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**IMPRESSION CHANGE AS A MEANS OF
REDUCING COGNITIVE DISSONANCE**

by

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ABSTRACT

This investigation extended Festinger's (1957) theory of cognitive dissonance into the area of person perception. Under the guise of a study in dormitory living, dormitory students were led to believe either that they would or would not be sharing a room in the future with a negative other. They were also informed that they were either low, moderate or high in similarity to this negative other. The major response measure was the extent to which the negative first impression changed in a more positive direction. The results showed that both proximity and similarity manipulation had the predicted effect. Subjects expecting to be rooming with the negative other tended to perceive him as more favorable than those not expecting to be rooming with him. The more similar in personality Ss believed they were to the negative other, the more favorably they perceived him. However, the trend here was not linear as predicted. A curvilinear interpretation was suggested. In terms of the interaction effect, proximity and similarity were not seen as combining in an additive fashion unless certain assumptions were met relevant to changes in importance of the situation due to the interaction. A cognitive separation formulation was offered as another explanation. An alternative interpretation of the results was suggested, but was considered unlikely. The findings were also related to present research in person perception and suggestions were made as to their possible application.

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FORMULATION OF THE PROBLEM

Introduction

The present paper is an attempt to extend cognitive dissonance into the area of person perception. Specifically it attempts to show that one determinant of the direction in which a first impression will change (i.e., either positive or negative) can consist of dissonance inducing factors. The general format of the paper will be first to present a brief outline of the theory of cognitive dissonance, and then to see how it relates to some studies investigating impression formation under conditions of stimulus inconsistency. This will lay the groundwork for the experiment under consideration here.

Dissonance theory, as presented by Festinger (1957), is a cognitive theory encompassing many areas. Basically it asserts that cognitions, or the "knowledges" held by man, exist in certain relationships to each other. These relationships can be either irrelevant or relevant. Two cognitions A and B would be irrelevant if A were in no way related to B as, for example, if A represented the cognition, "I smoke," and B represented, "Today is Sunday." Cognitions A and B would be relevant if A were in some way related to B. Relevant cognitive elements can be broken down into those that are consonant and those that are dissonant. If cognition B represented "Smoking relaxes me," it would be an implication of A in the sense that belief in B would be in accord with belief in A. This would constitute a consonant relationship. If, however, cognition B represented "Smoking causes cancer," it would

follow from the opposite of A and the relationship would be dissonant. Festinger says that two elements are dissonant if, "considering these two alone, the obverse of one element would follow from the other" (p. 13).

Dissonant relationships can have magnitudes of varying degrees. According to Festinger (1957), one determinant of the magnitude of dissonance is the importance of the dissonant elements. The greater the importance, the greater the dissonance. Thus, the cognitive elements "I smoke" and "Smoking causes cancer" would produce greater dissonance than would the cognitive elements "I chew gum" and "Chewing gum causes cavities" if, for a certain individual, the possibility of getting cancer were more serious than that of getting cavities.

If a cluster of relevant elements were to be considered, the magnitude of dissonance associated with any one focal element in that cluster would be related to the number and/or importance of the cognitive elements opposing that focal element (dissonant to it) relative to the number and/or importance of the cognitive elements supporting it (consonant to it). The larger this ratio is, the greater is the dissonance.

Festinger (1957) says that the existence of dissonance results in a motivated state of affairs leading to pressures to reduce the dissonance. The strength of this pressure varies with the magnitude of dissonance. Dissonance reduction occurs when the dissonant/consonant ratio corresponding to some focal element is in some way reduced. One way in which this can come about is by changing the cognitive elements. Since cognitive elements correspond in some way to physical, social and psychological realities, whether or not such a change can be made depends

on the difficulty of changing the underlying reality. Thus, some cognitive elements are said to be more resistant to change than others. How dissonance is reduced or eliminated depends on the relative resistance to change of all the cognitive elements, the less resistant elements being affected first.

Much of the research in dissonance theory centers around three types of experiments. In "free-choice" experiments Ss are usually asked to make a choice between alternatives. External pressures are not required to produce a decision since in most studies the positive attributes of the alternatives outweigh the negative ones, thus providing the necessary lure toward decision making. Alternatives in "free-choice" studies have ranged from consumer articles (Brehm, 1956) to toys (Brehm and Cohen, 1959; Brock, 1963) to gambling strategies (Festinger, 1957, pp. 126-131, 162-176; Cohen, Brehm and Latane, 1959). The basis of "free-choice" studies lies in the postchoice dissonance said to exist as a result of the decision. Such dissonance reflects the cognitive inconsistency of knowing one's choice of alternatives and being aware, at the same time, that not only does this choice have negative features, but that the rejected alternative has positive features. Attempts to reduce such dissonance have ranged from enhancement of the chosen alternative and devaluation of the rejected alternative (Deutsch, Krauss and Rosenau, 1962) to selective exposure to information (Festinger, 1957, pp. 126-131, 162-176; Cohen, Brehm and Latane, 1959).

A choice also underlies the "forced-compliance" experiment. Here S has to choose between doing something that he wouldn't ordinarily do or not doing it. Some external pressure is usually needed to induce S

to commit himself to the discrepant act. This pressure can be either positive, in the form of a reward, or negative, in the form of a punishment. In "forced-compliance" situations, discrepant acts have varied from reading obscene words (Aronson and Mills, 1959) to eating grasshoppers (Smith, 1961). The basis for dissonance in these experiments lies in the inconsistency between believing one way and acting in a contrary way. Attempts at dissonance reduction have been demonstrated in such processes as attitude change toward the discrepant act (Rabbie, Brehm and Cohen, 1959) and changes in the degree of commitment toward the discrepant act (Brock and Buss, 1962).

In "exposure" experiments Ss are confronted with information that is contrary to some knowledge they possess. Thus, mothers who believe that a child's behavior is mostly inborn may be confronted with information that it is mostly learned (Adams, 1961); teenagers may be advised that the minimum age for driving be increased (Allyn and Festinger, 1961); friends may learn that they disagree with each other in reference to a case study of juvenile delinquency (Zimbardo, 1960); and so on. The basis for dissonance here is obviously the inconsistency between the cognitive elements held before the exposure and those acquired as a result of the exposure. Attempted dissonance reduction may take a variety of forms such as attitude change toward the position of the discrepant information (e.g., Allyn and Festinger, 1961).

In all three types of experimental situations magnitude of dissonance associated with any given cognitive element is said to be a function of the portion of cognitions that are dissonant to that

cognitive element relative to those that are consonant, where each element is weighted for importance. In a "free-choice" situation this might be interpreted as saying that the more attractive the rejected alternative, the greater the dissonance (Brehm, 1956) since a more attractive rejected alternative means more reasons not in support of the decision made (or more cognitions dissonant to that corresponding to one's behavior). In a "forced-compliance" situation increased dissonance might relate to decreases in the reward for commitment to a discrepant act (Festinger and Carlsmith, 1959) since the smaller the reward, the fewer the reasons in support of the discrepant act (or the fewer the cognitions consonant to that corresponding to one's behavior). And finally, in the "exposure" situation, magnitude of dissonance might be interpreted as saying that the more effort involved in confronting the discrepant information, the greater the resulting dissonance (e.g., Cohen, 1959). The explanation here would be that more effort means more reasons not to expose oneself to discrepant communication (or more cognitions dissonant to that corresponding to one's behavior).

