the general hypotheses but which can give information of interest about impression formation and/or attraction and which can be tested with information already gathered for the study.

#### Favorability of Attitudes toward the Other Person

The first general hypothesis is that there will be differences in favorability and other attitudinal aspects of impressions which will be related to differences in attitude similarity, instructional set, and cognitive complexity. Several specific predictions will be made.

- 1a. Subjects will form more favorable impressions of similar than of dissimilar stimulus persons.

This hypothesis has been supported in many other studies. It is included here because this study will serve as a test of the hypothesis outside of the group which posed it. If it is supported in this study, the finding will add to the generality and strength of the conclusions in favor of it.

- 1b. Subjects will predict more behavioral differences between themselves and dissimilar others than between themselves and similar others.

This is a straightforward, common-sense hypothesis. If Ss perceive that a stimulus person is dissimilar to themselves, they ought to predict that he will behave in a dissimilar fashion.

- lc. Subjects will form more favorable impressions of others under instructions to understand than under instructions to evaluate.

Consistent with Rogers' (1951, 1952, 1961) prediction, Crockett, Mahood, and Press (1971) found that Ss instructed to understand were more favorable toward a stimulus person than Ss instructed to evaluate. Since this is the only evidence to date, an additional test is in order to corroborate these findings.

- ld. Subjects will rate stimulus persons more inconsistent under instructions to understand than under instructions to evaluate.

This hypothesis is included as a test of Rogers' (1951) statement that when one person is trying to understand another he will see and accept the contradictions in the other person's personality and behavior. If this is true, it would lead Ss in the understanding condition to view the stimulus person as more inconsistent. However, since there may be a tendency to rate dissimilar persons as more inconsistent than similar ones, this effect may result in an instruction set by similarity interaction of some sort.

- le. Subjects will predict fewer dissimilarities, within similarity conditions, under instructions to understand than under instructions to evaluate.

Crockett, Mahood, and Press (1971) found that Ss in the understanding set judged the stimulus persons to be more like themselves than Ss in the evaluative set. Thus,

while it is only common sense to predict that Ss will predict fewer dissimilarities for a similar than for a dissimilar person, the understanding set ought to mitigate this effect to some extent.

- lf. Subjects high in complexity will predict fewer differences between themselves and others than low complexity subjects.

This hypothesis may actually hold true only for dissimilar stimulus persons, since most Ss may predict little or no difference between themselves and similar others regardless of complexity level. Thus, this prediction may only be supported by a similarity by complexity interaction rather than as a main effect. The prediction is made because of the tendency of high complexity Ss to give bivalent, rather than univalent impressions (Mayo and Crockett, 1964; Crockett, 1965), and to entertain the possibility of unbalanced relationships among their acquaintances. This tendency may lead high complexity Ss to view dissimilar persons in a bivalent way -- forming impressions citing some dissimilarities and some similarities. The perceived similarities may reduce the importance of the dissimilarities so that high complexity Ss will see less substantial difference between themselves and the stimulus person and, therefore, predict fewer behavioral differences.

- lg. There will be a complexity by similarity interaction such that high complexity subjects will have a more favorable impression of dissimilar others than low complexity subjects.

The reasoning for this hypothesis is the same as that for hypothesis 1f. In addition, high complexity Ss are likely to be able to fit disagreements into rational explanations of the stimulus person's personality and thus find the perception less unbalanced than a low complexity S might. This factor could account for increased favorability toward dissimilar others whether or not hypothesis 1f holds true.

#### Differentiation and Organization of Impressions

The second general hypothesis is that there will be differences in differentiation and organization of impressions which will be related to differences in attitude similarity, instructional set, and cognitive complexity. Again, several specific predictions are made.

- 2a. Impressions of similar persons will be more highly differentiated than those for dissimilar persons.

According to the frequency of interaction hypothesis, Ss ought to show higher differentiation for liked than disliked persons since they would have had greater contact with liked persons as a category. It has been amply demonstrated that Ss like attitudinally similar stimulus persons better than attitudinally dissimilar ones. Thus, if this hypothesis receives support, it would be an indication that even when the amount of information about a specific liked or disliked person is controlled, Ss will show more complexity

with regard to the category with which they are more familiar and, therefore, about which they have a more extensive construct system. Such a result could be interpreted as support for the hypothesized role of frequency of interaction or contact in building a construct system.

- 2b. Differentiation and organization of impressions will be higher in the understanding than in the evaluative instruction set.

In the Crockett, Mahood, and Press (1971) study differentiation and organization were higher in the understanding instruction set and Delia, Press, and Crockett (1973) found that high complexity Ss differentiated and organized their impressions at a higher level in the understanding set. There are several factors which, alone or in combination, could account for this effect. First, the understanding set should lead to more favorable impressions. As explained above, more favorable impressions should lead to greater differentiation. But two other reasons for this prediction are more closely allied to the nature of the cognitive sets which the understanding and evaluation modes of reacting to another evoke. Rogers (1951) points out that in the understanding set, people are more likely to recognize contradictory information about the other person. If this is true, it should raise the levels of both differentiation and organization. He also says that in the understanding set these contradictions will be accepted as a part of the person. If this is true, then to the degree

that the acceptance prompts a person to go beyond simple recognition of the contradiction, it will raise the level of organization. A second reason for heightened organization is that the understanding set is, in essence, an instruction to take the role of the other. The ability to take the role of the other is developmentally more advanced than taking one's own perspective (Piaget, 1928, republished 1969). More directly related to the measures of organization to be used in the analyses, however, is the fact that when one tries to take the role of the other, one tries to construe the situation so that it will not be discordant. Thus, in trying to take the role of the other, motivations and other reasons for apparently contradictory beliefs and behaviors will be more likely to be given than when one is taking one's own perspective. To the degree that one is prompted to take the role of the other when he otherwise might not have, the organization score for the impression will be likely to be higher.

- 2c. There will be a set by complexity interaction such that the effects of the understanding set on differentiation and organization will be greater for high complexity than for low complexity subjects.

Such a set by complexity interaction was found by Delia, Press, and Crockett (1973), and by Crockett, Mahood, and Press (1971). It is probably due to the fact that high complexity Ss are better able to deal with the contradictions in personality and behavior of which one becomes more aware

when the tendency to integrate only that material which fits a previous impression is discarded. While the understanding instructions may cause low complexity Ss to attempt to take all the information into account, their cognitive systems may not be well enough organized to enable them to do so very effectively. Thus, it may raise their levels of differentiation and organization somewhat, but not as much as for high complexity Ss.

- 2d. Subjects will attribute motivation to resolve inconsistency in a stimulus person more often in the understanding than in the evaluative set.

This hypothesis is included for two reasons. First, if effects are found for instructional set, it is possible that they will be due to Ss having perceived the understanding set as an instruction to "psychoanalyze" or otherwise explain the stimulus person's behavior. This would lead to increased use of motivation to resolve any inconsistencies in the stimulus person. So, support for this hypothesis could help to explain any effects found for instructional set. The second reason for including this hypothesis is to provide an a priori test of it. It was tested as a post-hoc hypothesis by Delia, Press, and Crockett (1973) but has not received corroborative testing.

- 2e. The difference in organization and differentiation among the instructional sets will be greater when the stimulus person is dissimilar to the subject than when he is similar.

This hypothesis again predicts a set by similarity

interaction. This prediction is based on the fact that Ss are more complex with regard to liked than disliked persons. Presuming that Ss do, as Byrne has repeatedly found, like the similar stimulus persons better, they ought to be more complex with respect to the similar persons. Dissimilarity may act as a depressant of cognitive functioning, whether because of unfamiliarity of the category or desire to avoid undue cognitive contact with the category. Thus, any factor which would tend to increase the level of cognitive functioning should have a comparatively greater effect on those Ss whose level of functioning has been depressed than on those who are functioning near their maximal level.

- 2f. Subjects high in complexity will give a smaller proportion of egocentric impressions than subjects low in complexity.

This prediction comes from the orthogenetic principle that a high degree of differentiation and hierarchical integration denotes a higher level of cognitive functioning than less differentiation and relative globality. Piaget (1955) demonstrates that one of the primary characteristics of cognitive development in the child is the gradual diminution of egocentric modes of thought. Werner (1961) also speaks of egocentric thought as a concomitant of lack of cognitive development.

The conceptual relations created by the highly advanced mentality are intended to be objective, impersonal, abstract, and generally applicable. It is these characteristics which are not childlike. They are alien to the very nature of syncretic

thought, in which relations are fashioned to accord with an egocentric standpoint and all its interests and thus pinned down to the level of concrete perception and action.

"Right" and "wrong," for example, which with us apply to objective relations, are for the most part conceived by the child in a highly concrete and egocentered, personal sense. (1961, p. 312)

Scarlett, Press, and Crockett (1971) have demonstrated that as children develop, the constructs they use in forming impressions become less egocentric. Thus, it seems reasonable to hypothesize that adults functioning at different developmental levels should show varying levels of egocentricity.

2g. Subjects high in complexity will use motivation to resolve inconsistency in a greater proportion of cases than will subjects low in complexity.

This prediction is made because, to the degree that high complexity Ss are more able to recognize and resolve inconsistency, they will naturally use motivation to some degree. But, the reason to suppose that they will use motive ascription as a mode of resolution more frequently than low complexity Ss comes from the fact that since low complexity Ss function at a lower level than high complexity Ss, they ought to use modes of resolution which are developmentally lower, when they use them at all. Since motive ascription is a higher level mode of resolution than, for example, truncation of situation, high complexity Ss ought to use it more frequently than low complexity Ss.

Prediction of Attraction

The third hypothesis is that a regression analysis will show that attraction is predicted by factors in addition to those used by Byrne. Specifically, it is expected that both complexity and instructional set will enter into the prediction equation for attraction, using Byrne's own measure, because the understanding set should foster attraction even when the stimulus person is dissimilar to the S and because high complexity, as discussed above, should foster greater tolerance for disagreement and/or a higher threshold of perception of disagreement. Thus, all three of these factors, rather than just similarity and dissimilarity of the stimulus person should enter into the prediction of attraction as measured by Byrne's two item summed attraction measure. This prediction contradicts a finding by Baskett (1968) which showed that cognitive complexity did not make a significant difference in attraction for similar and dissimilar persons. However, he used a different measure of cognitive complexity than the one used in this study, so his findings may not be applicable to cognitive complexity as it is defined here.

The fourth hypothesis is that knowing someone like the stimulus person will be positively correlated with differentiation. This is a test of the frequency of interaction hypothesis. If the frequency of interaction hypo-

thesis is correct, then knowing someone like the stimulus person should lead to higher differentiation because of greater familiarity of the category. Therefore, differentiation of the impression of the stranger ought to be significantly positively correlated with knowing someone like him.

The fifth hypothesis is that there will not be a significant correlation between liking the stimulus person and desire to meet and converse with him. This hypothesis is made because of the possibility that Byrne's measure of liking may not be predictive of future interaction. Future interaction may occur because of liking, but it may be equally well predicted by the amount of interest the stimulus person holds for the Ss for such other reasons as desire to find out what makes a person who seems strange the way he is, the thought that any discussion might be more interesting if the participants disagree on some important topics, or simply because the Ss think that exposure to people of differing ideas and backgrounds is more interesting. Byrne uses the terms "liking" and "attraction" more or less interchangeably. It may be, however, that liking is only a component of attraction and that interest in the person for some other reason is also a part of attraction. If this is the case, then there may be no constant directional relationship between predicted liking and predicted

desire to interact with the person at some future date.

The sixth hypothesis is that average attitude strength will be positively correlated with liking for similar stimulus persons and disliking of dissimilar stimulus persons. This prediction is made because a person who holds an attitude strongly may perceive a person who disagrees with him even a little bit as attitudinally dissimilar and because Byrne's methodology is such that a S who expresses a strong feeling about a topic is more disagreed with than a S who has a relatively neutral attitude about the topic. In Byrne's methodology, disagreements are defined as mirror image responses to the S's. This means that if a S is very much in favor of a certain thing, then a disagreeing attitude will have his stimulus person strongly oppose it; while if the S is only slightly in favor, a disagreement will give him a stimulus person who is only slightly opposed. In addition to the difference in amount of disagreement, there may be differences in perception of disagreement which accompany strongly held attitudes. The S who feels relatively neutral on the side of being slightly in favor on an issue may not have invested much of his time and emotional energy in committing himself on that topic and, therefore, may not feel that a person who is relatively neutral on the side of being against on the same issue really disagrees with him. The S with a strongly held attitude, however, may have made enough commitment invest-

ment that he will feel that a person who is only one step less strong in his attitude is disagreeing with him. Thus, similar persons would be liked better and dissimilar ones would be liked less by Ss with higher attitude strength.

The seventh hypothesis is that average attitude strength will be higher for high complexity Ss than for low complexity Ss. This prediction is made on the basis of Nidorf and Argabrite's (1970) finding that high complexity Ss tend to make more extreme judgments on semantic differential scales. If this is the case, then high complexity Ss ought to hold their attitudes more strongly than low complexity Ss. In addition, one might expect high complexity Ss to respond more extremely on the measures of attitude toward the stimulus person, since these will be asked as bipolar questions.

In the second chapter, the design and procedures of the study will be presented. In the third chapter, the results will be reported, and in the fourth chapter, the results will be discussed along with their implications for theory and future research.

## CHAPTER II

### METHOD

To test the hypotheses, an experiment was performed using a 2 x 3 x 2 factorial design. The independent variables were similarity of a stimulus person to the S, instructional set, and cognitive complexity of the S.

#### Procedures

##### Subjects

The Ss were 145 students enrolled in introductory psychology in the Spring and Summer semesters, 1973, at the University of Kansas. They participated to fulfill a course requirement. Seventeen of the Ss participated during the Summer, and the remainder participated in the Spring. An attempt was made to recruit equal numbers of male and female Ss, but this was not successful. The final sample contained 49 females and 96 males. They were seen in small groups of three to six Ss each. Each S had two appointments about one week apart. Two Ss were dropped from the analysis because of refusal to complete all the measures.

##### Design of the Experiment

There were two levels of similarity, three levels

of instructional set, and two levels of complexity. The experiment, as originally planned, had twelve cells with twelve Ss in each. The number of males and females in each cell was to have been approximately equal. However, because of a shortage of available Ss, especially female Ss, and the necessity of having each small group of Ss given the same instructional set, it was not possible to obtain equal numbers in each cell. Cell sizes ranged from eight to sixteen. All but one cell had ten or more Ss. The Ss were randomly assigned to conditions with the reservation that all Ss in a given experimental session would have the same instructional set.

#### Questionnaires

Three questionnaires were used in this study. These were the Four Role Category Questionnaire, a Self-Description Questionnaire, and a Post-Questionnaire.

#### Four Role Category Questionnaire

The Four Role Category Questionnaire (Crockett, 1965) is a measure for assessing cognitive complexity. The S was asked to think of four persons with whom he was acquainted -- a liked male, a disliked male, a disliked female, and a liked female, and a disliked female. All of these people were to be of approximately the S's own age. After being given a few minutes to think of four people and to mentally compare and contrast them, the S was asked to describe each of them

as fully as possible. About three minutes were allowed for the S to write each of the descriptions. A copy of the questionnaire appears in Appendix B.

#### Self-Description Questionnaire

The purpose of this measure was to gather data about the S's attitudes for use in the similarity manipulation. The questionnaire contained a 25 item adaptation of the Byrne et. al. (1971) and Press (1972)<sup>3</sup> attitude questionnaires and an eight item situational behavior questionnaire developed by the author. A copy of the questionnaire appears in Appendix C.

At the top of the first page Ss were asked to give some demographic information such as age, year in school, and major. Following that, 25 attitude topics were listed. These topics were chosen because of current interest and importance to college students and dealt generally with the opinions and values of the respondents. Below each topic was a list of six statements pertaining to it. These statements indicated graduated strengths of agreement from strongly agree to strongly disagree on a six point scale -- e.g., "I strongly agree," "I agree," "I slightly agree," "I slightly disagree," and so on. The S was asked to check the one statement which most nearly expressed his opinion with regard to each topic.

The situational behavior portion of the question-

naire gave eight hypothetical behavioral situations. For each one, there were three possible behaviors listed. The S was asked to choose the behavior that he thought was most like what his own behavior would be in that situation.

#### Post-Questionnaire

This questionnaire was used to gather dependent measures. A copy appears in Appendix D. The cover page contained the instructions to induce the instructional set. The second page reiterated the set instructions and gave space for the S to write his impression of the stranger. Then there were ten questions asking the S's attitudes toward the stranger. Finally, the S was asked to complete the situational behavior questionnaire, described above, as he thought the stranger would.

#### Experimental Sessions

##### First Session

When Ss reported to the first session they were told that the study was interested in learning how people describe people, and that in the two sessions they would be asked to describe several different people, including themselves.

They first completed the Four Role Category Questionnaire under standard instructions. They were allowed approximately three minutes to complete each of the four descriptions. Then E passed out the Self-Description Ques-

tionnaire and instructed the Ss to first fill out the demographic information requested, second to check, for each of the topics listed, the statement which most nearly expressed their opinions with regard to that topic, third to pick the five of the 25 topics that seemed most important to them and to indicate their choices by placing a mark in the margin by the question, and finally to complete the situational behavior questionnaire. The E emphasized that all questions needed to be answered for the data to be of any use. The Ss were allowed to work at their own paces on the Self-Description Questionnaire. When they were finished, the Ss made appointments for a second session -- the same time the following week in most cases -- and were free to go. The first session lasted about 40 minutes.

### Second Session

At the second session, Ss were reminded of the purpose of the study and told that in this session E was going to ask them to describe a stranger about whom they would be given some information. Then E told them that over the past year or so, many students had completed an opinion questionnaire and that E had picked a person from this group of students for each S who was of the same sex as the S and who was matched as closely as possible for age, major, and year in school. Then E passed out questionnaires, purported to have been filled out by the stranger, which were

really specially constructed to maintain a specified level of attitude similarity with the S. The E also gave out the Post-Questionnaire at this time. Then E went over the instructions on the cover sheet of the Post-Questionnaire. These included the instructions for the understanding, evaluative, or control set. The Ss were given six minutes to study the stranger's questionnaire. At the end of that time, E instructed the Ss to turn over the cover page of the Post-Questionnaire. The E read over the instructions for writing down the impression of the stranger, which included a repetition of the set instructions, with the Ss. They were given five minutes to write their impressions. Then E went over the instructions for the remainder of the questionnaire. The Ss were allowed to complete this part of the questionnaire at their own speeds. When everyone was finished, Ss were debriefed, given their credits and dismissed. The second session lasted approximately 20 minutes.

## Variable Manipulation and Measurement

### Independent Variables

Of the three independent variables, two -- similarity and set -- were manipulated. Complexity was used as a randomized blocks factor.

### Similarity

There were two levels of similarity. In the similar

condition, the S received a questionnaire, purported to have been completed by another person, in which 80 per cent, of the items, randomly selected, were answered exactly as the S had answered them in the first session of the experiment, while 20 per cent were mirror images of the S's opinions. In the dissimilar stranger condition, the proportions of agreement and disagreement were reversed so that the S was agreed with on only 20 per cent of the issues. These percentages of agreement and disagreement were chosen on the basis of previous usage by Byrne (1971). In all cases, the demographic information at the top of the questionnaire was similar to what the S had given in the first session.

Preparation of the stranger questionnaires. The stranger questionnaires which the Ss received consisted of the 25 attitude items from the Self-Description Questionnaire. Each S was assigned randomly to either the 80 per cent or the 20 per cent agreement condition. The stranger's questionnaire was then completed individually for each S by randomly selecting one of the S's five most important topics for either agreement (in the 20 per cent condition) or disagreement (in the 80 per cent condition). Twenty per cent of the remaining topics were randomly chosen for either agreement or disagreement. Thus, one important and four less important topics were disagreed or agreed with in the 80 per cent and 20 per cent agreement conditions,

respectively.

For all Ss, however, the topic "Belief in God" was checked "I believe that there is a God." This was done because Byrne (1971) notes that in several of his group's studies, non-belief in God on the part of the stranger tended to cause responses to deviancy from social norms rather than to dissimilarity. When a S had indicated that he, himself, did not believe in God in the 80 per cent agreement condition or when a S in the 20 per cent agreement condition had indicated he did believe in God, this item was counted as one of the four less important items for agreement or disagreement. This was done not because ~~belief in God is an unimportant topic, but because~~ almost all Ss indicated that they believed in God, whence counting the item as the important topic would have considerably biased the protocols.

In order to lend realism to the questionnaires, the demographic information was completed on the stranger questionnaires and the space where the name would have appeared was scissored out. In most cases, the demographic information for the stranger was an exact replication of the information given by the S. In a few cases, however, where exact duplication would have been likely to lead to the conclusion that the questionnaire was phony, variations in age or major were used. For example, a 52-year-old junior in education received a questionnaire attributed to a 40-year-

old stranger, also in education; a female in mechanical engineering was matched with a female in architecture; and a male in nursing was matched with a male in physical therapy. In every case, the demographic information was contrived so that the S would perceive the stranger to be quite similar to himself with regard to these characteristics. Several colors of pens and styles of checks and handwriting were used in preparing the questionnaires in a further attempt to make them seem realistic.

#### Instructional Set

There were three sets of instructions. In the understanding set, Ss were told to try to get an understanding of the stranger whose questionnaire they studied. They were told to try to determine something about the kind of person the stranger was and to try to develop some explanation for his beliefs. In the evaluation set, Ss were told to try to form an evaluation of the stranger using whatever standards they and their friends usually use to determine whether they care for someone. The third set was a control condition in which Ss were told only that they should try to form an impression of the stranger.

In all of the set manipulation instructions, an effort was made to involve the Ss in the task so that there would be as little effect of the artificiality of the experimental situation as possible. The Ss were told to im-

agine that a friend who lived in another town needed to know about the stranger and that they were trying to form an impression to write to the friend. This was included in the instructions regardless of the set condition. The complete instructions appear in Appendix E.

### Cognitive Complexity

The Ss were divided into high and low complexity groups at the median of scores on the Four Role Category Questionnaire (Crockett, 1965), described above. The questionnaires were scored by counting the number of interpersonal constructs used in each of the four descriptions and summing the four numbers. A second scorer scored a random selection of the questionnaires to determine the reliability of the scoring. The correlation between the two scorers was .94. The median score for the entire sample was 37.

While the Four Role Category Questionnaire actually measures only differentiation, it has been shown to be significantly correlated with organization of stranger impressions (Crockett, 1965). Thus, it provides a simply administered method of dividing Ss into groups based on the complexity of their cognitive construct systems.

### Dependent Variables

A number of dependent variables were analyzed. The major ones were differentiation and organization of the stranger impressions, liking, and number of behavioral dif-

ferences predicted. In addition, each attitude toward the stranger question was scored separately, the impressions were scored for motivation and egocentricity, and an attitude strength measure was computed for each S.

#### Differentiation and Organization

Differentiation of the stranger impression was scored in a manner similar to the scoring for the Four Role Category Questionnaire. It was defined by the total number of constructs used in describing the stranger.

The organization of the stranger impressions was scored according to a method developed by Press (1972), described in Chapter I, which allows for scoring of recognition of variability of behavior or personality, attribution of motivation, and unification of the variable aspects of the impression through explanation. Progressively higher organization scores are given for recognition of variability, attribution of motivation, relating discrete parts of the impression to one another, and using an underlying reason or set of reasons to account for all the conflicting pieces of information in the impression. A second scorer scored all of the impressions for organization. The correlation between scorers was .85. After the two scorings were completed, the scorers resolved differences of greater than one step and substituted the resulting score as the organization score to be analyzed.

### Liking

Three measures of liking were obtained. One was the response to the question, "How much do you think you would like this person?" A second was Byrne's liking measure which consisted of the sum of the liking question, just described, and a question which asked the S to rate how well he could work with the stranger in a discussion group. The third measure was the sum of all ten attitude toward the stranger questions. Each of these questions, which were answered on a seven-point bipolar scales, was scored with the negative pole always counted as one and the positive pole as seven. In addition, each of these questions was analyzed separately.

### Number of Behavioral Differences

The situational behavior questionnaire was scored by counting the number of differences between the S's prediction of his own behavior and his prediction of the stranger's behavior.

### Motivation and Egocentricity

The stranger impressions were also scored for use of motivation and for egocentricity. Each impression was given a motivation score of one, two, or three, depending upon whether it did not include any motivational attributions, contained motivational attributions which were not used to resolve inconsistencies or variabilities, or contained

motivational attributions which were used in resolving inconsistencies.

The impressions were also given a score of one, two, or three for egocentrism. A score of one indicated that the S had used major egocentric themes in his impression such as repeated reference to the stranger as compared to himself and his group of friends in concrete situations. A score of two indicated that the S had used minor egocentric mentions, and only one or two of those, in his impression -- e.g., "I think I would like this guy." An egocentricity score of three indicated that there were no egocentric references in the impression.

#### Attitude Strength

Each S's attitudes on the Self-Description Questionnaire were scored for polarity on a three point scale. Strongly holding an attitude either for or against an issue was counted as three, holding the attitude moderately was counted as two, and slightly holding an attitude was counted as one. The strengths of the 25 attitudes were summed and averaged for each S to yield an average attitude strength score.

#### Data Analysis

Since the cell sizes were not equal, a harmonic n analysis of variance was performed on the dependent measures. Stranger differentiation, stranger organization,

the bipolar attitude questions about the stranger, the sum of the two questions which make up the Byrne liking measure, the total liking score, the number of behavioral differences, and average attitude strength were all analyzed -- a total of 18 analyses of variance.

Correlations of each variable with every other variable were computed. In this analysis, scores for each of the individual impressions on the Four Role Category Questionnaire, as well as the total score on the questionnaire, were included along with the scores discussed above.

A regression analysis was performed for each of the dependent measures using a stepwise multiple regression.

A stepwise-discriminant function analysis was also performed to determine the discriminating variables for groups above and below the mean on the Byrne liking measure; groups in the understanding, evaluative, and no set instructional sets; the six groups defined by the combinations of set and similarity; and groups above and below the mean on stranger differentiation.

The motivation and egocentricity scores were analyzed by chi-square tests since the predictions were in terms of frequencies of the categories in different cells of the design.

## CHAPTER III

### RESULTS

This chapter reports the results of tests for confirmation of the hypotheses and auxiliary analyses. Summary tables for all analyses of variance appear in Appendix F. The correlation table for the regression analyses appears in Appendix G.

#### First Hypothesis: Favorability of Impressions

The first hypothesis was supported in some parts and not supported in others. ~~The scores which were analyzed~~ as favorability scores included the ten attitude toward the stranger questions, the total liking score, the Byrne liking score, and the total number of behavioral differences predicted.

Hypothesis 1a, that Ss would form more favorable impressions of similar than of dissimilar stimulus persons, was supported. This is true for several measures. The Ss liked the similar stimulus persons more ( $F = 85.532$ ,  $df = 1/131$ ,  $p \leq .001$ ); their summed answers to the ten questions of attitude toward the similar stranger were more favorable ( $F = 70.232$ ,  $df = 1/130$ ,  $p \leq .001$ ); and their scores on the Byrne liking measure were more favorable ( $F = 84.736$ ,

df = 1/131,  $p \leq .001$ ). The means of these three measures appear in Table 1.

Hypothesis 1b, that Ss would predict more behavioral differences between themselves and dissimilar others was supported. Fewer behavioral differences were predicted for similar than for dissimilar others ( $F = 44.363$ ,  $df = 1/126$ ,  $p \leq .001$ ). The means were 2.88 and 5.04 differences predicted for similar and dissimilar strangers, respectively.

Hypothesis 1c was that Ss would form more favorable impressions under the understanding than the evaluative set. There was no evidence in support of this hypothesis for any of the liking measures. A more favorable judgment was made with regard to intelligence in the understanding than in the evaluative set and in the evaluative than in the no set condition ( $F = 4.120$ ,  $df = 2/130$ ,  $p \leq .05$ ). There was also a similarity by set interaction on the intelligence question due to equally favorable intelligence judgments for similar persons in both the understanding and the evaluative sets. The means, given in Table 2, show that in the no set condition, ratings for similar persons were much lower than in the other two sets, while for dissimilar persons, the rating for the no set condition was between those for the understanding and evaluative sets, with Ss giving the more favorable rating in the understanding set. There was also a similarity by set interaction for judgments of friendliness, ( $F = 3.198$ ,  $df = 2/130$ ,  $p \leq .05$ ). The

TABLE 1

Mean Favorability Scores for Similar and Dissimilar Strangers on Three Measures

		Similarity	
		Similar	Dissimilar
Measure	Liking Question	5.24	3.36
	Byrne Liking	10.74	7.17
	Total Liking	50.65	39.07

TABLE 2

Similarity X Set Interaction

Mean Intelligence Ratings

		Set		
		Understanding	Evaluative	No Set
Similarity	Similar	5.05	5.10	4.18
	Dissimilar	4.54	3.77	4.12

means, shown in Table 3, indicate that this effect was due to rating similar persons most friendly in the evaluative set and dissimilar persons least friendly in that set. Thus, the results are far from clear enough to reach any conclusion with regard to this hypothesis.

Hypothesis 1d predicted that Ss would view the stimulus person as more inconsistent under instructions to understand than under instructions to evaluate. This effect was not significant and the differences between the means is opposite the prediction. The means were 4.06, 3.47, and 3.68 for the understanding, evaluative, and no set conditions, respectively. Higher scores indicate more perceived inconsistency.

Hypothesis 1e predicted that Ss would predict fewer behavioral differences, within similarity conditions, in the understanding than in the evaluative set. This hypothesis predicts a significant similarity by set interaction for behavioral differences. This interaction was significant ( $F = 3.827$ ,  $df = 2/126$ ,  $p < .05$ ), but the means, given in Table 4, showed that the differences were in the predicted direction only for dissimilar stimulus persons. For similar stimulus persons, the fewest predictions of dissimilarity occurred in the evaluative set. Thus, this hypothesis was only partially supported. The prediction holds true only when the S judges a dissimilar person.

TABLE 3

Similarity X Set Interaction  
Mean Friendliness Ratings

		Set		
		Understanding	Evaluative	No Set
Similarity	Similar	5.15	5.35	5.00
	Dissimilar	4.67	3.64	4.32

TABLE 4

Similarity X Set Interaction  
Mean Number of Behavioral Differences Predicted

		Set		
		Understanding	Evaluative	No Set
Similarity	Similar	3.03	2.28	3.34
	Dissimilar	4.31	5.67	5.15

Hypothesis 1f was that high complexity Ss would predict fewer behavioral differences between themselves and the stimulus person than low complexity Ss. The main effect for complexity on the number of behavioral differences predicted approached significance ( $F = 3.807$ ,  $df = 1/126$ ,  $.05 \leq p \leq .10$ ). However, the difference in the means was opposite the predicted direction. Low complexity Ss predicted fewer differences than high complexity Ss, with means of 3.65 and 4.28, respectively. Thus, this hypothesis was not only not supported, the findings approached significance in the opposite direction.

Hypothesis 1g was that there would be a complexity by similarity interaction such that high complexity Ss would like dissimilar stimulus persons more than low complexity Ss would. This hypothesis was not supported by significant interactions for any of the three liking measures -- the liking question, the Byrne liking measure, or the sum of the ten attitude toward the stranger questions. Nor was the interaction significant for any individual question. It approached significance for perceived similarity ( $F = 2.669$ ,  $df = 1/131$ ,  $.10 \leq p \leq .20$ ), with high complexity Ss perceiving similar persons as more similar and dissimilar persons as more dissimilar than low complexity Ss. Thus, even this question did not show results in the predicted direction.

Additional Findings About Favorability of Impressions

Main effects for similarity. The similar stimulus persons, not surprisingly, were perceived by the Ss as being more similar to themselves ( $F = 100.267$ ,  $df = 1/131$ ,  $p \leq .001$ ); better adjusted ( $F = 41.391$ ,  $df = 1/131$ ,  $p \leq .001$ ); more desirable to meet ( $F = 54.226$ ,  $df = 1/131$ ,  $p \leq .001$ ); easier to work with in group discussion ( $F = 45.134$ ,  $df = 1/131$ ,  $p \leq .001$ ); more consistent ( $F = 4.917$ ,  $df = 1/131$ ,  $p \leq .05$ ); more intelligent ( $F = 11.595$ ,  $df = 1/130$ ,  $p \leq .001$ ); and friendlier ( $F = 20.248$ ,  $df = 1/130$ ,  $p \leq .001$ ) than the dissimilar stimulus persons. The means for these questions appear in Table 5.

Main effects for set. There was a main effect of set for ratings of intelligence ( $F = 4.120$ ,  $df = 2/130$ ,  $p \leq .025$ ). In the understanding set, the stimulus person was rated more intelligent,  $\bar{X} = 4.80$ , than in the evaluative set,  $\bar{X} = 4.44$ , and the person was rated more intelligent in the evaluative set than under no set,  $\bar{X} = 4.15$ .