As stated above, the present paper attempts to extend dissonance theory into the area of person perception. Specifically it involves an investigation of impression change as a means of reducing cognitive dissonance. In the present context, impression change refers to a modification of a first impression. The study of first impressions itself has been the target of considerable research ever since the now classic report by Asch (1946) was published. A review of this research will demonstrate a fundamental similarity it bears to dissonance theory.

Asch (1946) interprets the impression forming process along traditional Gestalt lines. He says that when a perceiver is confronted with an array of characteristics depicting a stimulus person, he perceives them in relation to one another and tries to make the best sense out of them: the stimuli somehow "fit" together to produce the best possible perceptual structure. Asch supports his thesis with a series of ten experiments. The general procedure underlying each was to present Ss with descriptive traits of a stimulus person and have them form first impressions in terms of written descriptions, checklist responses and trait rankings. For example, in his first experiment one group of Ss was asked to form an impression of an individual described as "intelligent, skillful, industrious, warm, determined, practical, cautious;" another group was asked to describe an individual who possessed these same characteristics with the exception that the trait "warm" was changed to "cold." Asch found that in each case the impression formed represented an attempt to integrate all traits in a meaningful manner. Further, he found that some traits (central) seemed to have more weight than others (peripheral) in terms of influencing the final impression. Subsequent investigations supported this position (e.g., Mensh and Wishner, 1947; Veness and Brierley, 1963).

Asch (1946) states that the Gestalt process of trait interaction occurs under all situations, even when traits are not consistent. He supports this point in another experiment where Ss were presented with traits which were somewhat contradictory. These were "intelligent, skillful, industrious, determined, practical, cautious, evasive." It

seemed that the trait "evasive" caused the most trouble to the Ss since it was most difficult to fit it in with the others. Yet, as Asch points out, "we are not content simply to note inconsistencies or to let them set where they are. The contradiction is puzzling, and prompts us to look more deeply. Disturbing factors arouse a trend to maintain the unity of the impression, to search for the most sensible way in which the characteristics could exist together, or to decide that we have not found the key to the person" (p. 285).

It should be pointed out here that what Asch (1946) means by "unity of the impression" is a single interaction of traits which results in some integration of their meanings. This process, which occurs regardless of the relationship between traits, is based on stimulus field dynamics. Subsequent investigations, directed to situations of stimulus inconsistency, emphasized the individual differences in impression formation. For example, Haire and Grunes (1950) asked two groups of Ss to form an impression of a factory worker who was described by a series of traits that was identical for the two groups with the exception of the trait "intelligent" which was given to one group, but not the other. Similarly, Pepitone and Hayden (1955) asked Ss to form impressions of persons described in terms of incompatible social affiliations, i.e., as belonging to five upper socioeconomic groups and to one deviant group. Gollin (1954) used a motion picture to present a "star" behaving in three different ways: either she was promiscuous, kind or neutral. In all cases Ss were asked to describe their first impressions of the stimulus persons involved.

The general findings of these and other studies (e.g., Kastenbaum, 1951, Dinnerstein, 1951) was that individuals differ in how they resolve their inconsistency. That is, although a perceiver attempts to handle the inconsistency, he does this in a particular way. Thus, he may integrate all the traits, deny some of them, etc.

Several interpretations have been offered to account for these individual differences. For example, Gollin (1954, 1958) relates them to individual differences in underlying perceptual-cognitive systems as reflected in the developmental views of Piaget (1952) and Werner (1948). Similarly, Crockett (1965) speaks of cognitive complexity as the crucial variable, while Cohen (1961) relates it to the motivational set of the perceiver. In any event all would agree that something additional to field dynamics plays an important role in impression formation.

The general conclusions drawn by Asch (1946) and his followers bear a striking similarity to dissonance theory. It is easy to see how the above studies of impression formation can be interpreted by saying that Ss were motivated to reduce their dissonance stemming from conflicting information. Such an assumption was indeed made by Nidorf and Crockett (1965) in a study of stimulus inconsistency in impression formation. This similarity is obviously due to the fact that both the work of Asch and Festinger (1957) is colored by the Gestalt orientation. Deutsch and Krauss (1965) state this aptly as follows:

The Gestalt view that perceptual organization tends to be as "good" as possible, that certain

configurations are preferred because of their simplicity and coherence, has been the starting place for a number of influential theories in social psychology, such as Heider's theory of cognitive balance (1946; 1958), Newcomb's theory of communicative acts (1953), and Festinger's theory of cognitive dissonance (1957). These theories are all based on the central idea that an organization or structure of beliefs and attitudes or of interpersonal relations can be imbalanced, disharmonious, dissonant, or incongruous, and that when imbalance exists a tendency will arise to change one's beliefs and attitudes until they are balanced. The change may occur by alteration of the reality to which the beliefs and attitudes refer or by direct modification of the beliefs (p. 22).

However, even in view of this similarity, significant differences do exist between the two viewpoints. Asch's (1946) theory, as stated above, is concerned with a simple interaction of traits, be they consistent or not, until their meanings fit into an integrated whole. The dynamics underlying this behavior are not motivational ones, but instead, stimulus field dynamics. In this respect, Asch's position seems to be very close to that of Heider (1946; 1958). This emphasis on autochthonous determination can be seen in Asch's description of trait interaction: "There takes place a process of organization in the course of which the traits order themselves into a structure. It may be said that the traits lead an intensely social life, striving to join each other in a closely organized system" (p. 284). Festinger's (1957) view, on the other hand, is that dissonance reduction is a need that operates in much the same fashion as do other needs. It is a need which originates in either deliberate or indirect social training. Indeed, Brehm and Cohen (1962)

seem to feel that the very power of dissonance theory stems from the fact that the motivational state associated with dissonance "always occurs when there is some prior motive associated with the cognitions that are dissonant" (p. 228). Thus, the strength behind the motive one feels to resolve his dissonance stemming from his knowledge that smoking leads to cancer is based in his desire to gain pleasure from smoking on the one hand, and his desire to avoid a painful death on the other.

In addition to the motivational status of dissonance as compared to that of Asch's (1946) trait inconsistency, a further difference between the two viewpoints lies in their predictions concerning the consequences which ensue following dissonance or inconsistency as the case may be. While neither formulation makes explicit predictions concerning these consequences, Festinger (1957) handles the problem by appealing to the notion of resistance to change of cognitive elements. His assumption is that in situations where dissonance is reduced through a change in cognitive elements, those elements that are least resistant to change will change first. Asch, on the other hand, makes no statement regarding any specific consequences following trait interaction. As seen above, it was only subsequent research that explored some of the variables associated with differential reactions to trait inconsistency (Gollin, 1954, 1958; Crockett, 1965; Cohen, 1961).