Main effects for complexity. Complexity also had a main effect on ratings of intelligence ( $F = 5.515$ ,  $df = 1/130$ ,  $p \leq .05$ ). High complexity Ss rated the strangers as more intelligent,  $\bar{X} = 4.68$ , than low complexity Ss,  $\bar{X} = 4.24$ .

Interaction effects: Similarity by set. There were several similarity by set interactions for measures of favorability of the impressions. There was a similarity by set interaction for the question, "Do you think you could

TABLE 5

Mean Ratings of Similar and Dissimilar Strangers  
on Favorability Questions

	Similarity	
	Similar	Dissimilar
Perceived Similarity	4.94	2.50
Adjustment	5.20	3.81
Desire to Meet	5.56	3.65
Working with in a Group	5.50	3.81
Consistency	4.06	3.41
Intelligence	4.78	4.14
Friendliness	5.16	4.21

work effectively with this person in a group discussion?," (F = 3.187, df = 2/131,  $p < .05$ ). The means, which appear in Table 6, indicate that for similar persons, the rating was highest in the evaluative set, while for dissimilar persons it was lowest in that set.

There was also a similarity by set interaction for the Byrne liking measure (F = 3.554, df = 2/131,  $p < .05$ ). This was due to Ss liking the similar stimulus person most in the evaluative set and the dissimilar person least in that set. The means appear in Table 7.

Finally, there were similarity by set interactions for intelligence and friendliness ratings, already discussed with the results for hypothesis 1d.

Interaction effects: complexity by set. There was a significant complexity by set interaction for the question, "Do you think you could work effectively with this person in a discussion group?," (F = 5.197, df = 2/131,  $p < .01$ ). The means, given in Table 8, show that this was because high complexity Ss estimated highest effectiveness in the understanding set and lowest in the no set condition, while low complexity Ss did the reverse.

There was also a significant complexity by set interaction for the Byrne liking measure (F = 4.139, df = 2/131,  $p < .05$ ). From the means, given in Table 9, this appears to be due to the fact that high complexity Ss showed the

TABLE 6

Similarity X Set Interaction

"Do you think you could work effectively with this person in a discussion group?"

Mean Ratings

		Set		
		Understanding	Evaluative	No Set
Similarity	Similar	5.44	5.90	5.16
	Dissimilar	4.08	3.33	4.02

TABLE 7

Similarity X Set Interaction

Mean Byrne Liking Scores

		Set		
		Understanding	Evaluative	No Set
Similarity	Similar	10.59	11.40	10.23
	Dissimilar	7.69	6.37	7.45

TABLE 8

Complexity X Set Interaction

"Do you think you could work effectively with this person in a discussion group?"

Mean Ratings

		Set		
		Understanding	Evaluative	No Set
Complexity	High	5.15	4.80	4.04
	Low	4.37	4.43	5.14

TABLE 9

Complexity X Set Interaction

Mean Byrne Liking Scores

		Set		
		Understanding	Evaluative	No Set
Complexity	High	9.66	9.34	8.15
	Low	8.61	8.43	9.54

most liking in the understanding set, less in the evaluative set, and least in the no set condition; while low complexity Ss showed most liking in the no set condition, less in the understanding set and least in the evaluative set.

Interaction effects: complexity by similarity by set. There was a complexity by similarity by set interaction ( $F = 3.000$ ,  $df = 2/131$ ,  $p \sim .05$ ) for judgments of adjustment of the stimulus person. This interaction, the means for which appear in Table 10, is characterized by a difference in the evaluative set on high complexity Ss judging similar others when compared to high complexity Ss judging dissimilar others and low complexity Ss judging either similar or dissimilar others. The latter three groups showed a curvilinear effect across sets with judgments in the evaluation set lower than those for either of the other two sets. The high complexity Ss also showed a curvilinear effect across sets, but with the evaluative set associated with more favorable judgments than either of the other sets. Similarity also seems to have a greater effect for high complexity than low complexity Ss in the understanding and evaluative sets, but not in the no set condition. Favorability of judgment showed a greater drop for high complexity Ss in the understanding and evaluative sets than for low complexity Ss. This effect did not hold

TABLE 10

Complexity X Similarity X Set Interaction  
Mean Adjustment Ratings

		Set		
		Understanding	Evaluative	No Set
Similar	High	5.09	5.80	5.00
	Low	4.94	4.60	5.80
Dissimilar	High	3.67	3.33	4.20
	Low	4.12	3.62	3.92

true in the no set condition, where the difference was greater for low complexity Ss.

### Summary

Favorability of the stranger impressions did not always behave as hypothesized. The most constant main effects were due to similarity of the stimulus person. Impressions of similar strangers were generally much more favorable than those of dissimilar strangers. Complexity and set had main effects only for intelligence ratings.

There were a number of interaction effects which affected favorability of impressions. The most frequent effect was due to the combination of similarity and set. Generally, Ss viewed similar strangers most favorably in the evaluative set and dissimilar strangers most favorably in the understanding set. Complexity also had some effects on favorability of impressions, entering into two two-way and one three-way interactions.

Thus, all three of the independent variables seem to have at least some effect on the favorability of impressions.

### Second Hypothesis: Differentiation and Organization of Impressions

None of the parts of the second hypothesis received support except for the general prediction that higher complexity would lead to higher differentiation and organiza-

tion of the stranger impressions. The scores analyzed were the differentiation and organization scores for the stranger impressions and motivation and egocentricity scores, which were presumed to be related to differentiation and organization.

There was a main effect of complexity for both differentiation ( $F = 17.772$ ,  $df = 1/131$ ,  $p \leq .001$ ) and organization ( $F = 3.777$ ,  $df = 1/131$ ,  $p \sim .05$ ). Both differentiation and organization of the stranger impressions was higher for high complexity Ss than for low complexity Ss. The means appear in Table 11.

Hypothesis 2a was that impressions of similar persons would be more highly differentiated than those for dissimilar stimulus persons. There was no evidence to support this hypothesis ( $F = 1.506$ ,  $df = 1/131$ ,  $p \leq .20$ ). The means of 9.37 and 9.99 for similar and dissimilar stimulus persons, respectively, go in the direction opposite the prediction, in fact.

Hypothesis 2b was that differentiation and organization of impressions would be higher in the understanding than in the evaluative set. There was no evidence to support this hypothesis for either differentiation or organization. The means for the understanding, evaluative, and no set conditions, respectively, were 9.43, 10.16, and 9.45 for differentiation, and 6.48, 6.43, and 6.76 for organization.

TABLE 11

Mean Differentiation and Organization Scores  
for High and Low Complexity Ss

		Complexity	
		High	Low
Measure	Differentiation	10.73	8.62
	Organization	6.98	6.13

Hypothesis 2c predicted a set by complexity interaction such that the effects of the understanding set on differentiation and organization of impressions would be greater for high than for low complexity Ss. This interaction did not even approach significance for either differentiation or organization. Thus, there is no basis for rejecting the null hypothesis with respect to this interaction.

Hypothesis 2d was that Ss would attribute motivation to resolve inconsistency in a stimulus person more often in the understanding than in the evaluative set. This hypothesis was tested by chi-square test which showed that differences between the conditions in frequency that motivation was used to resolve inconsistency were not significant, even though the proportions of use appeared to be quite different. Motivation was used to resolve inconsistency in 14.58 per cent of the cases in the understanding set, but in only 6.67 per cent of the cases in the evaluative set. There was little difference between the understanding and no set conditions, where the use of motivation was 12.24 per cent, in proportion of cases in which motivation was attributed to resolve inconsistency.

Hypothesis 2e predicted that differences in differentiation and organization for instructional sets would be greater for dissimilar than for similar stimulus persons. Support for this hypothesis would require a significant similarity by set interaction for both differentiation and

organization. The interaction was not significant for either dependent variable. It approaches significance for organization ( $F = 2.734$ ,  $df = 2/131$ ,  $p < .10$ ), but it is not supportive of the hypothesis since the interaction is due to a reversal in direction of difference between the understanding and evaluative sets with the range of the differences remaining almost exactly the same. The means for differentiation are shown in Table 12, and for organization in Table 13.

Hypothesis 2f was that high complexity Ss would give a smaller proportion of egocentric impressions than low complexity Ss. The proportions do not appear to be very different -- 14.67 per cent for high complexity Ss and 19.35 per cent for low complexity Ss -- and a chi-square test shows no significant difference between them.

Hypothesis 2g was that high complexity Ss would use motivation to resolve inconsistency in a greater proportion of cases than low complexity Ss. Again, the proportions are not very different from one another -- 13.16 per cent for high complexity Ss and 9.68 per cent for low complexity Ss -- and a chi-square test showed no significant difference between them.

#### Third Hypothesis: Byrne Liking Scores

The third hypothesis was that a regression analysis would show that attraction, as measured by Byrne's liking

TABLE 12

Similarity X Set Interaction  
Mean Differentiation Scores

		Set		
		Understanding	Evaluative	No Set
Similarity	Similar	9.08	9.90	9.13
	Dissimilar	9.77	10.41	9.77

TABLE 13

Similarity X Set Interaction  
Mean Organization Scores

		Set		
		Understanding	Evaluative	No Set
Similarity	Similar	5.70	6.90	6.54
	Dissimilar	7.27	5.97	6.97

measure, would be predicted by factors other than attitude similarity. A stepwise multiple regression analysis using 23 variables -- all independent and dependent variables except the two questions which make up the Byrne liking measure -- showed that total liking (T) ( $t = 7.05, p < .001$ ), perceived similarity (S) ( $t = 3.56, p < .001$ ), perceived morality (MO) ( $t = -4.17, p < .001$ ), desire to meet the stimulus person (MC) ( $t = 2.99, p < .01$ ), and disliked male differentiation (DM) ( $t = 2.70, p < .01$ ) all significantly predicted the Byrne liking score. The appropriate prediction equation is:

$$\tilde{Y} = .148T + .374S + .314MC - .413MO + .135DM + .268,$$

where  $\tilde{Y}$  is the Byrne liking score and the predictor variables are signified by the letters which follow the variable names in parentheses above. This combination of variables accounts for 70.25 per cent of the variance. The result indicates that actual similarity is not a significant predictor of the Byrne liking score when other predictors are available. This finding is in support of the hypothesis.

Two other findings about the Byrne liking scores corroborate the findings of the regression analysis. The first is the finding, already cited, that there were significant complexity by set and similarity by set interactions for the Byrne liking measure. The second is that when a stepwise discriminant function analysis was per-

formed to discriminate groups above and below the mean on the Byrne liking measure, the first discriminator extracted, which can be taken as the best single predictor, was perceived similarity.

#### Fourth Hypothesis

Hypothesis four was that reports of knowing someone like the stimulus person would be positively correlated with differentiation of the impression of the stranger. The correlation was insignificant,  $r = .024$ . Thus, it does not appear that knowing someone like the stranger facilitates differentiation. However, reports of knowing someone like the stranger were significantly correlated with total complexity score ( $r = .202, p < .05$ ).

#### Fifth Hypothesis

The fifth hypothesis was that there would not be a significant correlation between liking the stimulus person and desire to meet and converse with him. This correlation was, indeed, significant ( $r = .655, p < .001$ ). Thus, this hypothesis was not confirmed.

#### Sixth Hypothesis

The sixth hypothesis was that the average attitude strength would be positively correlated with liking for similar stimulus persons. This hypothesis was not supported ( $r = .023$ ).

### Seventh Hypothesis

The seventh hypothesis was that average attitude strength would be higher for high than for low complexity Ss. There was no evidence to support this hypothesis ( $F = 1.148, p > .20$ ).

### Relationships among Dependent Variables

Correlation and regression analyses showed some relationships among dependent variables which must be kept in mind when interpreting the data. The ten questions of attitude toward the stranger were intercorrelated with the exception of judgments of morality. Liking, perceived similarity, judgments of adjustment, desire to meet the stimulus person, and judgments of effectiveness in group discussion are all significantly correlated with all of the questions of attitude toward the stimulus person except judgments of morality. Knowing someone like the stimulus person does not correlate with judgments of morality, intelligence, or friendliness. Judgments of consistency do not correlate with judgments of either morality or friendliness. Judgments of intelligence do not correlate with morality judgments or with knowing someone like the stimulus person. Morality judgments do not correlate with any of the ten questions except judgments of friendliness. Table 14 shows intercorrelations of these questions and the significance levels for each.

TABLE 14

## Correlations among Attitude toward the Stranger Questions

Question	1	2	3	4	5	6	7	8	9	10
1. Liking	1.000	.249*	.698#	.635#	.655#	.626#	.366#	.372#	.050	.439#
2. Know some- one like		1.000	.233*	.350#	.200*	.265!	.330#	.089	.087	.091
3. Similar- ity			1.000	.602#	.566#	.583#	.321!	.217*	.016	.349#
4. Adjust- ment				1.000	.450#	.575#	.571#	.370#	.017	.386#
5. Desire to Meet					1.000	.539#	.197*	.348#	.125	.435#
6. Work with in a Group						1.000	.310!	.355#	-.079	.344#
7. Consis- tency							1.000	.199*	.041	.131
8. Intelli- gence								1.000	.180	.387#
9. Moral- ity									1.000	.258!
10. Friend- liness										1.000

\*p < .05, !p < .01, #p < .001

Stranger differentiation. Stranger differentiation was, as might be expected, significantly positively correlated with total complexity ( $r = .523, p \leq .001$ ), and with organization ( $r = .224, p \leq .05$ ). Differentiation of the impression also showed a correlation approaching significance with number of behavioral differences predicted ( $r = .194, p \sim .05$ ).

Impression organization. Organization of the stranger impression is not significantly correlated with total complexity ( $r = .181, p \leq .10$ ), but is, as was mentioned above, significantly correlated with differentiation of the stranger impression, although the absolute difference between the two correlation coefficients is small. It is also significantly negatively correlated with judgments of consistency ( $r = -.433, p \leq .001$ ), although not with actual similarity ( $r = .076, p \leq .10$ ). As might be expected, organization is positively correlated with use of motivation ( $r = .389, p \leq .005$ ).

Number of behavioral differences predicted. The number of behavioral differences predicted is positively correlated with total complexity ( $r = .207, p \leq .05$ ) and is significantly negatively correlated with all of the attitude toward the stimulus person questions discussed with the exception of knowing someone like the stimulus person and judgments of morality. It is also significantly negatively correlated with actual similarity ( $r = -.506, p \leq .001$ ),

with the Byrne liking measure ( $r = -.537, p < .001$ ), and with total liking ( $r = -.338, p < .005$ ).

Motivation and egocentricity. Attribution of motivation, besides being positively correlated with organization, was significantly negatively correlated with consistency ratings ( $r = -.205, p < .05$ ). Egocentricity of the impression does not correlate with any of the other dependent variables.

#### Best Predictors of the Dependent Variables

A stepwise multiple regression was performed for several of the dependent measures to determine what the best set of predictors was for each. Since any set of multiple predictors will predict a score better than a single predictor, the criterion for including a variable in the prediction equation was that its beta weight be significant by a t-test (Walker and Lev, 1953).

The best predictors for stranger differentiation were total complexity (C) ( $t = 7.34, p < .001$ ) and actual similarity of the stimulus person (AS) ( $t = -1.99, p < .05$ ). The prediction equation is:

$$\tilde{Y} = .167C - .864AS + 1.686,$$

where  $\tilde{Y}$  is the stranger differentiation score and the predictor variables are indicated by the letters which follow them in parentheses above. This combination accounts for 29.25 per cent of the variance.

The best predictors for organization were perceived consistency (PC) ( $t = -5.30, p \leq .001$ ), motivational attribution (M) ( $t = 4.42, p \leq .001$ ), liked female differentiation (LF) ( $t = 2.16, p \leq .05$ ), liking for the stranger (L) ( $t = 2.03, p \leq .05$ ), and attitude strength (A) ( $t = 2.09, p \leq .05$ ). The prediction equation is:

$$\tilde{Y} = -.588PC + 1.223M + .132LF + .261L + 1.487A + 1.420$$

where  $\tilde{Y}$  is the organization score and the predictor variables are indicated by the letters which follow them in parentheses above. This combination accounts for 35.07 per cent of the variance.

Perceived similarity was best predicted by the combination of perceived adjustment (PA) ( $t = 2.97, p \leq .01$ ), perceived intelligence (PI) ( $t = -2.16, p \leq .05$ ), number of predicted behavioral differences (BD) ( $t = -3.45, p \leq .001$ ), actual similarity (AS) ( $t = 4.19, p \leq .001$ ), and the Byrne liking score (BL) ( $t = 4.18, p \leq .001$ ). The prediction equation is:

$$\tilde{Y} = .267PA - .186PI - .176BD + 1.038AS + .214BL + 3.635,$$

where  $\tilde{Y}$  is the perceived similarity score and the predictor variables are indicated by the letters which follow them in parentheses above. This combination accounts for 64.34 per cent of the variance.

Perceived consistency was predicted by organization of the impression (O) ( $t = -4.60, p \leq .001$ ), perceived adjustment (PA) ( $t = 3.87, p \leq .001$ ), desire to meet the

person (MC) ( $t = -1.98$ ,  $p = .05$ ), perceived friendliness (PF) ( $t = -2.76$ ,  $p < .01$ ), and total liking score (T) ( $t = 3.80$ ,  $p < .001$ ). The prediction equation is:

$$\tilde{Y} = -.1970 + 422PA - .158MC - .284PF + .076T + 1.819,$$

where  $\tilde{Y}$  is the perceived consistency score and the predictor variables are indicated by the letters which follow them in parentheses above. This combination accounts for 49.17 per cent of the variance.

#### Summary

This study found that Ss like similar better than dissimilar others, regardless of the measure used, and that Ss predict more behavioral differences between themselves and dissimilar others than between themselves and others who are similar. Similarity did not seem to affect differentiation and organization of impressions.

The instructional set manipulations appeared to have mostly interactive effects. There was no effect on favorability of impression formed nor on differentiation or organization of the impression. However, set did interact with similarity in such a way that favorability was generally greater for similar stimulus persons in the evaluative set and for dissimilar persons in the understanding set.

Complexity had a main effect for differentiation and organization of the impressions. In addition, high complexity Ss predicted more behavioral differences between them-

selves and others, judged the stimulus persons more intelligent, and tended to know someone more like the stimulus person than low complexity Ss. There were significant complexity by set interactions for ratings of effectiveness in group discussion and for the Byrne liking measure.

The Byrne liking measure seems to be related to a more complex set of factors than just proportion of reinforcements given by similar attitude statements since it is more related to perceived than to actual similarity and since the scores appear to be different with different combinations of personality and presentation conditions.

## CHAPTER IV

### DISCUSSION

In this chapter the findings will be elaborated and attempts will be made to explain them. Implications of the findings and suggestions for future research will also be included.

#### Findings about the Hypotheses

##### Favorability of Attitudes toward the Other Person

The first general hypothesis was supported in parts and not supported in others. Differences in similarity of attitude were related to most of the significant findings. The one seeming exception, hypothesis 1e, achieved significance only through an interaction of similarity and set. Fewer behavioral differences were predicted in the understanding than in the evaluative set only for dissimilar persons.

Before one leaps to the conclusion that attitudinal similarity is the only variable governing favorability of impression, it is necessary to recognize the findings with regard to favorability of impression which this author did not have the prescience to predict. There were, as the

reader will remember, a number of similarity by set interactions which either reached or approached significance for the dependent variables which define favorability. Specifically, these interactions occurred for the Ss' judgments of desire to meet and converse with the stimulus person, effectiveness in group discussion, intelligence, friendliness, total liking, number of behavioral differences predicted, and the Byrne liking score. All of these interactions share one thing in common -- the most favorable judgments of similar stimulus persons and the least favorable judgments of dissimilar stimulus persons were made in the evaluative set for every interaction. Thus, instructional set does seem to play an important and consistent role in the favorability of impressions. The effect is just not one that was predicted.

The effect can be explained by the use of Newcomb's principle of autism of response. He defines autism in the following way: "We use the term autistic to indicate responses influenced by balance at the cost of accuracy. Contra-autistic refers to responses indicating both imbalance and inaccuracy. Realistic responses are accurate, whether or not balanced." (1961, p. 132) He cites empirical evidence to show that inaccurate judgments are more often autistic than contra-autistic. The results of the invocation of the evaluative set seem to indicate that this set

is an invitation to autistic judgment. Asking the S to evaluate a person appears to lead him to block the negative aspects of relatively similar others and to block the positive aspects of relatively dissimilar others. In other words, the evaluative set may not, as was reasoned earlier, yield a tendency to "sum up and throw out" but rather a tendency to polarize in accord with the predictions of autism. Thus, the evaluative set enhances consistency needs and the tendency to behave in accord with balance principles.

It should be kept in mind that this explanation does not disprove Rogers' claim that the understanding set leads to awareness of both the good and bad sides of a person's personality and causes the perceiver to take all the relevant information into account. In fact, the more logical result of seeing both good and bad rather than uniformly positive or negative aspects of a person's character would be the response that the Ss in this study showed rather than the ones which were predicted. In the understanding set, they gave less favorable impressions of similar people, toward whom they should have been favorably disposed, and more favorable impressions of dissimilar people, toward whom they should have been unfavorably disposed. In other words, the understanding set seems to have functioned as a force toward realism in the impressions. Seeing both good

and bad aspects ought to diminish the favorability effects of similarity and the unfavorability effects of dissimilarity. This is precisely what the understanding set seems to have done. So, rather than concluding that Rogers' predictions were wrong because the original hypotheses were not supported, it must be concluded that his description of the functioning of the sets is probably essentially correct.

It is hard to give an explanation for the workings of the no set condition. One would expect that if Ss have a style of forming impressions that tends toward evaluation or understanding, then the results of the no set condition would be clearly more like one or the other set or would lie in a position between the two. Unfortunately, the results are erratic so that any such simple conclusion is impossible. For Ss who received dissimilar stimulus persons, the no set condition means lie solidly between the means for the understanding and evaluative sets. For Ss who received similar stimulus persons, the no set condition means lie between the means in the understanding and evaluative sets in half the cases and below the means for both of the other sets in the other half. This difference in reaction to similar and dissimilar persons in the no set condition does not seem to be related to complexity, sex, or any other auxiliary data available from this set of Ss. So, while it is regrettable, the conclusion must be drawn that the dif-

ferences in reaction to the no set condition are uninterpretable, even by means of post hoc tests, from the available data. It is clear, however, that the original supposition that Ss in the no set condition would tend to form impressions by trying either to understand or to evaluate is not valid.

#### Differentiation and Organization of Impressions

No part of the second general hypothesis was supported. Consistent with earlier findings, differentiation and organization of the stranger impressions were found to be main effects of complexity.

Again, the most interesting results were unpredicted. Perceived inconsistency of the stranger was highly related to organization. Perceived consistency was also related to similarity -- dissimilar persons were perceived to be more inconsistent. This led to the post hoc hypothesis that since similar persons were perceived as more consistent, only those Ss with complex cognitive systems would organize impressions of similar persons at any higher than a minimal level. This would tend to remove any effects of set for impressions of similar persons. So, an analysis of variance was done using only those Ss who received dissimilar stimulus persons. This analysis indicated a significant main effect of set on organization ( $F = 3.579$ ,  $df = 2/65$ ,  $p < .05$ ) and no significant effect for com-

plexity ( $F = .994$ ,  $df = 1/65$ ,  $p \leq .50$ ). Combined with the earlier analysis of variance results which showed a main effect for complexity on organization, an interesting conclusion can be drawn. Two things can lead to higher organization of an impression -- high cognitive complexity and perceived inconsistency.

Perceived inconsistency, and therefore organization of impressions, will be higher when the stimulus person is different from oneself and one tries to understand the person. The means for organization across sets for Ss who judged dissimilar stimulus persons bear this out. Organization is higher,  $\bar{X} = 7.92$ , in the understanding than in the evaluative set,  $\bar{X} = 5.97$ . The conclusion drawn above, however, may be too simple because the differences among sets for Ss judging stimulus persons similar to themselves do show differences in organization across sets which approach significance. These differences are in the opposite direction -- organization is higher in the evaluative set.

Assuming that a  $p \leq .06$  interaction is a meaningful one, this set of findings leaves one a bit puzzled. It is easy enough to explain the differences in organization between similar and dissimilar persons as being due to lack of perceived conflict on which to base an integrated impression. But one would presume that the perceived conflict, and therefore, the organization of the impressions, ought to be higher in the understanding set for both simi-

lar and dissimilar stimulus persons. This enigma may be resolved by referring to the findings of a study by Meltzer, Crockett, and Rosenkrantz (1966). They found that Ss formed more highly organized impressions of others who held values congruent with their own than of others who held incongruent values. One can probably presume that similarity of attitudes would affect organization in about the same way as similarity of values. Earlier in this chapter it was argued that, with regard to favorability, the Ss would perceive similar others to be most similar to themselves in the evaluative set and dissimilar others to be least dissimilar in the understanding set. Thus, if similarity has an effect on organization, one would predict that for Ss judging similar stimulus persons, organization would be highest in the evaluative set, and that for those judging dissimilar others it would be highest in the understanding set. This is precisely the result which was obtained except that it must be remembered that the differences with regard to similar stimulus persons did not reach significance, primarily due to extremely large variances.

However, this explanation begets yet another puzzle. How is it that, if perceived inconsistency seems to be necessary to organizing an impression at a higher level, that the highest level impressions of similar stimulus persons are achieved in the evaluative set, which has already been described as working to eliminate perceived inconsis-

tency? This problem can be resolved by taking the position that high complexity or perceived inconsistency with some recognition of similarity to the S or a combination of the two can lead to a highly organized impression. In the case of impressions of similar persons, it appears to be a combination of both, but complexity had the comparatively greater and only significant main effect. In the case of dissimilar stimulus persons the results seem to indicate that perceived inconsistency with some recognition of similarity was more important. There was a difference of 1.130 in the mean organization scores of high and low complexity Ss forming impressions of similar persons but a difference of only .592 for those judging dissimilar persons.

All of this suggests a principle of impression formation. Some perceived similarity seems to be necessary to organization of impressions. Once this is available, impressions will be more highly organized when either (a) the number of readily available organizing constructs is great, as is the case when the perceiver's cognitive construct system is complex, or (b) the motivation to search for organizing constructs is raised by the presence of so much perceived conflict in the stimulus person that the perception becomes noxiously imbalanced, as is the case with a dissimilar person whose similarities to the S are made more salient by the invocation of the understanding set.

The number of readily available organizing constructs will probably be greater when the system is complex and the stimulus person is perceived to be at a very high level of similarity because few if any modifications will have to be made in the constructs in order to have them fit. In the case of a similar stimulus person, the understanding set probably raises the salience of the dissimilarity and so reduces the ease of exploring for organizing constructs while not raising the level of imbalance to the point that it is perceived as noxious.

A further interesting finding about differentiation and organization of impressions was the relationship between them and the use of motivation and egocentricity. In the first chapter, it was reasoned that there ought to be more use of motivation to resolve inconsistency by high complexity Ss and by Ss in the understanding set. It was further argued that high complexity Ss should show less egocentricity in their impressions than low complexity Ss. Neither of these hypotheses was supported by chi-square tests.

However, motivation was significantly correlated with organization ( $r = .389, p < .005$ ) and negatively correlated with perceptions of consistency ( $r = -.205, p < .05$ ). This indicates that motivation is used in more highly organized impressions and that it occurs in cases where there is a

perceived inconsistency. The correlations are significant while the chi-square tests were not for two reasons. First, the correlations include cases where motivation was used but not to resolve inconsistency. Second, in the formal tests it was assumed that those high in total complexity would also be those who would give the most highly organized impressions. This was not the case.

Egocentricity of the impressions did not relate to either organization or complexity. It did show differences related to set. Less egocentric impressions were given in the understanding than in the evaluative set. The lack of relationship to complexity may be due to the fact that adults have, in general, passed the developmental stage associated with egocentricity but still show minor individual differences in their tendencies to use it. Such minor differences in normal level of egocentricity may be enhanced by the evaluation set as an artifact of the instructions which tell the S to use as standards ". . . the kinds of things that are most important to your friend and you in deciding whether you care for people." This may cause Ss to use themselves as a comparison standard and, thus, artificially induce egocentricity in the evaluative set. In addition, the measure of egocentricity used in this study may not have been entirely adequate to discriminate differences in ability to take the role of the other.

Prediction of Attraction

The third general hypothesis was that regression analysis would show that factors other than attitudinal similarity would affect scores on Byrne's liking measure. The results supported this hypothesis. Specifically, perceived similarity was found to be the most important predictor of the Byrne liking scores. In addition, significant complexity by set and similarity by set interactions were found for the Byrne liking scores and similarity by set interactions were found for several of the favorability questions. These findings indicate that there are two important departures from response to simple proportion of reinforced attitudes. First, it seems clear that Ss responded to perceptions of similarity rather than to actual similarity. Second, it appears that Byrne liking scores are differentially affected by personality and situational factors. These facts mitigate against the likelihood of a reinforcement model of attraction and in favor of a cognitive model as the more accurate.

A cognitive model would take into account not only the actual characteristics of the stranger, but the possibility that these characteristics might be modified by the mediating factors of environment and personality. Not only would the mediating factors of environment and personality be added but the cognitive model would consider attraction to be based on the impression considered as a whole. Using

Byrne's model, which is predicated on the notion that the greater the proportion of agreements, the greater the liking, it is not possible to consider the combination of attitudes taken as a whole as a factor influencing attraction nor is it possible to consider that what is perceived to be an agreement may differ widely among persons.

For example, a few of the Ss in this study who received similar stimulus persons commented, upon being told the hypotheses, that they did not like the person because he disagreed with them on some strongly held central attitude such as abortion, racial integration, or woman's rights. These Ss were noted, and when their impressions were examined, it seemed that this reaction was due not so much to a tendency of one strong negative reinforcement to counterbalance the effects of several less strong positive reinforcements, but to the fact that the disagreements made the stimulus person enigmatic. One of these Ss ended her impression by saying: "Mainly, it is just puzzling that we can share certain strong convictions, yet be so different."

Another's impression was:

I'm really not sure what I think about this girl. It seems that I really don't know enough. She answered a lot like I did. She seems to know how she feels about certain things. I'm not sure I understand her when she says she's against smoking marijuana. This could be a mistake, however if not, it tends to be confusing.

These responses, when combined with a large number of

impressions which labelled dissimilar persons as confusing, mixed up, uncertain of their beliefs, wishy-washy, and so on, seem to substantiate the Wright and Wright (1972) finding that understandability of the stimulus person is more important than sheer attitude similarity as a determinant of attraction.

Another factor which should be considered in positing a cognitive explanation of attraction is that the development of an attraction response is part of the larger process of forming an impression of another person. This process encompasses the kind and number of inferences that are made about a person's personality from available information, the way in which these inferences are organized, the importance attached to the person relative to other persons who are encountered, and the valence of the impression. The first two parts of the impression formation process require cognitive explanations, so it would not seem logical to use a different sort of model -- a reinforcement model -- to describe a single part of the process when all of the parts are integrally related to one another.

#### Other Hypotheses

None of the four other hypotheses was supported. Only two of them which have important implications for cognitive complexity and impression formation will be discussed here. As reported above, several authors have

addressed the relationship between frequency of interaction and cognitive complexity. If the frequency of interaction hypothesis holds, then knowing someone like the stimulus person should be significantly positively correlated with differentiation of the impression. This correlation was not significant.

If the frequency of interaction hypothesis is more than an artifact of differences in amount of information about specific persons, and if it is true that people interact more often with similar others, then differentiation should be higher with regard to similar than to dissimilar persons. There was no significant difference in differentiation between similar and dissimilar stimulus persons. Thus, in testing the hypothesis, suggested in the review of the literature, that more frequent interaction with a category leads to higher differentiation with regard to members of that category, there is no evidence in this study to reject the null hypothesis. However, one finding -- that persons higher in complexity are more likely to know someone like the stimulus person -- suggests another hypothesis which will be of interest for future testing. It may be that Ss higher in complexity are more likely to be able to develop schemata to deal with novel stimuli since they have more constructs to choose from and since their constructs are more likely to be permeable -- i.e., are more susceptible to elaboration and to change from category to category

within the cognitive system. This means that high complexity Ss would be better able to pick bits and pieces from their past experiences to derive a new schema to deal with a new experience. This ability to develop schemata would make high complexity Ss more likely to judge novel experiences as familiar. Such an hypothesis does not in any way discount the necessity of experience as the laboratory for building a cognitive system. It does suggest that both amount of information in the cognitive system and methods of organizing it are important factors in anticipating experience and that low complexity Ss may not have been exposed to any less, nor even assimilated any less information than high complexity Ss, rather that high complexity Ss have cognitive systems which are organized so that they have more ready access to the information that their experiences have given them.