A final difference between Festinger (1957) and Asch (1946) concerns the question of magnitude. Festinger's position, as outlined above, makes specific mention that dissonance can exist in greater or

lesser amounts, and this itself is a function of the number of dissonant to consonant elements weighted for importance. Nothing can be found in Asch's viewpoint in reference to the magnitude of trait inconsistency.

It should be pointed out that Asch (1946) himself never intended to develop a comprehensive theory. While it may thus seem somewhat unfair to compare them, the writer feels that this is necessary in order to best understand the dynamics underlying the impression forming process. Thus, the foregoing was presented as if Asch's position were systematically formulated.

In this vein one can see the higher degree of comprehensiveness associated with the dissonance formulation. For instance, the greater differentiation of Festinger's (1957) position allows for more refinement concerning situations of impression formation and change. This can be seen in the following hypothetical situation. Consider a perceiver forming a first impression of a stimulus person described by two adjectives, one favorable and the other unfavorable. Suppose further that the perceiver is informed that this stimulus person has personality characteristics quite similar to his own. Will his impression change in any way as a result of this additional information? While Asch's (1946) formulation could not answer this, dissonance theory would predict greater attempts at dissonance reduction after the personality information than before, and hence a definite impression change. The basis for this prediction would lie in the assumption that

the personality information would make the whole situation more important to the perceiver than it was before this information was presented. The greater the importance, the greater the dissonance, and hence the greater the pressure toward dissonance reduction resulting in the impression change. It is thus evident that, in this case, Festinger's position concerning magnitude of dissonance would be the key factor determining the differentiated prediction.

The Present Study

The present study is an attempt to investigate impression change as a means of reducing cognitive dissonance. Interpersonal perception, both as a source of and a means of reducing cognitive dissonance, was first considered by Festinger (1957) in his discussion of the role of social support. In reference to dissonance arousal he asserts that in situations of social disagreement, one variable affecting importance (which in turn affects the magnitude of dissonance) "is the attractiveness of the person voicing the disagreement or of the group within which it is voiced" (p. 180). By the same token, dissonance resulting from a disagreement can be reduced by a modification of interpersonal perception so that the disagreeing individual is perceived as a "stupid, ignorant, unfriendly and bigoted individual" (p. 183). Similarly, the group within which the disagreement is voiced can be perceived as less attractive. Examples of the former can be seen in studies by Worchel and McCormick (1963) and Collier (1964).

The relationship between interpersonal perception and dissonance arousal and reduction is not limited to situations involving social disagreement. The present investigation attempts to show that if a first impression formed by a perceiver is dissonant with some cognition(s) held by that perceiver, then this impression will change in the direction of greater cognitive consistency. Consider a stimulus person who elicits a negative reaction from a perceiver in an impression forming situation. What cognitions might disagree with that associated with this stimulus person and serve as a source of cognitive dissonance? To answer this question, we need to know what follows from the obverse of cognition referring to an unpleasant individual. This in turn can be examined by first considering what cognitions would directly follow from awareness of an unpleasant person, that is, by considering some consonant cognitions. What then can be said follows from one's knowing an unpleasant individual? Several possibilities come to mind immediately. For one, if I find someone unpleasant, I certainly wouldn't want to associate with him. Furthermore, I wouldn't want to be like him. I would also tend to attribute bad acts to him and to find more responsibility, more intention and less justifiability behind these acts, and so on.

The present study emphasizes the first two cognitions offered above as examples, namely, those reflecting proximity and similarity. It is thus an attempt to show that cognitive dissonance will result if a perceiver is made aware of some degree of proximity to an unpleasant person and/or some degree of similarity to him.

Proximity As A Source Of Dissonance Arousal

Cognition of proximity refers to the perceiver's knowledge that he and the stimulus person are or will be in close physical association with each other. Such would be the case, for instance, of new roommates in a college dormitory or even as simple a situation as two individuals serving as partners for a psychological experiment. That cognition of proximity will be a source of dissonance is based on the assumption that people generally tend to avoid associating with someone who is unpleasant. A possible reason for this might lie in reinforcement theory. Several theorists (e.g., Newcomb, 1956) feel that attraction towards others is directly related to how much they can reward us. Thus, if an individual likes to play tennis, he will tend to evaluate his partner favorably if the latter is instrumental in attaining this goal. A reasonable correlate to this hypothesis would be that an individual's disposition varies with his potential as a rewarding social object. That is, we tend to associate pleasant individuals as those who are likely to reward us and unpleasant individuals as those who are unlikely to reward us. If this were true, then pleasant individuals would be sought out while unpleasant ones avoided.

The dissonance stemming from proximity results from not wanting to associate with the unpleasant person and being forced to. Perhaps a comparable analogy to this would be the Brehm (1960) study in which Ss were committed to eating a disliked vegetable. In eating this vegetable

they in essence associated themselves with something which, under normal circumstances, they would not associate themselves with. Similarly, when a perceiver associates with, or anticipates an association with, an unpleasant person, he is doing something which he ordinarily would not do. One way of resolving the dissonance in the latter situation would be to underestimate the unpleasantness of the stimulus person. This would result in a less dissonant relationship since the perceiver would now be aware that he is associating with an individual who is not necessarily unpleasant. Reducing dissonance in this manner does not preclude it from being resolved in other manners. For example, the perceiver may underestimate the intensity of his association with the stimulus person as a means of resolving his dissonance. If, however, this and other modes of dissonance reduction are blocked, it is reasonable to assume that the major source of dissonance reduction will involve a change in cognition relevant to the pleasantness of the stimulus person. The first prediction of this study is thus:

Hypothesis 1: Impressions formed of a negative stimulus person will be more favorable under conditions in which the perceiver anticipates a social interaction between himself and the stimulus person than under conditions where no such interaction is anticipated.

A similar hypothesis was tested in a study by Mirels and Mills (1964) who investigated the dissonance inducing properties of proximity. Mirels and Mills assumed that dissonance induced under proximity with an

unfavorable person can be reduced by exaggerating important traits in this person in addition to perceiving him in a more favorable light. In their study they also varied choice to see what effects this would have on dissonance arousal and reduction. Mirels and Mills told their Ss they were doing a study on the relationship between social sensitivity and problem solving and also on group versus individual problem solving. Ss were then informed that some of them would be assigned to work either individually or with a partner, and that some of them would be given a choice in this respect while others would not be given this choice. In reality, no S was assigned to work individually, and any S who chose to do so was eliminated from the experiment. Under the guise of measuring social sensitivity Ss were then given what they thought were each others questionnaire responses. All these responses were designed to elicit either a negative or a neutral reaction. Some Ss were informed that they were reading the responses of their future partners while others were not so informed. After reading over the questionnaire responses, all Ss rated the individual depicted by means of traits which measured pleasantness and competence. The results showed that when the S received what she thought were the responses of a future unpleasant partner, she tended to rate this person as less unpleasant and more competent than when she received the responses of an unpleasant nonpartner. No such differences were found with a neutral partner versus a neutral nonpartner. The results of varying choice were not as expected: choosing to work with a partner who turned out to be unpleasant did not result in perceiving her as less unpleasant than being assigned such a partner.

However, a chosen unpleasant partner was seen as more competent than an assigned unpleasant partner. Neither of these results was statistically significant. Mirels and Mills suggest that these negative findings in reference to choice might reflect an actual lack or difference in the degree of choice experienced by the chosen and assigned Ss.

In their application of dissonance theory to the problem of racial prejudice, Brehm and Cohen (1962) also elucidate the role of proximity in dissonance arousal. They point out that a decrease in prejudice following commitment to an irrevocable interracial policy can be interpreted as an instance of dissonance reduction. Commitment to such a policy means having contact or being associated with people whom one usually does not have relations with. Brehm and Cohen support their point by citing two studies, one by Deutsch and Collins (1951) and the other by Wilner, Walkley and Cook (1955). Both studies investigated the correlates of attitude changes in housewives living in segregated versus integrated housing projects. One variable investigated was the proximity to Negroes in the housing projects. It was found that the greater the proximity to Negroes, the more positive attitude change toward them occurred.

The effects of anticipated proximity were also investigated by Cohen (see Brehm and Cohen, 1962, pp. 78-81) utilizing an important real-life situation. College Ss who were planning to become engaged at some specified future time were measured on how much pre-engagement conflict they were experiencing. It was assumed that any such conflict

would be dissonant with the intense proximity anticipated between Ss and their fiancées. Moreover, the greater this pre-engagement conflict, the stronger the dissonance. Ss were also measured both before and after their decision to become engaged on subjective feelings of need and devotion. It was expected that any dissonance experienced as a result of the engagement would be reduced by an increase in need and devotion. The results showed that this was the case. Moreover, high dissonance Ss showed greater changes in need and devotion after their engagement than did low dissonance Ss.

Similarity As A Source Of Dissonance Arousal

Cognition of similarity refers to the perceiver's knowledge that he and the negative stimulus person have similar personalities. If the assumption is made that people generally have a positive self-image, the dissonance inducing property of similarity is evident: the perceiver will at least consciously have a positive self-image and at the same time be given information that implies he is negative. Furthermore, it would seem that the more similarity there is, the more dissonance there should be. While dissonance theory does not state any relationship between magnitude of dissonance and the value of a particular continuous variable, Brehm and Cohen (1962) suggest that such a relationship might be linear. They state that knowledge can be either discrete (e.g., knowledge that a person is either living or dead) or continuous (e.g., knowledge related to the color of a shirt) and that it is very likely that different values of a continuous cognitive variable will

result in different amounts of dissonance when associated with another cognitive element. Brehm and Cohen provide an example of an individual who buys a car with the expectation that its top speed will be 150 miles per hour. If the top speed is, indeed, 150 miles per hour, the individual's cognition of this would be consonant with his cognition of having bought the car. What cognition would be dissonant with the expectation of 150 miles per hour top speed? The answer to this is any speed less than 150 miles per hour. Moreover, the less the speed, the greater the dissonance. Brehm and Cohen suggest that Festinger's (1957) definition of dissonance be qualified to predict a dissonant relationship in situations where "X follows from any variation from Y in the direction of being obverse" (p. 16).

As with proximity, the dissonance resulting from similarity can be reduced by reducing the unpleasantness of the stimulus person. This would resolve the problem since the perceiver would now be aware that he is similar to an individual who does not have negative attributes. Other modes of dissonance reduction might also occur (e.g., a reduction in self-esteem), but if these are assumed to be weak, or if they can be thwarted, the prediction can be made that:

Hypothesis 2: The greater the similarity a perceiver sees between his personality and that of a negative stimulus person, the greater the extent to which the perceiver's impression of the latter will be more favorable.

The effects of discrepant information about oneself as a source of dissonance arousal and modifications in interpersonal perceptual

processes as a means of dissonance reduction has been the subject of some investigations. One such investigation was that of Bramel (1962) who tried to show that a perceiver who is made to believe he has homosexual tendencies will attribute similar tendencies to a stimulus person as a means of reducing cognitive dissonance. In such a situation dissonance reflects a discrepancy between the perceiver's own beliefs concerning his masculinity and the evidence showing his homosexuality. Bramel states two reasons why projection is a way of reducing dissonance. In the first place, if the perceiver attributes homosexuality to a respected stimulus person, the negative tone of his own homosexuality would be diminished. Secondly, if he projects it onto a member of his reference group, he would not deviate too much from this group. Bramel divided his Ss into high and low self-esteem groups based on bogus results of previous personality tests they had taken. Pairs of Ss sat at a table across from each other. In front of each S was a viewer which portrayed pictures of males in various stages of undress. Each S was to look at the pictures and indicate how sexually aroused he was by means of reading his psychogalvanic skin response. This response was portrayed as an indicator of real feelings, and for the experimental Ss it thus indicated a significant amount of homosexuality. Then S was to estimate how sexually aroused his partner was. It was predicted that Ss with high self-esteem would attribute more homosexuality to their partners than those under low self-esteem. The rationale here was that the lower the self-esteem of an individual, the less dissonant would be evidence of homosexual tendencies in him. The results confirmed the hypothesis.

In a follow-up study Bramel (1963) showed that attribution of homosexuality was a function of the similarity between the perceiver and the stimulus person. Using a procedure similar to the earlier one, Bramel induced dissonance in one group of Ss by having them believe they had homosexual tendencies and compared their interpersonal perception to a control group. He found a difference in the attribution of homosexuality between these groups only when the stimulus person was depicted as a member of social categories similar to the perceiver's (i.e., a student). When he was presented as a member of a different social category (i.e., a criminal), no difference was found.

Glass (1964) reports a study relating impression change to cognitive dissonance. He used as Ss a group of students who had previously indicated that they were opposed to the use of electric shock on humans for the purposes of experimentation. The Ss were first given a series of tests designed to measure intelligence and personality. At a later time they were called back to obtain the results of these tests and also to take additional ones. The results they received were actually predetermined by E in such a manner as to be either ego enhancing or ego deflating. After receiving these bogus results, Ss were told that their next task would be one in impression formation. Individually each S was introduced to a confederate stimulus person who was purportedly another S. After working at some simple tasks with this confederate, S was asked to describe his impression of him by responding to three questions (e.g., "Would you like

Mr. _____ as a roommate?"). All Ss were then informed that their next task would involve a conceptual learning task in which S would serve as experimenter and the confederate as subject. In this learning task the confederate was to be punished by S every time he made a mistake. The punishment consisted of an electric shock. Before the task was initiated, some Ss were given a choice as to whether or not they wanted to do it. Others were not given this choice. Following the conceptual learning task, all Ss were asked to describe their impression of the stimulus person once again since they were now better acquainted with him. They were to answer the same three questions in reference to him. The results showed that Ss high in self-esteem who had a choice in whether or not they wanted to give the shock changed their impression most in a more negative direction. Glass explains these results by attributing the most dissonance to this group of Ss. The dissonance reflected the high feeling of self-esteem which the aggressor held and his belief that he had willfully injured another individual. Dissonance was reduced by perceiving this individual in a less favorable light.