The other finding of importance for discussion was that average attitude strength was not higher for high than for low complexity Ss. This finding appears to conflict with a finding by Nidorf and Argabrite (1970), that high complexity Ss use more extreme judgment categories in responding to semantic differential scales. Further testing on this matter would be required to reach a conclusion because the present data, while it allows for more and less extreme responses, is not semantic differential data and because Nidorf and Argabrite analyzed tendency to use

extreme categories as frequency data while the present data was analyzed as mean scores. Since the same mean can be arrived at using equal numbers of "one" and "three" responses as using all "two" responses, the tests are not strictly comparable.

In any event, the failure to gain support for this hypothesis leaves the Nidorf and Argabrite finding open to question, despite the differences which make a strict comparison impossible, because there is no theoretical reason for believing that high complexity Ss ought to respond more extremely than low complexity Ss. Thus, unless further support can be offered for their finding, extremity of response should be treated very cautiously as a correlate of cognitive complexity.

#### Theoretical Implications

Impression formation is a complex process. People get information about others from various sources and weave it into coherent, relatively well-defined and differentiated impressions. Some of this process depends upon the psychological processes of the perceiver, some depends upon the environmental factors surrounding both the perceiver and the person perceived, and some depends upon the characteristics of the person perceived. In this study, one factor from each of these areas has been included. The combination of all three is necessary to account adequately for differences

in impression formation with regard to each of the three important dependent variables studied -- favorability of impression, differentiation of impression, and organization of impression.

Theoretical implications have been discussed as each of the major hypotheses was discussed. In this section, an attempt will be made to draw them together into a coherent whole. The essential problem is to coordinate the findings about organization with the findings about differentiation of impressions to the extent that this can be done.

If one takes the position, which has been explained above, that differentiation is indicative of ability to draw ~~schemata to deal with novel stimuli rather than~~ that it is indicative of more pieces of information in the cognitive construct system, this implies that high complexity is not so much a matter of greater contact as it is a matter of ability to assimilate information because of the availability of categories and/or the flexibility to develop categories to deal with the information with which one comes in contact. In other words, it means that organization develops roughly in parallel with differentiation or that differentiation and organization develop in cycles in much the same manner as Piaget describes the development of schemata in the child. For example, the child cannot deal with the concept "n + 1" until he is able to conserve sets so that he has a basis for attaching meaning to "n" as a

set (Piaget, 1964, trans. 1968). Two persons can be exposed to the same information, but one will be able to make more or less full use of it as a distinguisher among categories of people because his cognitive construct system has developed to the point that he can make good and distinctive use of the information while the other may lump it in with other information so that it really does not add anything to his ability to distinguish among categories. The real importance of this position is that it takes the view that organization comes before or concurrently with differentiation rather than vice versa, as the frequency of interaction hypothesis would imply.

If one presumes that developmental level of the cognitive construct system will be reflected in the organization of impressions about novel stimuli, one half of the findings of this study -- those with regard to organization of impressions of similar stimulus persons -- are explained. The differences in level of organization between high and low complexity Ss who judged dissimilar persons is not significant, however, so one cannot say that the level of organization of their impressions reflects only developmental level. This anomaly can be explained in two ways. One is to say that nobody functions at the highest level of organization which his cognitive construct system allows and that the combination of the dissimilar stimulus person and the understanding set provides a large enough stress

to cause better utilization of the cognitive categories available. Using this reasoning, one can explain the results for similar stimulus persons in the understanding set and dissimilar persons in the evaluative set as being too little and too much stress, respectively. In the one case, the stress is not great enough to motivate full use of the system, and in the other, the stress is so large that it causes the perceiver to leave the field by simply dismissing the stimulus person as totally unlike himself. The alternative explanation is that one tends to perceive according to one's already developed constructs as long as what one encounters fits them or can be distorted to fit ~~them with little difficulty, but that when a perception cannot~~ not be made to fit the available constructs there will be a consistency-based need for the S to develop new constructs and/or to reorganize existing ones in order to cope with the new perception. In other words, perceptions which do not fit readily available constructs act as a jolt to the cognitive system which leads to reorganization and recruitment of constructs from the periphery of the construct system. In the cases of similar and dissimilar persons being perceived under evaluative instructions, both should fit the categories available because they are balanced and should not upset the S's expectations. In the case of the similar person perceived under understanding instructions,

the situation is probably easily distorted to fit expectations because the number of differences is small in relation to the number of similarities even when the differences are made more salient by the use of the understanding set. But when the stimulus person is dissimilar and the instructions are to understand, the situation is imbalanced to the degree that distortion is not possible and the imbalance mitigates against the likelihood of there being already existing categories in the cognitive system to deal with the situation. In this case, new constructs and/or the reorganization of old ones will probably occur. This argument does not imply that there would not be some Ss with constructs already available to deal with imbalanced situations. Such Ss would probably be high in complexity, and if an ease of task measure had been taken in the imbalanced situation, these Ss would probably have rated the task much easier than low complexity Ss who were able to reach the same levels of organization but for whom the task probably involved more effort.

Probably the best explanation is a combination of the two. In a person's cognitive construct system, some constructs will be more central, or easily accessible, than others. Encountering an imbalanced stimulus situation may serve as an impetus to draw on the more peripheral constructs as a means of coping with the situation. But one of Kelly's (1955) principles is that an experience which

has not been adequately anticipated by a person's construct system will lead to reorganization of constructs and addition of constructs to the system. Thus, both explanations probably hold true to some extent.

Cautions about Interpreting the Data and Suggestions for Future Research

One fact which must be kept in mind about the data from the current study is that people do not actually form impressions of others from masses of information given to them all at one time. There are exceptions, of course -- admissions officers at colleges, employers, teachers, and supervisors who are given a lot of test scores about the people whom they will teach or supervise, and so on. Most people, however, probably form impressions of most people with whom they come in contact by gathering bits and pieces of information about the other person and making inferences on the basis of the facts. So, in reality, impressions may be much more inferential and much less based on fact than the impressions in this study. If one presumes, however, that once an inference is put into operation as the basis of an impression and, in consequence, as the basis for responding to a person, that it will be treated as having the substance of fact, then the impressions formed here may really not be so different from those formed in ordinary social interactions except for the fact that the Ss were able to obtain in a very short space of time information

that would take considerably longer to gather in reality.

A further caution which must be observed is that the experiment has not been replicated. Thus, the conclusions are based on a single study and so do not carry the weight that they would carry if the same results had been found in two or three similar experiments.

It is clear, furthermore, that some questions which should have been asked were not. For example, it would be helpful to have included other levels of similarity than the two which were used, to have included other attitude toward the stranger questions that did not include or imply Byrne's questions in some way, to have asked the Ss to rate the ease of forming an impression of the stimulus person, and to have asked an open-ended question about how the S went about forming the impression. All of these things would have added to the interpretability of the data. The last question would have been particularly helpful in interpreting the results of the no set condition which did not fit the predictions about it.

A final caution regarding the use of the conclusions of this study is that many of them are based on unpredicted or post-hoc findings. Since these conclusions are made from hypotheses drawn from the data they have not been exposed to independent tests and should, therefore, be treated with care. Additional experiments should be done to test these hypotheses which have been drawn from the data of this study

to see if they will hold true when exposed to tests independent of the data from which they were drawn. Not all of the conclusions of this study are of this nature, and where they are, every effort has been made to point out their status.

### Summary

The kinds of impressions people form of others are important determinants of both the quality and quantity of interpersonal interactions. The purpose of this study was to find out more than is already known about the process of impression formation. Specifically, its aims were to find 1) the main effects and interaction effects of cognitive complexity, attitude similarity-dissimilarity, and instructional set on the favorability and other attitudinal aspects of impressions formed of strangers; 2) the main effects and interaction effects of cognitive complexity, attitude similarity-dissimilarity, and instructional set on the differentiation and organization of such impressions; and 3) whether factors other than attitude similarity-dissimilarity affect attraction as measured by Byrne (1971).

An experiment was performed using a 2 x 3 x 2 design in which the factors were attitude similarity, instructional set and cognitive complexity. The Ss were 143 introductory psychology students at the University of Kansas, each of whom attended two experimental sessions. In the first session, they completed the Four Role Category Questionnaire

(Crockett, 1965) to assess cognitive complexity and a Self-Description Questionnaire to assess their attitudes. In the second session, each S was given an attitude questionnaire, purported to have been completed by another student, which agreed with either eighty or twenty per cent of the attitudes he had expressed in the first session. The Ss were asked to study the questionnaires and were instructed either to 1) try to form an impression which would help to understand the stimulus person, 2) to try to form an impression which would help to evaluate the stimulus person, or 3) to try to form an impression with no other instructions given. Then Ss were asked to complete a questionnaire in which they wrote a free form impression of the stimulus person, answered ten attitude questions about the stimulus person, and predicted his behavior in eight situations. The written impressions were scored for differentiation and organization. The attitude questions were scored for favorability, and the behavior predictions were scored for differences from the S's predictions of his own behavior in the same situations.

Favorability of the impressions was greater for similar than for dissimilar stimulus persons. Set also influenced favorability, interacting with similarity so that similar persons were rated most favorably in the evaluative set, while dissimilar persons were rated most favorably in the understanding set. Differentiation was affected only

by complexity. High complexity Ss differentiated more than low complexity Ss. Organization was influenced by both the S's complexity and the combination of similarity and set. Organization was higher for high complexity than for low complexity Ss. When the stimulus person was similar to the S, high complexity was the most important factor in determining whether the impression was highly organized. When the stimulus person was dissimilar, set had a greater effect with Ss in the understanding set giving more highly organized impressions than Ss in the evaluative set. The Byrne liking measure was determined by several factors, but it was more importantly related to perceived similarity than to actual similarity of the stimulus person to the S.

Three major conclusions were drawn. First, favorability of impressions formed of others is determined not only by similarity but also by the mental set which the S brings to the situation. Second, the principle that an impression will be more highly organized if either a) there are a great number of readily available organizing constructs or b) the motivation to search for organizing constructs is great was posited. Finally, it was suggested that a cognitive explanation of attraction in impression formation was more appropriate than Byrne's reinforcement model.

## FOOTNOTES

<sup>1</sup>A manual of instructions for scoring impressions according to Crockett's method exists in mimeographed form and is available from him. The Press method is in the beginning stages of development and was obtained by personal communication.

<sup>2</sup>The results of this study were obtained through personal communication with Jesse G. Delia and Allan N. Press.

<sup>3</sup>This questionnaire is available from Allan N. Press, Kansas State University, in mimeographed form.

## REFERENCES

- Backman, C.W. and Secord, P.F. The effect of perceived liking on interpersonal attraction. Human Relations, 1959, 12, 379-384.
- Barron, F. Complexity-simplicity as a personality dimension. Journal of Abnormal and Social Psychology, 1953, 48, 163-172.
- Baskett, G.D. Interpersonal attraction as a function of attitude similarity-dissimilarity and cognitive complexity. Dissertation Abstracts International, 1969, 29, (10-B), 3931-3932.
- Berkowitz, L. Leveling tendencies and the complexity simplicity dimension. Journal of Personality, 1957, 25, 743-751.
- Berkowitz, L. and Howard, R.C. Reactions to opinion deviates as affected by affiliation need ( $n$ ) and group member interdependence. Sociometry, 1959, 22, 81-91.
- Bieri, J. Cognitive complexity-simplicity and predictive behavior. Journal of Abnormal and Social Psychology, 1955, 51, 263-268.
- Brislin, R.W. and Lewis, S.A. Dating and physical attractiveness: Replication. Psychological Reports, 1968, 22, 976.
- Byrne, D. Interpersonal attraction and attitude similarity. Journal of Abnormal and Social Psychology, 1961, 62, 713-715.
- Byrne, D. Response to attitude similarity-dissimilarity as a function of affiliation need. Journal of Personality, 1962, 30, 164-177.
- Byrne, D. The Attraction Paradigm. New York: Academic Press, 1971.
- Byrne, D. and Clore, G.L. A reinforcement model of evaluative responses. Personality: An International Journal, 1970, 1, 103-128.

- Byrne, D., Clore, G.L. and Griffitt, W. Response discrepancy versus attitude similarity-dissimilarity as determinants of attraction. Psychonomic Science, 1967, 7, 397-398.
- Byrne, D., Griffitt, W. and Clore, G.L. Attitudinal reinforcement effects as a function of stimulus homogeneity-heterogeneity. Journal of Verbal Learning and Verbal Behavior, 1968, 7, 962-964.
- Byrne, D., London, O. and Griffitt, W. The effect of topic importance and attitude similarity-dissimilarity on attraction in an intrastranger design. Psychonomic Science, 1968, 11, 303-304.
- Byrne, D. and Nelson, D. Attraction as a function of attitude similarity-dissimilarity: the effect of topic importance. Psychonomic Science, 1964, 1, 93-94.
- Byrne, D. and Nelson, D. Attraction as a linear function of proportion of positive reinforcements. Journal of Personality and Social Psychology, 1965, 1, 659-663. (a)
- Byrne, D. and Nelson, D. The effect of topic importance and attitude similarity-dissimilarity on attraction in a multistranger design. Psychonomic Science, 1965, 3, 449-450. (b)
- Byrne, D. and Rhamey, R. Magnitude of positive and negative reinforcements as a determinant of attraction. Journal of Personality and Social Psychology, 1965, 2, 884-889.
- Byrne, D. and Wong, T.J. Racial prejudice, interpersonal attraction and assumed dissimilarity of attitude. Journal of Abnormal and Social Psychology, 1962, 65, 246-253.
- Byrne, D., Young, R.K. and Griffitt, W. The reinforcement properties of attitude statements. Journal of Experimental Research in Personality, 1966, 1, 266-276.
- Clore, G.L. Discrimination learning as a function of awareness and magnitude of attitudinal reinforcement. Unpublished doctoral dissertation, University of Texas, 1966.
- Clore, G.L. and Baldrige, B. Interpersonal attraction: the role of agreement and topic interest. Journal of

Personality and Social Psychology, 1968, 9, 340-346.

- Crockett, W.H. Cognitive complexity and impression formation. In B.A. Maher (Ed.), Progress in Experimental Personality Research, Vol. 2. New York: Academic Press, 1965, 47-90.
- Crockett, W.H., Mahood, S.M. and Press, A.N. The effect of communication situations on the formation of interpersonal impressions. Paper read at the Speech Communication Association Convention, San Francisco, California, December, 1971.
- Delia, J.G. Cognitive complexity and the effect of schemas on the learning of social structures. Unpublished doctoral dissertation, University of Kansas, 1970.
- Dittes, J.E. Attractiveness of group as function of self-esteem and acceptance by group. Journal of Abnormal and Social Psychology, 1959, 59, 77-82.
- Dornbusch, S.M., Hastdorf, A.H., Richardson, S.A., Muzzy, R.E., and Vreeland, R.S. The perceiver and the perceived: Their relative influence on the categories of interpersonal cognition. Journal of Personality and Social Psychology, 1965, 1, 434-440.
- Epting, F.R. Cognitive complexity and persuasibility across cognitive domains. Dissertation Abstracts International, 1968, 28 (12-B), 5190-5191.
- Fertig, E.S. and Mayo, C. Impression formation as a function of trait consistency and cognitive complexity. Proceedings, 77th Annual Convention, APA, 1969, 345.
- Festinger, L. A theory of social comparison processes. Human Relations, 1954, 7, 117-140.
- Festinger, L. A Theory of Cognitive Dissonance. Stanford, Calif.: Stanford University Press, 1957.
- Festinger, L., Schachter, S., and Back, K. Social Pressures in Informal Groups: A Study of Human Factors in Housing. New York: Harper, 1950.
- Golightly, C. and Byrne, D. Attitude statements as positive and negative reinforcements. Science, 1964, 146, 798-799.