A study by Davis and Jones (1960) can also be interpreted as one in which dissonance reflects discrepant information about oneself. In this study dissonance was induced by having Ss negatively evaluate a stimulus person toward whom they had a favorable attitude. Although this can be interpreted as dissonance inducing because of the inconsistency between believing a person is pleasant and evaluating him as

unpleasant, the present interpretation will be that the dissonance reflects something like believing certain principles about oneself on the one hand (e.g., that one does not lie), and not abiding by them on the other. Such an interpretation is in line with Aronson's (1960) belief that many situations involving commitments to discrepant positions reflect an inconsistency between an individual's belief that as a rational man he will behave with integrity, and his failure to do so.

Davis and Jones informed their Ss that they were to form a first impression of another S who was situated in an adjacent room. In this room, however, there was no other person, but instead a tape recording of an interview between E and a confederate stimulus person. S was allowed to "overhear" the content of this interview in which E first orients the stimulus person to the experiment and then the latter answers a standard set of questions about his background, his family, etc., and also responds to some questions concerning moral dilemmas. The remarks made by the stimulus person during this interview were pre-arranged so that they conveyed a picture of a moderately well-liked undergraduate. S was to indicate the impression he received by rating the stimulus person on twenty simple declarative sentences, ten of which were positive (e.g., "I think that he is basically a modest, unpretentious person"), and ten negative (e.g., "He strikes me as somewhat arrogant and concented"). S was then told that part of the experiment involved seeing how people react to evaluations of them made by others. Specifically, the concern was to see how the stimulus person would

react to either a very complimentary or a very negative impression of himself made by S. S was then given either some choice or no choice to read over a loudspeaker a prearranged negative evaluation of the stimulus person which purportedly was being heard by the latter. In addition, S was told that either he would get a chance to see the stimulus person after the experiment was over in order to relate his real impression of him or that such an interaction was impossible. Thus, there were four treatment groups: choice, no choice, anticipation of interaction, and nonanticipation of interaction. After reading the negative evaluation, E gave S a self-rating form purportedly completed by the stimulus person and asked him to integrate this information to the original impression by rerating the stimulus person on the twenty sentences. The before-to-after change in impression was the main dependent measure used in the study. The hypothesis tested was that Ss who were given a choice to evaluate the stimulus person negatively and who didn't anticipate seeing him later on would experience the most dissonance. According to the authors, this hypothesis proved tenable in light of the greater negative impression change in the choice-nonanticipation group as compared to the other three groups.

Underlying the above studies was the assumption that interpersonal perceptual processes could be so modified as to serve the function of media for dissonance reduction. Whether this modification consisted of a change in the favorability with which a stimulus person was viewed (Davis and Jones, 1960; Glass, 1964) or of the attribution of

homosexual characteristics (Bramel, 1962, 1963), it was shown also to relate to certain conditions reflecting varying degrees of dissonance strength. Finally, an attempt was made, either explicitly or implicitly, to close off alternative avenues of dissonance reduction available to the subjects. This last point is most evident in a comparison of the Glass (1964) study with one quite similar to it by Buss and Brock (1962). While both studies investigated the effects of aggressive behavior (electric shock) on dissonance arousal and reduction, Glass did not want his Ss to reduce dissonance by minimizing the pain associated with shock, as did Ss in the Brock and Buss study. So he closed off this avenue of dissonance reduction by having his confederates gasp audibly each time they received a shock.

The crucial differences between the reported studies on discrepancy in self-concept and the present investigation relate to the manner in which this discrepancy is presented. In the studies reported above, the discrepancy resided in either a voluntary or involuntary action on the part of the perceiver that contradicted the expectations he had about himself. That is, the perceiver either did something purposely which was inconsistent with his self-image, or else was made aware of involuntary reactions inconsistent with this image. In any event, interpersonal perceptual processes were utilized here as media of dissonance reduction. In the present investigation, these processes are utilized both as sources of discrepancy to the self-image and as media for dissonance reduction.

It should be emphasized at this point that the present study, like several of those reported above, is one of impression change and not impression formation. The latter corresponds to the initial negative impression that the perceiver gets of the stimulus person. The present interest lies in the dissonance which results when the perceiver is led to believe that he is going to be interacting with the negative stimulus person and/or that he shares some degree of personality similarity to him. More specifically, the focus of the present study is to see to what extent the first impression changes in a more favorable direction as a result of this dissonance.

In the present study, six kinds of perceivers are the targets of investigation. Consider six perceivers, three of whom are anticipating a future association with a certain stimulus person (proximity perceivers) while the other three are not (nonproximity perceivers). Furthermore, the perceivers within each group are made aware that they share a certain degree of similarity to the stimulus person, this similarity being either low, moderate or high. If the first impression of the stimulus person can be assumed to be negative, then, according to the first and second hypotheses stated above, we can expect to find differences in impression change resulting from both proximity and similarity factors. Can we predict any other source of difference in impression change?

Compare for a moment the cognitive structure of the no proximity-high similarity perceiver with that of the proximity-low similarity perceiver. In the former perceiver, dissonance is induced by having

him believe that he is very similar to an unpleasant individual. The latter perceiver experiences dissonance mainly as a result of his expectation of a future association with this individual. What can be said about the comparative magnitudes of these dissonances?

Festinger (1957) states that the magnitude of dissonance between two cognitive elements is a function of the importance of these elements. The question then becomes; which pair of elements is more important, the one relating to proximity or the one relating to similarity? In other words, what is more important to a perceiver, knowledge that he will associate with an unpleasant person or knowledge that he is like an unpleasant person? It is obvious, on an intuitive level at least, that the latter cognition is far more salient than the former. The reason for this is that it is ego-relevant, it "hits home" so to speak. This is implied in a discussion by Brehm and Cohen (1962) on the effects of the importance of cognitions. These authors cite studies by Cohen (1962); Cohen, Brehm and Latane (1959); Mill, Aronson and Robinson (1959); Rosen (1961); and Zimbardo (1960). In all these studies, importance was manipulated, but in the Mills et al. and Rosen studies, it failed to have the hypothesized effect. The reason for this, say Brehm and Cohen, is that these studies appealed to external factors in varying importance while the other studies appealed to more central aspects of the self. Thus, in the Mill et al. and Rosen experiments, Ss were given a choice as to what kind of exam they would like to take, essay or multiple choice. The chosen exam would count as 5% of the

total grade (low importance) or 70% (high importance). On the other hand, Zimbardo varied importance by telling Ss who disagreed in their judgments that such disagreement either reflected core personality factors (high importance) or didn't mean much (low importance). Brehm and Cohen say that "it is plausible to assume that extrinsic forces like examination grades in a context where they are a common part of the routine are less powerful than forces having to do with the individual's self-concept or status. Perhaps the fact that the Cohen 'exposure' study, the Zimbardo 'exposure' study, and the Cohen, Brehm and Latane 'free-choice' study did manipulate aspects of the person's self-concept was responsible for their success with the importance variable" (p. 62).

Another possible source of difference between similarity and proximity might stem from temporal considerations. If the assumption can be made that one determinant of importance between two dissonant cognitions is the duration of time they must be associated together, then the greater importance of similarity over proximity is evident. Such an assumption can readily be made in situations of "forced-compliance" or "exposure." Here the prediction would be that the longer the individual has to commit the discrepant act in the former case or to expose himself to discrepant information in the latter, the greater the dissonance. In the impression forming situation, proximity with a negative stimulus person is, in most cases, perceived as terminable. That is, an association with a negative individual can be seen as ending at some specific time. Knowledge relating to the unpleasantness

of oneself, however, may not be perceived in this way. A related point here would be that under a situation of proximity a perceiver would not anticipate spending every moment of a certain time period with the negative stimulus person. Under similarity, on the other hand, it would be difficult for the perceiver to escape his own negative features.

Still another source of difference between proximity and similarity relates to the expectations of the perceiver. If it can be assumed that importance and expectancy are inversely related so that the more an event is expected to occur, the less important it seems when it occurs, then similarity again comes out as more important. The reason for this is that in the proximity condition, a negative stimulus person is more likely to be expected than in the similarity condition. An analogous situation would be that of a student expecting a test result. In one case his expectations would not include the possibility of a failing grade while in another they would. The assumption being made here is that a failing grade in the former condition would seem more important than in the latter.

With these assumptions in mind, it seems reasonable to say that there will be more dissonance under cognition of similarity than proximity, and a greater attempt at dissonance reduction in the former situation compared to the latter. Thus, it can be predicted that:

Hypothesis 3: Impressions formed of a negative stimulus person will be more favorable for the no proximity-high similarity perceiver than for the proximity-low similarity perceiver.

Consider next the cognitive structure of the two high similarity perceivers. Under no proximity, the perceiver is confronted with information concerning a negative stimulus person and also information reflecting his high similarity to this individual. Under proximity, the perceiver is made aware both that he shares a high similarity to the stimulus person and that he must associate with him in the future. How do the magnitudes of dissonance compare in these two cases? Festinger (1957) suggests that under such circumstances, the proximity perceiver should experience more dissonance since in his case there are more elements dissonant with the cognition under consideration (i.e., the negative stimulus person) than in the case of the no proximity perceiver. This is implied in the following quotation:

Let us consider now the total context of dissonances and consonances in relation to one particular element. Assuming momentarily, for the sake of definition, that all the elements relevant to the one in question are equally important, the total amount of dissonance between this element and the remainder of the person's cognition will depend on the proportion of relevant elements that are dissonant with the one in question. Thus, if the overwhelming majority of relevant elements are consonant with, say, a behavioral element, then the dissonance with this behavioral element is slight. If in relation to the number of elements consonant with the behavioral element the number of dissonant elements is large, the total dissonance will be of appreciable magnitude. Of course, the magnitude of the total dissonance will also depend on the importance or value of those relevant elements which exist in consonant or dissonant relations with the one being considered. (p. 17).

It is quite possible that Festinger's (1957) additive formulation is not applicable here since the proximity-high similarity perceiver, when confronted with the negative stimulus person, may not perceive him in the light of both proximity and similarity factors. Rather, it may well be that cognition associated with the negative stimulus person is viewed first within the framework of similarity factors and then within the framework of proximity factors, or vice versa. Furthermore, in light of what was said above concerning the greater importance of information relating to similarity factors relative to proximity factors, it seems reasonable to assume here also that the information the perceiver receives about the stimulus person is initially reviewed within the context of his similarity to this person and then from the point of view of proximity. If this is indeed what happens, then the initial dissonance experienced by the proximity-high similarity perceiver should equal that of the no proximity-high similarity perceiver. Furthermore, if dissonance is resolved by a change in the impression of the negative stimulus person so that now he appears in a more favorable light, the added factor of proximity for the former perceiver would not create additional dissonance since the impression would now be more favorable than it would be under a situation where only proximity was operating (Hypothesis 3). Thus, the perceiver who is made aware both that he is very similar to a negative stimulus person and that he will be associating with him at some future time might experience dissonance initially only because of the similarity, and then, having resolved this dissonance, would experience no further dissonance under proximity. It is as if the perceiver is thinking, first, under

similarity, "If I am like this fellow, he can't be that bad," and then under proximity, "If he isn't that bad, then I don't mind associating with him." In terms of impression change then, we would expect to find no differences between the proximity-high similarity perceiver and the no proximity-high similarity perceiver. The fourth prediction of this study is thus:

Hypothesis 4: Impressions formed of a negative stimulus person will be the same for a proximity-high similarity perceiver as for a no proximity-high similarity perceiver.

The present study investigated the four hypotheses outlined above within a college dormitory setting. Such a setting provided a common framework within which both proximity and similarity factors could be manipulated. The operation of proximity in a dormitory situation is obvious: when a student is assigned a roommate, it is evident that he will be aware of some future association with this individual which he will not share with other students. Similarity would also be operative in a college dormitory setting if the assignment of roommates were determined by some factor of compatibility in personalities.

METHOD

Subjects

Subjects were 108 male undergraduates at the Farmingdale unit of the State University of New York. All students lived on campus and were recruited purportedly as part of a college study on dormitory living. Eighteen others were also run but had to be dropped from the design: eight because they were not affected by the experimental manipulations in the expected direction; seven because they suspected the deception; and three were randomly removed to equate n's between groups.

Experimental Design

Ss were randomly assigned to one of six treatment groups differing in degree of proximity and similarity. In the proximity conditions Ss were led to believe that they would or would not be associating with a negative individual. Under similarity Ss were led to believe that they were either low, moderate or high in personality similarity to this negative individual. A 2 x 3 design was thus generated with two conditions of proximity (No Proximity vs. Proximity) and three conditions of similarity (Low Similarity vs. Moderate Similarity vs. High Similarity). There were 18 Ss in each condition.

Procedure

First session. During the initial phase of the study, some 200 on-campus students were sent letters instructing them to come to E's

office at an appointed time to take part in a study on dormitory living. The evening before they were to appear, they each received a phone call reminding them of their appointment and stressing the importance of the study. One hundred and fifty (150) of the Ss kept the appointment. All were run individually. Upon entering the office they were first asked some preliminary questions concerning their curriculums and permanent residences. Then they were told the following:

We are conducting a study involving dormitory living. The overall plan of this study is to improve the dormitory life of the student by making the most appropriate roommate arrangements. Presently at Farmingdale such arrangements are made on an arbitrary basis. That is, for the most part, students are randomly assigned to each other as roommates. In some cases the assignment is a good one: two fellows might "hit it off" well. In other cases, however, the assignment is poor: the roommates do not get along at all.