- Griffitt, W. and Byrne, D. Procedures in the paradigmatic study of attitude similarity and attraction. Representative Research in Social Psychology, 1970, 1, 33-48.
- Harvey, O.J., Reich, J.W., and Wyer, R.S. Effects of attitude direction, attitude intensity and structure of beliefs upon differentiation. Journal of Personality and Social Psychology, 1968, 10, 472-478.
- Heider, F. The Psychology of Interpersonal Relations. New York: Wiley, 1958.
- Ichheiser, G. Appearances and Realities: Misunderstandings in Human Relations. San Francisco: Jossey-Bass, Inc., 1970.
- Irwin, M., Tripodi, T., and Bieri, J. Affective stimulus value and cognitive complexity. Journal of Personality and Social Psychology, 1967, 5, 444-448.
- Kelly, G.A. The Psychology of Personal Constructs. New York: Norton, 1955. 2 vols.
- Kenny, C.T. The influence of cognitive complexity, amount of information, and social role of the other person on evaluative aspects of impression formation. Unpublished doctoral dissertation, Clark University, Worcester, Mass., 1968.
- Lamberth, J. and Byrne, D. Similarity-attraction or demand characteristics? Personality: An International Journal, 1971, 2, 77-91.
- Leventhal, M. Cognitive processes and interpersonal prediction. Journal of Abnormal and Social Psychology, 1957, 55, 176-180.
- Lott, A.J. and Lott, B.E. A learning theory approach to interpersonal attitudes. In A.G. Greenwald, T.C. Brock, and T.M. Ostrom (Eds.), Psychological Foundations of Attitudes. New York: Academic Press, 1969.
- Lott, B.E. and Lott, A.J. The formation of positive attitudes toward group members. Journal of Abnormal and Social Psychology, 1960, 61, 297-300.
- Mahood, S.M. Cognitive complexity and the remembering of interpersonal impressions. Unpublished doctoral dissertation, University of Kansas, 1971.

- Mayo, C.W. Cognitive complexity and conflict resolution in impression formation. Unpublished doctoral dissertation, Clark University, Worcester, Mass., 1959.
- Mayo, C.W. and Crockett, W.H. Cognitive complexity and primacy-recency effects in impression formation. Journal of Abnormal and Social Psychology, 1964, 68, 335-338.
- Meltzer, B., Crockett, W.H., and Rosenkrantz, P.S. Cognitive complexity, value congruity, and the integration of potentially incompatible information in impressions of others. Journal of Personality and Social Psychology, 1966, 4, 338-342.
- Miller, A. Amount of information and stimulus valence as determinants of cognitive complexity. Journal of Personality, 1969, 37, 141-157.
- Miller, A. and Bieri, J. Cognitive complexity as a function of the significance of the stimulus objects being judged. Psychological Reports, 1965, 16, 1203-1204.
- Newcomb, T.M. Autistic hostility and social reality. Human Relations, 1947, 1, 69-86.
- Newcomb, T.M. The Acquaintance Process. New York: Holt, Rinehart, and Winston, 1961.
- Newcomb, T.M. and Svehla, G. Intra-family relationships in attitudes. Sociometry, 1937, 1, 180-205.
- Nidorf, L.J. and Argabrite, A.H. Dogmatism, sex of the subject, and cognitive complexity. Journal of Projective Techniques and Personality Assessment, 1968, 32, 585-588.
- Nidorf, L.J. and Argabrite, A.H. Cognitive complexity and the tendency to make extreme judgments. Perceptual and Motor Skills, 1970, 31, 478.
- Nidorf, L.J. and Crockett, W.H. Cognitive complexity and the integration of conflicting information in written impressions. Journal of Social Psychology, 1965, 66, 165-169.
- Piaget, J. M. Worden (Trans.) Judgment and Reasoning in the Child. Totowa, N.J.: Littlefield, Adams and Co., 1969. (Originally published: London: Routledge and Kegan Paul, Ltd., 1928).

- Piaget, J. M. Gabain (Trans.) The Language and Thought of the Child. New York: World Publishing Co., 1955.
- Piaget, J. A. Tenzer (Trans.) Six Psychological Studies.<sup>1</sup> New York: Vintage Books, 1968. (Originally published: Geneva: Editions Gonthier, S.A., 1964).
- Press, A.N., Crockett, W.H., and Rosenkrantz, P.S. Cognitive complexity and the learning of balanced and unbalanced social structures. Journal of Personality, 1969, 37, 541-553.
- Reich, J.W. Affect and interaction frequency as determiners of the complexity of interpersonal perception. Perceptual and Motor Skills, 1969, 28, 107-113.
- Reitz, W.E., Douey, J., and Mason, G. Role of homogeneity and centrality of attitude domain on reinforcing properties of attitude statements. Journal of Experimental Research in Personality, 1968, 3, 120-125.
- Richardson, H.M. Community of values as a factor in friendships of college and adult women. Journal of Social Psychology, 1940, 11, 303-312.
- Rogers, C.R. Client-centered Therapy. New York: Houghton Mifflin Company, 1951.
- Rogers, C.R. Communication: Its blocking and facilitation. ETC: A Review of General Semantics, 1952, 9, 83-88.
- Rogers, C.R. On Becoming a Person: A Therapist's View of Psychotherapy. Boston: Houghton Mifflin Company, 1961.
- Rosenkrantz, P.S. Relationship of some conditions of presentation and cognitive differentiation to impression formation. Unpublished doctoral dissertation, Clark University, Worcester, Mass., 1961.
- Rosenkrantz, P.S. and Crockett, W.H. Some factors influencing the assimilation of disparate information in impression formation. Journal of Personality and Social Psychology, 1965, 2, 397-402.
- Sachs, D. and Byrne, D. Differential conditioning of evaluative responses to neutral stimuli through association with attitude statements. Journal of Experimental Research in Personality, 1970, 4, 181-185.

- Scarlett, H.H., Press, A.N., and Crockett, W.H. Children's descriptions of peers: A Wernerian developmental analysis. Child Development, 1971, 42, 439-453.
- Schachter, S. Deviation, rejection and communication. Journal of Abnormal and Social Psychology, 1951, 46, 190-207.
- Schooley, M. Personality resemblances among married couples. Journal of Abnormal and Social Psychology, 1936, 31, 340-347.
- Scott, W.A. Cognitive complexity and cognitive flexibility. Sociometry, 1962, 25, 405-414.
- Scott, W.A. Cognitive complexity and cognitive balance. Sociometry, 1963, 26, 66-74.
- Scott, W.C. Response prediction and interpersonal attraction. Paper read at Meetings of the Southwestern Psychological Association, Austin, Texas, 1969.
- Sechrest, L.B. and Jackson, D.N. Social intelligence and accuracy of interpersonal predictions. Journal of Personality, 1961, 29, 167-191.
- Sherif, M. and Hovland, C.I. Social Judgment. New Haven: Yale University Press, 1961.
- Signell, K.A. Cognitive complexity in person perception and nation perception: A developmental approach. Journal of Personality, 1966, 34, 517-537.
- Smith, A.J. Similarity of values and its relation to acceptance and the projection of similarity. Journal of Psychology, 1957, 43, 251-260.
- Smith, R.E. and Jeffery, R.W. Social-evaluative anxiety and the reinforcement properties of agreeing and disagreeing attitude statements. Journal of Experimental Research in Personality, 1970, 4, 276-280.
- Staats, A.W. Social behaviorism and human motivation: Principles of the attitude-reinforcer-discriminative system. In A.G. Greenwald, T.C. Brock, and T.M. Ostrom (Eds.), Psychological Foundations of Attitudes. New York: Academic Press, 1969.
- Vannoy, J.S. Cognitive complexity as a personality construct. Journal of Personality and Social Psychology, 1965, 2, 385-396.

- Walker, H.M. and Lev, J. Statistical Inference. New York: Henry Holt and Company, 1953.
- Walster, E. The effect of self-esteem on romantic liking. Journal of Experimental Social Psychology, 1965, 1, 184-197.
- Walster, E., Aronson, V., Abrahams, D., and Rottman, L. Importance of physical attractiveness in dating behavior. Journal of Personality and Social Psychology, 1966, 4, 508-516.
- Walster, E. and Walster, G.W. Effect of expecting to be liked on choice of associates. Journal of Abnormal and Social Psychology, 1963, 67, 402-404.
- Werner, H. The concept of development, from a comparative and organismic point of view. In D.B. Harris (Ed.), The Concept of Development. Minneapolis: University of Minnesota Press, 1957.
- Werner, H. Comparative Psychology of Mental Development. New York: Science Editions, Inc., 1961.
- Winslow, C.N. A study of the extent of agreement between friends' opinions and their ability to estimate the opinions of each other. Journal of Social Psychology, 1937, 8, 433-442.
- Wright, P.H. Byrne's paradigmatic approach to the study of attraction: Misgivings and alternatives. Representative Research in Social Psychology, 1971, 2, 66-70.
- Wright, P.H. and Wright, K.D. Attitude similarity and three "anticipated rewards" as predictors of attraction to a hypothetical stranger. Representative Research in Social Psychology, 1972, 3, 131-140.
- Zajonc, R.B. The process of cognitive tuning in communication. Journal of Abnormal and Social Psychology, 1960, 61, 159-167.

APPENDIX A

BYRNE INTERPERSONAL JUDGMENT SCALE

INTERPERSONAL JUDGMENT SCALE

Your name: \_\_\_\_\_

1. Intelligence (check one)
  - I believe that this person is very much above average in intelligence.
  - I believe that this person is above average in intelligence.
  - I believe that this person is slightly above average in intelligence.
  - I believe that this person is average in intelligence.
  - I believe that this person is slightly below average in intelligence.
  - I believe that this person is below average in intelligence.
  - I believe that this person is very much below average in intelligence.
  
2. Knowledge of Current Events (check one)
  - I believe that this person is very much below average in his (her) ~~knowledge of current events~~.
  - I believe that this person is below average in his (her) knowledge of current events.
  - I believe that this person is slightly below average in his (her) knowledge of current events.
  - I believe that this person is average in his (her) knowledge of current events.
  - I believe that this person is slightly above average in his (her) knowledge of current events.
  - I believe that this person is above average in his (her) knowledge of current events.
  - I believe that this person is very much above average in his (her) knowledge of current events.
  
3. Morality (check one)
  - This person impresses me as being extremely moral.
  - This person impresses me as being moral.
  - This person impresses me as being moral to a slight degree.
  - This person impresses me as being neither particularly moral nor particularly immoral.
  - This person impresses me as being immoral to a slight degree.
  - This person impresses me as being immoral.
  - This person impresses me as being extremely immoral.

4. Adjustment (check one)

- I believe that this person is extremely maladjusted.
- I believe that this person is maladjusted.
- I believe that this person is maladjusted to a slight degree.
- I believe that this person is neither particularly maladjusted nor particularly well adjusted.
- I believe that this person is well adjusted to a slight degree.
- I believe that this person is well adjusted.
- I believe that this person is extremely well adjusted.

5. Personal Feelings (check one)

- I feel that I would probably like this person very much.
- I feel that I would probably like this person.
- I feel that I would probably like this person to a slight degree.
- I feel that I would probably neither particularly like nor particularly dislike this person.
- I feel that I would probably dislike this person to a slight degree.
- I feel that I would probably dislike this person.
- I feel that I would probably dislike this person very much.

6. Working Together in an Experiment (check one)

- I believe that I would very much dislike working with this person in an experiment.
- I believe that I would dislike working with this person in an experiment.
- I believe that I would dislike working with this person in an experiment to a slight degree.
- I believe that I would neither particularly dislike nor particularly enjoy working with this person in an experiment.
- I believe that I would enjoy working with this person in an experiment to a slight degree.
- I believe that I would enjoy working with this person in an experiment.
- I believe that I would very much enjoy working with this person in an experiment.

APPENDIX B  
FOUR ROLE CATEGORY QUESTIONNAIRE

ROLE CATEGORY QUESTIONNAIRE

Name \_\_\_\_\_ Date \_\_\_\_\_ Sex \_\_\_\_\_  
Instructor \_\_\_\_\_ Class Time \_\_\_\_\_

Our interest in this questionnaire is to learn how people describe others whom they know. We are interested in knowing, in your own terms, the characteristics which a set of individuals have--those which set one person off from another as an individual, and those characteristics which they share in common.

Our concern here is with the habits, ideas, mannerisms -- in general, with the personal characteristics, rather than the physical traits -- which characterize a number of different people.

In order to make sure that you are describing real people, we have set down a list of four different categories of people. In the blank space beside each category below, please write the initials, nicknames, or some identifying symbol for a person of your acquaintance who fits that category. Be sure to use a different person for each category.

1. A man your own age whom you like \_\_\_\_\_
2. A man your own age whom you dislike \_\_\_\_\_
3. A woman your own age whom you like \_\_\_\_\_
4. A woman your own age whom you dislike \_\_\_\_\_

Spend a few moments looking over this list, mentally comparing and contrasting the people you have in mind for each category. Think of their habits, their beliefs, their mannerisms, their relations to others, any characteristics they have which you might use to describe them to other people.

If you have any questions about the kinds of characteristics we are interested in, please ask them.

Do not turn the page until instructed to do so.

Please look back to the first sheet and place the symbol you have used to designate the person in category 1 here \_\_\_\_\_.

Now describe this person as fully as you can. Write down as many defining characteristics as you can. Do not simply put down those characteristics that distinguish him from others on your list, but include any characteristics that he shares with others as well as characteristics that are unique to him. Pay particular attention to his habits, beliefs, ways of treating others, mannerisms, and similar attributes. Remember, describe him as completely as you can, so that a stranger might be able to determine the kind of person he is from your description. Use the back of this page if necessary.

This person is:

Please look back to the first sheet and place the symbol you have used to designate the person in category 2 here \_\_\_\_\_.

Now describe this person as fully as you can. Write down as many defining characteristics as you can. Do not simply put down those characteristics that distinguish him from others on your list, but include any characteristics that he shares with others as well as characteristics that are unique to him. Pay particular attention to his habits, beliefs, ways of treating others, mannerisms, and similar attributes. Remember, describe him as completely as you can, so that a stranger might be able to determine the kind of person he is from your description. Use the back of this page if necessary.

This person is:

Please look back to the first sheet and place the symbol you have used to designate the person in category 3 here \_\_\_\_\_.

Now describe this person as fully as you can. Write down as many defining characteristics as you can. Do not simply put down those characteristics that distinguish her from others on your list, but include any characteristics that she shares with others as well as characteristics that are unique to her. Pay particular attention to her habits, beliefs, ways of treating others, mannerisms, and similar attributes. Remember, describe her as completely as you can, so that a stranger might be able to determine the kind of person she is from your description. Use the back of this page if necessary.

This person is:

Please look back to the first sheet and place the symbol you have used to designate the person in category 4 here \_\_\_\_\_.

Now describe this person as fully as you can. Write down as many defining characteristics as you can. Do not simply put down those characteristics that distinguish her from others on your list, but include any characteristics that she shares with others as well as characteristics that are unique to her. Pay particular attention to her habits, beliefs, ways of treating others, mannerisms, and similar attributes. Remember, describe her as completely as you can, so that a stranger might be able to determine the kind of person she is from your description. Use the back of this page if necessary.

This person is:

APPENDIX C  
SELF-DESCRIPTION QUESTIONNAIRE

Name \_\_\_\_\_

Sex: M F Year in school: Fr So Jr Sr Age \_\_\_\_\_

College \_\_\_\_\_ Major \_\_\_\_\_

Please place a check in the blank beside the statement which most nearly expresses your opinion with regard to each topic listed.

1. Fraternities and Sororities (Check one)

I am very much against fraternities and sororities as they usually function.

I am against fraternities and sororities as they usually function.

To a slight degree, I am against fraternities and sororities as they usually function.

To a slight degree, I am in favor of fraternities and sororities as they usually function.

I am in favor of fraternities and sororities as they usually function.

I am very much in favor of fraternities and sororities as they usually function.

2. Belief in God (Check one)

I strongly believe that there is a God.

I believe that there is a God.

I feel that perhaps there is a God.

I feel that perhaps there is no God.

I believe that there is no God.

I strongly believe that there is no God.

3. Integration in Public Schools (Check one)

Racial integration in public schools is a mistake, and I am very much against it.

Racial integration in public schools is a mistake, and I am against it.

Racial integration in public schools is a mistake, and I am mildly against it.

Racial integration in public schools is a good plan, and I am mildly in favor of it.

Racial integration in public schools is a good plan, and I am in favor of it.

Racial integration in public schools is a good plan, and I am very much in favor of it.

4. Premarital Sex (Check one)

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

In general, I am in favor of premarital sex.

In general, I am mildly in favor of premarital sex.