We feel that, since roommates spend a great deal of time together, a better method should be employed in making roommate arrangements. Specifically, we feel that the best kind of arrangements are those in which the students assigned to each other are compatible with each other; that is, they share similar interests, attitudes, likes and dislikes. In other words, the best kind of arrangements are those in which the students assigned to each other are similar in personality.

This semester we are conducting a study which will give us precise information about how personality similarity in roommates affects their ability to get along with each other. We are conducting this study by first measuring the personalities of a sample of students living here on campus. Once we have measured the personality of each student, we proceed to determine the degree of similarity in personality between every pair of roommates in the sample. Thus, we may find that the two fellows living in Knapp Hall Room 38 are very dissimilar in personality while those living in Room 40 are very similar. Our third and last step in the study is

to see what kinds of attitudes roommates have developed toward each other, and to relate these attitudes to the degree of personality similarity between the roommates. Attitudes between roommates will be measured by sending some of the people in the study attitude questionnaires sometime during the semester. They will fill out these questionnaires and send them back to us. What we expect to find, of course, is that the kinds of attitudes, interests and ideas we have affect the way we get along with people.

We have called you here today to ask for your cooperation in this study. This will involve little effort on your part. All you have to do today is to take a few personality tests. And later on in the semester, if you receive the attitude questionnaire in the mail, all you have to do is to fill it out and mail it back to us. Is this all right with you?

Good, let's begin then. I'm going to give you a series of tests designed to tell me something about your personality. These tests are among the most widely used tests in present day psychology and are employed for a variety of purposes. They have proven to be excellent instruments for measuring personality. In order for these tests to work well, however, it is important that you respond to them honestly and frankly. Only in this way can the results of our study be fruitful. Also, let me point out to you that whatever you say on these tests will be held in the strictest confidence. Moreover, there is no need to fear that your test results will in any way affect your college career.

Do you have any questions?

As can be seen, Ss were led to believe that a study on dormitory living was being conducted to determine the nature of the relationship between personality and roommate attitudes for the purpose of making future roommate assignments in the best manner possible. Actually, the real purpose of the first session was to lay the groundwork for the subsequent experimental manipulation of proximity and similarity in

the subsequent impression forming situation. This involved, in part, having Ss believe that their personalities were measured. In this regard they were given four tests. First they were given a questionnaire entitled the College Housing Study (see Appendix A). This questionnaire was also given again during the second session and served basically to see if the dissonance aroused in the latter situation was being reduced in ways other than through impression change (see below). The College Housing Study, which consisted of two parts, A and B, was administered in the following way. Ss were told to fill in some preliminary information and then to read the general directions. Then they were told to turn to Part A and read the directions to themselves while E read them aloud. The same procedure was followed for Part B.

After S completed the College Housing Study, he was informed that the next three tests would require the use of a tape recorder. The reason for this, he was told, was that he would have to do a bit of talking, and since E would be unable to take word by word notes, the tape recorder would make things easier. The actual purpose of the tape recorder was in reference to the Dream task as explained below. E then administered cards I, II, III and X of the Rorschach and cards 1, 6BM, 3BM, 18BM and 13MF of the TAT. The cards were administered in this order with the appropriate instructions given for the Rorschach and TAT. These tests served no purpose other than as buffer items designed to add more validity to the overall theme of personality measurement.

Upon completion of the TAT, and with the tape recorder still on, Ss were given the following oral instructions in reference to the last task:

Okay _____, there's one more thing that I'd like you to do for me today, and this will conclude our session. What I want you to do is to think about a dream that you had sometime in the past. This dream can be either a very recent one or one that you had in your childhood. The reason that I'm asking you for a dream is that dreams are considered to be keys, you might say, to an individual's personality. If they are properly interpreted, one can get a pretty good indication of an individual's total personality. That's it then. I want you to think of a dream that you had either in the recent past or in your childhood and to tell me about it. Okay?

The actual purpose of the tape recorder and the Dream task was to provide the means by which the negative stimulus person was introduced during the second session. When S finished relating his dream, he was thanked for his participation in the study on dormitory living. He was also informed that the results of his personality tests would be available "sometime next semester" and that he would be contacted in the mail in reference to this.

Second session. The preliminary testing that constituted the first session took place early in the fall semester of the academic year. During the following spring semester letters were sent out to Ss who completed this preliminary testing. The letters stated that E had the results of these tests and that he wanted to see S in reference to them. Again, on the evening before their scheduled appointments, Ss

were contacted by phone as a reminder. One hundred and twenty-six (126) kept their appointment. All Ss were run individually. Upon entering E's office they were given a brief review concerning the original study on dormitory living:

The last time you were here I told you that we were conducting a preliminary study on dormitory living. The purpose of the study was to see how personality similarities between roommates affect their ability to get along with each other. You were informed that the reason we were conducting this study was because we felt that roommates spend a great deal of time together and ought to have the best kind of arrangements.

You may recall that the study was carried out in the following way. First, the student's personality was measured by means of a series of highly sophisticated psychological tests. These tests included a written test and several oral tests which required the use of a tape recorder. Secondly, the student's feelings toward his roommate were to be measured by means of a questionnaire designed for this purpose. This questionnaire was to be sent to some of the students by mail, filled out by them, and mailed back to us.

Dissonance was then manipulated by giving Ss further information designed to make them believe that the original plan of the study was being modified into an actual experiment in such a way that the friendship process could be observed between roommates matched under varying degrees of similarity in personality:

Since the last time I saw you, a major change has taken place in our study. We have decided to modify it in such a way that we can conduct it under more controlled conditions. Let me explain this to you. Our original plan enabled us to see how well present dormitory students were getting

along with each other as roommates. For various reasons we felt that our results would be more meaningful if, instead of studying dorm students as presently assigned to each other, we made new arrangements, based on personality factors. That is, we felt our study would be better if we assigned students to each other based on personality similarities and then see what kind of attitudes develop between them.

So what we have done was to assign new roommates to many of the students who took part in the study so far. We have done this, moreover, in a very special way. Some of the students have been assigned to roommates who are very similar to them in personality. Other students have been assigned to roommates who are moderately similar to them in personality. And still other students have been assigned to roommates who are not at all similar to them in personality. We were, of course, able to make these kinds of assignments since we have personality scores for each student. These new assignments will go into effect next fall for a period of one semester.

The experiment will be carried out in the following way. Each student will be asked, at various periods throughout the semester, to indicate how well he is getting along with his roommate. We will be following the friendship process from first impressions on. Of course, our major concern will be to see how all of this relates to personality similarity between roommates.

Ss assigned to the Proximity groups were given the following additional instructions:

This brings me to the reason why you are here now. You are one of the students taking part in this experiment. This means that you have been assigned a new roommate with whom you will begin sharing a room next fall. Your participation in the experiment, however, will begin today, as you are going to find out something about your new roommate and form a first impression of him. That is, we are interested in seeing what your initial reactions

are to your new roommate before you begin to room with him. Actually you will not be meeting your new roommate in person since this would have been too difficult to arrange. Instead, we have decided to let you hear a recording of his voice and on this basis to form your impression of him. We happen to have his voice recorded since, as you well remember, last semester each student's voice was recorded while they were taking some of the personality tests. You will be hearing his voice as he relates the dream he told me the last time he was here. What I want you to do is to form an impression of this student based on what you hear.