4.  In general, I am mildly against premarital sex.  
 In general, I am against premarital sex.  
 In general, I am very much against premarital sex.
5. Classical Music (Check one)  
 I dislike classical music very much.  
 I dislike classical music.  
 I dislike classical music to a slight degree.  
 I enjoy classical music to a slight degree.  
 I enjoy classical music.  
 I enjoy classical music very much.
6. The home provides adequate outlets for a woman's creative and intellectual expression -- she need not look outside the home. (Check one)  
 I strongly agree with the above statement.  
 I agree with the above statement.  
 I slightly agree with the above statement.  
 I slightly disagree with the above statement.  
 I disagree with the above statement.  
 I strongly disagree with the above statement.
7. Drinking (Check one)  
 In general, I am very much in favor of college students drinking alcoholic beverages.  
 In general, I am in favor of college students drinking alcoholic beverages.  
 In general, I am mildly in favor of college students drinking alcoholic beverages.  
 In general, I am mildly opposed to college students drinking alcoholic beverages.  
 In general, I am opposed to college students drinking alcoholic beverages.  
 In general, I am very much opposed to college students drinking alcoholic beverages.
8. Smoking Marijuana (Check one)  
 In general, I am very much in favor of smoking marijuana.  
 In general, I am in favor of smoking marijuana.  
 In general, I am mildly in favor of smoking marijuana.  
 In general, I am mildly against smoking marijuana.  
 In general, I am against smoking marijuana.  
 In general, I am very much against smoking marijuana.
9. American Way of Life (Check one)  
 I strongly believe that the American way of life is not the best.  
 I believe that the American way of life is not the best.

9.  I feel that perhaps the American way of life is not the best.  
 I feel that perhaps the American way of life is the best.  
 I believe that the American way of life is the best.  
 I strongly believe that the American way of life is the best.
10. The domestic duties in a household are the primary responsibility of the wife and mother. (Check one)  
 I strongly agree with the above statement.  
 I agree with the above statement.  
 I slightly agree with the above statement.  
 I slightly disagree with the above statement.  
 I disagree with the above statement.  
 I strongly disagree with the above statement.
11. Preparedness for War (Check one)  
 I strongly believe that preparedness for war will not tend to precipitate war.  
 I believe that preparedness for war will not tend to precipitate war.  
 I feel that perhaps preparedness for war will not tend to precipitate war.  
 I feel that perhaps preparedness for war will tend to precipitate war.  
 I believe that preparedness for war will tend to precipitate war.  
 I strongly believe that preparedness for war will tend to precipitate war.
12. Legalizing Marijuana (Check one)  
 In general, I am very much in favor of legalizing marijuana.  
 In general, I am in favor of legalizing marijuana.  
 In general, I am mildly in favor of legalizing marijuana.  
 In general, I am mildly against legalizing marijuana.  
 In general, I am against legalizing marijuana.  
 In general, I am very much against legalizing marijuana.
13. Welfare (Check one)  
 I am very much opposed to increased welfare legislation.  
 I am opposed to increased welfare legislation.  
 I am mildly opposed to increased welfare legislation.  
 I am mildly in favor of increased welfare legislation.  
 I am in favor of increased welfare legislation.  
 I am very much in favor of increased welfare legislation.

14. Strict Discipline (Check one)  
 I am very much against strict disciplining of children.  
 I am against strict disciplining of children.  
 I am mildly against strict disciplining of children.  
 I am mildly in favor of strict disciplining of children.  
 I am in favor of strict disciplining of children.  
 I am very much in favor of strict disciplining of children.
15. Dancing (Check one)  
 I enjoy dancing very much.  
 I enjoy dancing.  
 I enjoy dancing to a slight degree.  
 I dislike dancing to a slight degree.  
 I dislike dancing.  
 I dislike dancing very much.
16. A Volunteer Army Instead of the Draft. (Check one)  
 I am very much in favor of a volunteer army.  
 I am in favor of a volunteer army.  
 I am mildly in favor of a volunteer army.  
 I am mildly opposed to a volunteer army.  
 I am opposed to a volunteer army.  
 I am very much opposed to a volunteer army.
17. The woman's role in contemporary society needs to be redefined. (Check one)  
 I strongly agree with the above statement.  
 I agree with the above statement.  
 I slightly agree with the above statement.  
 I slightly disagree with the above statement.  
 I disagree with the above statement.  
 I strongly disagree with the above statement.
18. Family Finances (Check one)  
 I strongly believe that the man in the family should handle the finances.  
 I believe that the man in the family should handle the finances.  
 I feel that perhaps the man in the family should handle the finances.  
 I feel that perhaps the woman in the family should handle the finances.  
 I believe that the woman in the family should handle the finances.  
 I strongly believe that the woman in the family should handle the finances.

19. Men's adjustment to stress (Check one)
- I strongly believe that men adjust to stress better than women.
  - I believe that men adjust to stress better than women.
  - I feel that perhaps men adjust to stress better than women.
  - I feel that perhaps women adjust to stress better than men.
  - I believe that women adjust to stress better than men.
  - I strongly believe that women adjust to stress better than men.
20. Abortion (Check one)
- I strongly support the right of a woman to obtain an abortion if she so desires.
  - I support the right of a woman to obtain an abortion if she so desires.
  - I slightly support the right of a woman to obtain an abortion if she so desires.
  - I am slightly against a woman obtaining an abortion if her life is not in danger.
  - I am against a woman obtaining an abortion if her life is not in danger.
  - I am strongly against a woman obtaining an abortion if her life is not in danger.
21. Bussing to achieve integration in public schools (Check one)
- I am very much in favor of bussing to achieve integration in the public schools.
  - I am in favor of bussing to achieve integration in the public schools.
  - I am slightly in favor of bussing to achieve integration in the public schools.
  - I am slightly against bussing to achieve integration in the public schools.
  - I am against bussing to achieve integration in the public schools.
  - I am very much against bussing to achieve integration in the public schools.
22. Professor and Student Needs (Check one)
- I feel that university professors are completely indifferent to student needs.
  - I feel that university professors are indifferent to student needs.
  - I feel that university professors are slightly indifferent to student needs.

22.  I feel that university professors are slightly concerned about student needs.  
 I feel that university professors are concerned about student needs.  
 I feel that university professors are very concerned about student needs.
23. Limiting Population Growth (Check one)  
 I strongly believe that couples should limit themselves to two children.  
 I believe that couples should limit themselves to two children.  
 I feel that perhaps couples should limit themselves to two children.  
 I feel that perhaps couples should feel free to have more than two children.  
 I believe that couples should feel free to have more than two children.  
 I strongly believe that couples should feel free to have more than two children.
24. Money (Check one)  
 I strongly believe that money is not one of the most important goals in life.  
 I believe that money is not one of the most important goals in life.  
 I feel that perhaps money is not one of the most important goals in life.  
 I feel that perhaps money is one of the most important goals in life.  
 I believe that money is one of the most important goals in life.  
 I strongly believe that money is one of the most important goals in life.
25. Political Beliefs (Check one)  
 I am very conservative in my political beliefs.  
 I am conservative in my political beliefs.  
 I am slightly conservative in my political beliefs.  
 I am slightly liberal in my political beliefs.  
 I am liberal in my political beliefs.  
 I am very liberal in my political beliefs.

Place the letter of the choice which most nearly matches what you would do in the situation described in the margin beside the number of the situation.

1. You see a person you do not recognize entering your neighbor's house when you know they are all away from home.
  - a. You call the police and report him as a suspicious person.
  - b. You go over with the intention of introducing yourself and finding out who he is.
  - c. You assume he is a friend to whom they have given a key and so do nothing.
  
2. You are voting in an election.
  - a. You vote for all Republicans.
  - b. You vote for all Democrats.
  - c. You vote for some from each party.
  
3. Your roommate constantly interrupts you with conversation while you are studying. This irritates you a good deal.
  - a. You go elsewhere to study.
  - b. You explain as nicely as you can that this habit is quite annoying and ask him to stop.
  - c. You suffer in silence for a while and then lose your temper.
  
4. Your parents offer to replace your car for you.
  - a. You accept without hesitation.
  - b. You politely turn down their offer.
  - c. You tell them you don't really need a new car but ask if they will help you pay for some repairs on the one you have.
  
5. You own a house in a medium priced housing development. A Black family moves in next door.
  - a. You put your house up for sale.
  - b. You establish a polite relationship with them.
  - c. You avoid them for the most part.
  
6. You are choosing a course to take as an elective.
  - a. You choose a social science course.
  - b. You choose a humanities course.
  - c. You choose a science or math course.
  
7. You find out that a person with whom you thought you had a good relationship has said some extremely derogatory things about you behind your back.
  - a. You break off relations with that person entirely.
  - b. You behave as though nothing had happened when you

7.
  - b. interact with the person but avoid encounters whenever possible.
  - c. You confront the person about the matter.
  
8. You are choosing a place to live.
  - a. You choose a place where you can live alone.
  - b. You choose a place to share with one roommate.
  - c. You choose a place to share with two or more roommates.

APPENDIX D  
POST-QUESTIONNAIRES

Name \_\_\_\_\_

In a moment we are going to give you a chance to study the attitudes of a person you do not know who has completed a questionnaire indicating how he or she feels about some issues of interest and importance to college students. We would like you to imagine that a friend of yours in another community wants to know what this person is like. Your friend has asked you to find out what the person is like and to send along your impression. It is especially important for your friend to arrive at an understanding of this person. That is, your friend needs to understand the kind of person he or she is and why he or she believes and behaves the way he or she does. Thus, your friend has asked you to give an impression of why this person is as he or she is.

So, please read the person's questionnaire and try to form an impression that provides an understanding of why he or she believes and behaves as he or she does.

DO NOT TURN THE PAGE UNTIL YOU ARE ASKED TO DO SO.

Now we would like to have you write as complete an impression as you can of this person. Include everything that you know, think, and feel about the person. Remember to try to provide for your friend an understanding of why this person believes and behaves as he or she does.



8. How intelligent is this person?

\_\_\_\_\_  
Very  
intelligent

\_\_\_\_\_  
Very  
unintelligent

9. How moral is this person?

\_\_\_\_\_  
Very  
moral

\_\_\_\_\_  
Very  
immoral

10. How friendly is this person?

\_\_\_\_\_  
Very  
unfriendly

\_\_\_\_\_  
Very  
friendly

Place the letter of the choice which most nearly matches what you think this person would do in the situation described in the margin beside the number of the situation.

1. You see a person you do not recognize entering your neighbor's house when you know they are all away from home.
  - a. You call the police and report him as a suspicious person.
  - b. You go over with the intention of introducing yourself and finding out who he is.
  - c. You assume he is a friend to whom they have given a key and so do nothing.
2. You are voting in an election.
  - a. You vote for all Republicans.
  - b. You vote for all Democrats.
  - c. You vote for some from each party.
3. Your roommate constantly interrupts you with conversation while you are studying. This irritates you a good deal.
  - a. You go elsewhere to study.
  - b. You explain as nicely as you can that this habit is quite annoying and ask him to stop.
  - c. You suffer in silence for a while and then lose your temper.
4. Your parents offer to replace your car for you.
  - a. You accept without hesitation.
  - b. You politely turn down their offer.
  - c. You tell them you don't really need a new car but ask if they will help you pay for some repairs on the one you have.
5. You own a house in a medium priced housing development. A Black family moves in next door.
  - a. You put your house up for sale.
  - b. You establish a polite relationship with them.
  - c. You avoid them for the most part.
6. You are choosing a course to take as an elective.
  - a. You choose a social science course.
  - b. You choose a humanities course.
  - c. You choose a science or math course.
7. You find out that a person with whom you thought you had a good relationship has said some extremely derogatory things about you behind your back.
  - a. You break off relations with that person entirely.
  - b. You behave as though nothing had happened when you

7.
  - b. interact with the person but avoid encounters whenever possible.
  - c. You confront the person about the matter.
  
8. You are choosing a place to live.
  - a. You choose a place where you can live alone.
  - b. You choose a place to share with one roommate.
  - c. You choose a place to share with two or more roommates.

Name \_\_\_\_\_

In a moment we are going to give you a chance to study the attitudes of a person you do not know who has completed a questionnaire indicating how he or she feels about some issues of interest and importance to college students. We would like you to imagine that a friend of yours in another community wants to know what this person is like. Your friend has asked you to find out what the person is like and to send along your impression. It is especially important for your friend to arrive at an evaluation of this person. That is, your friend needs to evaluate the person on the kinds of things that are most important to your friend and you in deciding whether you care for people. Thus, your friend has asked you to make an evaluation of this person in your impression.

So, please read the person's questionnaire and try to form an impression that provides an evaluation of his or her beliefs and behaviors.

DO NOT TURN THE PAGE UNTIL YOU ARE ASKED TO DO SO.

Now we would like to have you write as complete an impression as you can of this person. Include everything that you know, think, and feel about the person. Remember to try to provide for your friend an evaluation of this person's beliefs and behaviors.

Make a check along each scale at the point most representative of your judgment.

1. How much do you think you would like this person?

Very much \_\_\_\_\_ Not at all

2. Do you know anyone like this person?

Yes, very much \_\_\_\_\_ No, not at all

3. How similar is this person's character to your own?

Not at all similar \_\_\_\_\_ Very similar

4. How well adjusted is this person?

Very well adjusted \_\_\_\_\_ Not at all well adjusted

5. How much would you enjoy meeting and conversing with this person?

Not at all \_\_\_\_\_ Very much

6. Do you think you could work effectively with this person in a discussion group?

Not at all effectively \_\_\_\_\_ Very effectively

7. How consistent is this person?

Extremely inconsistent \_\_\_\_\_ Extremely consistent

8. How intelligent is this person?

\_\_\_\_\_  
Very  
intelligent

\_\_\_\_\_  
Very  
unintelligent

9. How moral is this person?

\_\_\_\_\_  
Very  
moral

\_\_\_\_\_  
Very  
immoral

10. How friendly is this person?

\_\_\_\_\_  
Very  
unfriendly

\_\_\_\_\_  
Very  
friendly

Place the letter of the choice which most nearly matches what you think this person would do in the situation described in the margin beside the number of the situation.

1. You see a person you do not recognize entering your neighbor's house when you know they are all away from home.
  - a. You call the police and report him as a suspicious person.
  - b. You go over with the intention of introducing yourself and finding out who he is.
  - c. You assume he is a friend to whom they have given a key and so do nothing.
2. You are voting in an election.
  - a. You vote for all Republicans.
  - b. You vote for all Democrats.
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3. Your roommate constantly interrupts you with conversation while you are studying. This irritates you a good deal.
  - a. You go elsewhere to study.
  - b. You explain as nicely as you can that this habit is quite annoying and ask him to stop.
  - c. You suffer in silence for a while and then lose your temper.
4. Your parents offer to replace your car for you.
  - a. You accept without hesitation.
  - b. You politely turn down their offer.
  - c. You tell them you don't really need a new car but ask if they will help you pay for some repairs on the one you have.
5. You own a house in a medium priced housing development. A Black family moves in next door.
  - a. You put your house up for sale.
  - b. You establish a polite relationship with them.
  - c. You avoid them for the most part.
6. You are choosing a course to take as an elective.
  - a. You choose a social science course.
  - b. You choose a humanities course.
  - c. You choose a science or math course.
7. You find out that a person with whom you thought you had a good relationship has said some extremely derogatory things about you behind your back.
  - a. You break off relations with that person entirely.
  - b. You behave as though nothing had happened when you

7.
  - b. interact with the person but avoid encounters whenever possible.
  - c. You confront the person about the matter.
  
8. You are choosing a place to live.
  - a. You choose a place where you can live alone.
  - b. You choose a place to share with one roommate.
  - c. You choose a place to share with two or more roommates.

Name \_\_\_\_\_

In a moment we are going to give you a chance to study the attitudes of a person you do not know who has completed a questionnaire indicating how he or she feels about some issues of interest and importance to college students. We would like you to imagine that a friend of yours in another community wants to know what this person is like. Your friend has asked you to find out what the person is like and to send along your impression.

So, please read the person's questionnaire and try to form an impression of him or her.

DO NOT TURN THE PAGE UNTIL YOU ARE ASKED TO DO SO.

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Now we would like to have you write as complete an impression as you can of this person. Include everything that you know, think, and feel about the person.

Make a check along each scale at the point most representative of your judgment.

1. How much do you think you would like this person?

Very much \_\_\_\_\_ Not at all

2. Do you know anyone like this person?

Yes, very much \_\_\_\_\_ No, not at all

3. How similar is this person's character to your own?

Not at all similar \_\_\_\_\_ Very similar

4. How well adjusted is this person?

Very well adjusted \_\_\_\_\_ Not at all well adjusted

5. How much would you enjoy meeting and conversing with this person?

Not at all \_\_\_\_\_ Very much

6. Do you think you could work effectively with this person in a discussion group?

Not at all effectively \_\_\_\_\_ Very effectively

7. How consistent is this person?

Extremely inconsistent \_\_\_\_\_ Extremely consistent

8. How intelligent is this person?

\_\_\_\_\_  
Very  
intelligent

\_\_\_\_\_  
Very  
unintelligent

9. How moral is this person?

\_\_\_\_\_  
Very  
moral

\_\_\_\_\_  
Very  
immoral

10. How friendly is this person?

\_\_\_\_\_  
Very  
unfriendly

\_\_\_\_\_  
Very  
friendly

Place the letter of the choice which most nearly matches what you think this person would do in the situation described in the margin beside the number of the situation.

1. You see a person you do not recognize entering your neighbor's house when you know they are all away from home.
  - a. You call the police and report him as a suspicious person.
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  - c. You assume he is a friend to whom they have given a key and so do nothing.
  
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  - a. You go elsewhere to study.
  - b. You explain as nicely as you can that this habit is quite annoying and ask him to stop.
  - c. You suffer in silence for a while and then lose your temper.
  
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  - a. You accept without hesitation.
  - b. You politely turn down their offer.
  - c. You tell them you don't really need a new car but ask if they will help you pay for some repairs on the one you have.
  
5. You own a house in a medium priced housing development. A Black family moves in next door.
  - a. You put your house up for sale.
  - b. You establish a polite relationship with them.
  - c. You avoid them for the most part.
  
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  - c. You choose a science or math course.
  
7. You find out that a person with whom you thought you had a good relationship has said some extremely derogatory things about you behind your back.
  - a. You break off relations with that person entirely.
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  - b. interact with the person but avoid encounters whenever possible.
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8. You are choosing a place to live.
  - a. You choose a place where you can live alone.
  - b. You choose a place to share with one roommate.
  - c. You choose a place to share with two or more roommates.

APPENDIX E  
SET INSTRUCTIONS

### Understanding Set

In a moment we are going to give you a chance to study the attitudes of a person you do not know who has completed a questionnaire indicating how he or she feels about some issues of interest and importance to college students. We would like you to imagine that a friend of yours in another community wants to know what this person is like. Your friend has asked you to find out what the person is like and to send along your impression. It is especially important for your friend to arrive at an understanding of this person. That is, your friend needs to understand the kind of person he or she is, and why he or she believes and behaves the way he or she does. Thus, your friend has asked you to give an impression of why this person is as he or she is.

So, please read the person's questionnaire and try to form an impression that provides an understanding of why he or she believes and behaves as he or she does.

### Evaluative Set

In a moment we are going to give you a chance to study the attitudes of a person you do not know who has completed a questionnaire indicating how he or she feels about some issues of interest and importance to college students. We would like you to imagine that a friend of yours in another community wants to know what this person is like. Your friend has asked you to find out what the person is like and to send along your impression. It is especially important for your friend to arrive at an evaluation of this person. That is, your friend needs to evaluate the person on the kinds of things that are most important to your friend and you in deciding whether you care for people. Thus, your friend has asked you to make an evaluation of this person in your impression.

So, please read the person's questionnaire and try to form an impression that provides an evaluation of his or her beliefs and behaviors.

### No Set

In a moment we are going to give you a chance to study the attitudes of a person you do not know who has completed a questionnaire indicating how he or she feels about some issues of interest and importance to college students. We would like you to imagine that a friend of yours in another community wants to know what this person

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is like. Your friend has asked you to find out what the person is like and to send along your impression.

So, please read the person's questionnaire and try to form an impression of him or her.

APPENDIX F  
SUMMARY TABLES FOR ANALYSES OF VARIANCE

TABLE 15

Summary Table Analysis of Variance  
Differentiation of Stranger Impressions

Source	SS	DF	MS	F	p
Total	1373.091	142	9.670		
Complexity(C)	152.893	1	152.893	17.772	.05
Similarity(S)	12.956	1	12.956	1.506	
Set(SE)	15.812	2	7.906	.919	
C X S	.043	1	.043	.005	
C X SE	18.163	2	9.081	1.056	
S X SE	.189	2	.095	.011	
C X S X SE	24.028	2	12.014	1.396	
Pooled Ind.	1127.019	131	8.603		

TABLE 16

Summary Table Analysis of Variance  
Organization of Stranger Impressions

Source	SS	DF	MS	F	p
Total	966.979	142	6.810		
Complexity(C)	24.940	1	24.940	3.777	.06
Similarity(S)	4.459	1	4.459	.675	
Set(SE)	2.783	2	1.392	.211	
C X S	1.013	1	1.013	.153	
C X SE	5.446	2	2.723	.412	
S X SE	36.097	2	18.049	2.734	.10
C X S X SE	24.459	2	12.229	1.852	
Pooled Ind.	864.934	131	6.603		

TABLE 17

Summary Table Analysis of Variance

How much do you think you would like this person?

Source	SS	DF	MS	F	p
Total	325.902	142	2.295		
Complexity(C)	1.031	1	1.031	.721	
Similarity(S)	122.304	1	122.304	85.532	.001
Set(SE)	.424	2	.212	.148	
C X S	.042	1	.042	.029	
C X SE	4.047	2	2.024	1.415	
S X SE	5.734	2	2.867	2.005	
C X S X SE	4.354	2	2.177	1.522	
Pooled Ind.	187.320	131	1.430		

TABLE 18

Summary Table Analysis of Variance

Do you know anyone like this person?

Source	SS	DF	MS	F	p
Total	438.993	142	3.092		
Complexity(C)	11.985	1	11.985	3.833	.05
Similarity(S)	11.408	1	11.408	3.649	.06
Set(SE)	.973	2	.487	.156	
C X S	1.374	1	1.374	.439	
C X SE	1.063	2	.531	.170	
S X SE	.650	2	.325	.104	
C X S X SE	2.035	2	1.018	.325	
Pooled Ind.	409.604	131	3.127		

TABLE 19

Summary Table Analysis of Variance

How similar is this person's character to your own?

Source	SS	DF	MS	F	p
Total	494.517	142	3.483		
Complexity(C)	.164	1	.164	.080	
Similarity(S)	205.168	1	205.168	100.267	.001
Set(SE)	1.118	2	.559	.273	
C X S	5.461	1	5.461	2.669	.10
C X SE	.098	2	.049	.024	
S X SE	5.612	2	2.806	1.371	
C X S X SE	.360	2	.180	.088	
Pooled Ind.	268.055	131	2.046		

TABLE 20

Summary Table Analysis of Variance

How well adjusted is this person?

Source	SS	DF	MS	F	p
Total	297.664	142	2.096		
Complexity(C)	.007	1	.007	.004	
Similarity(S)	67.002	1	67.002	41.391	.001
Set(SE)	3.743	2	1.872	1.156	
C X S	.982	1	.982	.607	
C X SE	3.470	2	1.735	1.072	
S X SE	2.159	2	1.079	.667	
C X S X SE	9.712	2	4.856	3.000	.06
Pooled Ind.	212.059	131	1.619		

TABLE 21

Summary Table Analysis of Variance

How much would you enjoy meeting and conversing with this person?

Source	SS	DF	MS	F	p
Total	465.357	142	3.277		
Complexity(C)	.837	1	.837	.358	
Similarity(S)	126.703	1	126.703	54.226	.001
Set(SE)	2.439	2	1.220	.522	
C X S	3.731	1	3.731	1.597	
C X SE	5.572	2	2.786	1.192	
S X SE	11.479	2	5.740	2.456	.10
C X S X SE	3.680	2	1.840	.788	
Pooled Ind.	306.093	131	2.337		

TABLE 22

Summary Table Analysis of Variance

Do you think you could work effectively with this person in a discussion group?

Source	SS	DF	MS	F	p
Total	419.846	142	2.957		
Complexity(C)	.012	1	.012	.006	
Similarity(S)	97.914	1	97.914	45.134	.001
Set(SE)	.764	2	.382	.176	
C X S	2.087	1	2.087	.962	
C X SE	22.548	2	11.274	5.197	.01
S X SE	13.826	2	6.913	3.187	.05
C X S X SE	1.285	2	.642	.296	
Pooled Ind.	284.190	131	2.169		

TABLE 23

Summary Table Analysis of Variance

How consistent is this person?

Source	SS	DF	MS	F	p
Total	444.364	142	3.129		
Complexity(C)	4.553	1	4.553	1.555	
Similarity(S)	14.397	1	14.397	4.917	.05
Set(SE)	8.127	2	4.063	1.388	
C X S	5.046	1	5.046	1.723	
C X SE	12.546	2	6.273	2.142	
S X SE	2.178	2	1.089	.372	
C X S X SE	10.781	2	5.391	1.841	
Pooled Ind.	383.590	131	2.928		

TABLE 24

Summary Table Analysis of Variance

How intelligent is this person?

Source	SS	DF	MS	F	p
Total	196.796	141	1.396		
Complexity(C)	6.503	1	6.503	5.515	.05
Similarity(S)	13.674	1	13.674	11.595	.001
Set(SE)	9.717	2	4.859	4.120	.05
C X S	.425	1	.425	.361	
C X SE	3.911	2	1.955	1.658	
S X SE	9.401	2	4.701	3.986	.05
C X S X SE	.112	2	.056	.048	
Pooled Ind.	153.301	130	1.179		

TABLE 25

Summary Table Analysis of Variance

How moral is this person?

Source	SS	DF	MS	F	p
Total	321.810	141	2.282		
Complexity(C)	.486	1	.486	.210	
Similarity(S)	.237	1	.237	.103	
Set(SE)	7.856	2	3.928	1.697	
C X S	1.522	1	1.522	.658	
C X SE	.116	2	.058	.025	
S X SE	5.539	2	2.769	1.197	
C X S X SE	3.793	2	1.896	.819	
Pooled Ind.	300.855	130	2.314		

TABLE 26

Summary Table Analysis of Variance

How friendly is this person?

Source	SS	DF	MS	F	p
Total	251.775	141	1.786		
Complexity(C)	.466	1	.466	.300	
Similarity(S)	31.406	1	31.406	20.248	.001
Set(SE)	3.937	2	1.969	1.269	
C X S	.226	1	.226	.145	
C X SE	.696	2	.348	.224	
S X SE	9.920	2	4.960	3.198	.05
C X S X SE	.006	2	.003	.002	
Pooled Ind.	201.640	130	1.551		

TABLE 27

Summary Table Analysis of Variance  
Total Liking Score

Source	SS	DF	MS	F	p
Total	14060.797	141	99.722		
Complexity(C)	.886	1	.886	.014	
Similarity(S)	4578.080	1	4578.080	70.232	.001
Set(SE)	156.744	2	78.372	1.202	
C X S	19.131	1	19.131	.293	
C X SE	193.626	2	96.813	1.485	
S X SE	328.723	2	164.362	2.521	.10
C X S X SE	79.476	2	39.738	.610	
Pooled Ind.	8474.027	130	65.185		

TABLE 28

Summary Table Analysis of Variance  
Predicted Behavioral Differences

Source	SS	DF	MS	F	p
Total	668.645	137	4.881		
Complexity(C)	13.172	1	13.172	3.807	.06
Similarity(S)	153.479	1	153.479	44.363	.001
Set(SE)	7.133	2	3.567	1.031	
C X S	6.577	1	6.577	1.901	
C X SE	2.810	2	1.405	.406	
S X SE	26.482	2	13.241	3.827	.05
C X S X SE	5.778	2	2.889	.835	
Pooled Ind.	435.913	126	3.460		

TABLE 29

Summary Table Analysis of Variance  
Motivation

Source	SS	DF	MS	F	p
Total	63.357	142	.446		
Complexity(C)	.031	1	.031	.072	
Similarity(S)	1.948	1	1.948	4.453	.05
Set(SE)	.144	2	.072	.165	
C X S	.330	1	.330	.755	
C X SE	1.940	2	.970	2.218	
S X SE	.774	2	.387	.885	
C X S X SE	.951	2	.475	1.087	
Pooled Ind.	57.293	131	.437		

TABLE 30

Summary Table Analysis of Variance  
Egocentricity

Source	SS	DF	MS	F	p
Total	81.664	142	.575		
Complexity(C)	.232	1	.232	.457	
Similarity(S)	.173	1	.173	.340	
Set(SE)	7.904	2	3.952	7.771	.01
C X S	1.578	1	1.578	3.102	.10
C X SE	1.018	2	.509	1.000	
S X SE	2.069	2	1.034	2.034	
C X S X SE	.640	2	.320	.629	
Pooled Ind.	66.622	131	.509		

TABLE 31

Summary Table Analysis of Variance  
Byrne Liking Scores

<u>Source</u>	<u>SS</u>	<u>DF</u>	<u>MS</u>	<u>F</u>	<u>p</u>
Total	1208.979	142	8.514		
Complexity(C)	1.267	1	1.267	.244	
Similarity(S)	439.081	1	439.081	84.736	.001
Set(SE)	2.326	2	1.163	.224	
C X S	2.721	1	2.721	.525	
C X SE	42.890	2	21.445	4.139	.05
S X SE	36.831	2	18.415	3.554	.05
C X S X SE	10.278	2	5.139	.992	
Pooled Ind.	678.810	131	5.182		

APPENDIX G

CORRELATION TABLE FOR REGRESSION ANALYSES

List of Variables

1. Liked Male Differentiation
2. Disliked Male Differentiation
3. Liked Female Differentiation
4. Disliked Female Differentiation
5. Total Differentiation
6. Stranger Differentiation
7. Stranger Organization
8. Do you know anyone like this person?
9. How similar is this person's character to your own?
10. How well adjusted is this person?
11. How much would you enjoy meeting and conversing with this person?
12. How consistent is this person?
13. How intelligent is this person?
14. How moral is this person?
15. How friendly is this person?
16. Total Liking Score
17. Number of Behavioral Differences Predicted
18. Egocentricity
19. Motivation
20. Attitude Strength
21. Byrne Liking Score
22. Actual Similarity
23. Set

TABLE 32

Correlations among 23 Variables Used in Regression Analyses

Variable	1	2	3	4	5	6	7	8	9	10
1	1.000	.568#	.662#	.553#	.826#	.429#	.054	.137	.093	.001
2		1.000	.615#	.605#	.829#	.395#	.148	.218*	.106	.004
3			1.000	.629#	.870#	.524#	.232*	.155	-.036	-.066
4				1.000	.831#	.382#	.132	.183	-.076	-.008
5					1.000	.517#	.170	.208*	.024	-.020
6						1.000	.206*	.032	-.074	-.147
7							1.000	-.135	-.110	-.198*
8								1.000	.241*	.352#
9									1.000	.603#
10										1.000

TABLE 32 - Continued

Variable	11	12	13	14	15	16	17	18	19	20
1	-.049	-.058	-.059	-.173	-.145	-.090	.195*	-.059	-.101	-.052
2	-.060	-.112	-.115	-.139	-.140	-.092	.111	-.064	.006	.019
3	-.087	-.100	-.142	-.170	-.183	-.202*	.179	.072	.104	.017
4	-.050	-.099	-.024	-.112	-.140	-.108	.240*	.025	.039	.096
5	-.074	-.109	-.102	-.177	-.182	-.147	.215*	-.005	.017	.024
6	-.121	-.170	-.166	-.077	-.077	-.188	.208*	.116	.037	.085
7	-.025	-.429#	.025	-.106	-.001	-.182	.110	.189	.401#	.130
8	.211*	.328!	.090	.096	.093	.403#	-.018	-.023	.062	-.180
9	.558#	.331#	.215*	-.002	.348#	.639#	-.578#	.046	-.054	-.013
10	.452#	.574#	.370#	.013	.386#	.721#	-.391#	.054	-.121	-.093
11	1.000	.210*	.349#	.101	.435#	.652#	-.471#	-.016	-.091	-.035
12		1.000	.201*	.051	.133	.514#	-.323#	-.071	-.209*	-.154
13			1.000	.178	.386#	.588#	-.299!	-.017	-.023	.063
14				1.000	.255!	.333#	-.105	-.077	.078	.144
15					1.000	.640#	-.336#	-.028	-.056	.014
16						1.000	-.514#	-.007	-.082	-.036
17							1.000	-.096	.122	-.025
18								1.000	-.000	-.124
19									1.000	.190
20										1.000

TABLE 32 - Continued

Variable	21	22	23
1	.061	-.084	.012
2	.124	-.007	-.028
3	-.039	.073	.027
4	-.026	.001	-.051
5	.035	-.004	-.010
6	-.028	.148	.022
7	-.083	.089	.044
8	.276!	-.160	.000
9	.700#	-.655#	-.120
10	.657#	-.472#	.033
11	.643#	-.525#	-.104
12	.368#	-.213*	-.107
13	.390#	-.227*	-.195*
14	-.039	-.004	-.120
15	.418#	-.332#	-.073
16	.727#	-.515#	-.118
17	-.533#	.502#	.139
18	.043	-.107	.266!
19	-.156	.166	-.011
20	-.077	-.010	-.333#
21	1.000	-.581#	-.116
22		1.000	.128
23			1.000

\*p < .05, !p < .01, #p < .001