Ss assigned to the No Proximity groups were given the following additional instructions:

This brings me to the reason why you are here now. You were originally one of the students taking part in this experiment. This means that you were assigned a new roommate with whom you were to begin sharing a room next fall. Your participation in the experiment, however, was to begin today as you were going to find out something about your new roommate and form a first impression of him. That is, we were interested in seeing what your initial reactions would have been to your new roommate before you began to room with him. Unfortunately, however, we were informed a few days ago that this student will not be with us next year since he is transferring to another school. Therefore, you are not required to take part in the study. However, your services can still be of some use today. Since first impressions provide vital information concerning the friendship process, we can still proceed with this part of the experiment. So what I want you to do for me today is to form a first impression of the person who would have been your new roommate. Actually you will not be meeting this student in person since this would have been too difficult to arrange. Instead, we have decided to let you hear a recording of his voice and on this basis to form your impression of him. We happen to have his voice recorded since, as you well remember, last semester each student's voice was recorded while they were taking some of the personality tests. You will be hearing his voice as he relates the dream he told me the last

time he was here. What I want you to do is to form an impression of this student based on what you hear.

All Ss were then given information relative to their purported similarity to the "roommate." Included in this information was a reference to S's performance on the personality tests taken during the first session. The reason for the latter inclusion was that, since S was originally informed that the purpose of the second session was in reference to his test performance regarding session one, something along this line had to be presented to him. All Ss were first told:

Before beginning, let me tell you something about this student. He is a freshman like yourself. He came in to see us, like you did, some time last semester in reference to our study on dormitory living. He took all the personality tests that you did.

The manipulation of similarity was introduced by the following additional information:

Low Similarity: When a comparison was made between his personality test scores and yours, a low simi-
laring was found. That is, we found that you and he are not at all similar as far as personality is concerned. Here, let me show you.

Moderate Similarity: When a comparison was made between his personality test scores and yours, a moderate similarity was found. That is, we found that in some respects you and he are very similar in personality, while in other respects you are quite different. Here, let me show you.

High Similarity: When a comparison was made between his personality test scores and yours, a high similarity was found. That is, we found that you and he are very similar as far as personality is concerned. Here, let me show you.

E then opened a file drawer and removed from it a folder containing S's records. These records actually consisted of the College Housing Study which S took during the first session, some buffer items, and a Personality Profile (see Appendix B) designed to show S's performance on each of the personality tests. The Personality Profile was the same for each S and was designed in such a way as to be understandable, but vague. Care was taken to insure that S did not understand the exact meaning of a specific score, especially in reference to whether the score was a favorable or unfavorable indicator of his personality. Along the top of the profile were labels which related to the specific tests involved during session one. These were SC for self-concept, SA for self-acceptance, IS for ideal self-concept (these being measured by the College Housing Study), R for the Rorschach test, TAT for the Thematic Apperception Test, and F for fantasy or dream.* Along the side of the profile was a series of numbers ranging from 101 to 199 which made up a "'-ile Scale." This scale had no real meaning and was designed to leave S with the impression that numerical values were not necessarily indicative of favorable or unfavorable character traits. This point was also made in the oral information given to S. The

*Three Ss could not recall any dream during session one and were asked instead to relate a daydream. The label thus read "F" for fantasy instead of "D" for dream to include all Ss.

personality profile had a dividing line at the numerical value of 150. From this line, vertical bars were drawn up or down representing performance on the six test items. For items SC, SA, TAT and F, the bars were above the 150 point (by differing amounts) while for IS and R they were below this point.

The Personality Profile had a cover sheet which had information written on it relative to the subject's number, age, home town and curriculum. S was given a few seconds to look at this cover sheet in order to promote the notion that the attached profile did indeed represent his performance on the tests taken during the first session. Then E turned over the cover sheet and said:

This is your personality profile. A personality profile shows how an individual has done on several different tests. Since this is probably meaningless to you now, let me try to explain it to you somewhat. Here on top we have indicators of the various tests you took. For example, R refers to the ink-blots test, TAT to the tell-a-story test, and so on. The bars indicate how you performed on these items. The bars will go either up or down from the dotted line in the middle. This does not mean that when it goes up the score is favorable and when it goes down the score is unfavorable. The direction of the bar does not tell anything about how favorable the personality is. It just indicates certain trends in personality characteristics. It's almost like saying that when a bar goes in one direction it means you like baseball, while when it goes in the opposite direction it means you like basketball. Do you understand?

Because it would take me a long time to describe what each score means in detail, I've decided to send you a copy of this profile along with a booklet which will tell you how to interpret each score yourself. In the meanwhile, let me say that, in general, this personality profile is quite average. Do you have any questions?

Ss seemed to indicate that they understood what the nature of the personality profile was and were pleased to hear that they were average in personality. E then explained that the similarity of S to the future or would-be roommate could best be illustrated by comparing the personality profiles of the two individuals. E then pulled out of the file drawer another folder containing the "records" of the second individual. From the folder he pulled out the Personality Profile and quickly turned over the cover page to prevent S from reading any of the specific information written on this page (all of which was, of course, made up). This profile was designed to be either very similar, moderately similar, or not at all similar to that of S (see Appendix B), this being a function of the degree to which the bars in the two profiles overlapped. The appropriate degree of similarity was pointed out to S in each case by saying:

You can see from the degree to which the bars overlap that you and your assigned (would-be) roommate are very similar (moderately similar, not at all similar) in personality.

A few seconds were allowed for a comparison of profiles.

At this point S was prepared to undergo the impression formation task. The tape recorder was turned on, and while it was warming up S was reminded that he would be listening to a recording of his future (would-be) roommate as he related his dream during session one and that he should try to form an impression of him on the basis of this recording. He was then handed a booklet labeled First Impressions (see Appendix C)

and asked to fill in his name and residence hall. The tape recorder was then turned on and S heard the purported dream interview between E and the other student. The interview was purposely designed to elicit a negative reaction from S. When it was over, S was told to read the instructions on the First Impression booklet which required him to indicate his reaction to SP. Following this, he was given a short form of the College Housing Study and asked to take it again. The rationale offered here was that, since future students would be receiving this test through the mail, a shorter form of it may be more practical, but that before it could be administered, its validity would have to be ascertained.

After completing the College Housing Study the second time, E told S that he had deceived him somewhat in that there was not going to be any change in present roommate assignments, i.e., there was not going to be any experiment conducted based on matched personalities. S was told that the original study as conducted last semester was carried out very nicely and that the results were in the predicted direction, i.e., a positive relationship was found between personality similarity and inter-roommate attitudes. Thus, it was not necessary to carry out the study under more controlled conditions. S was told that the real purpose of the second session was to provide data for a supplementary study being conducted as a follow-up to the first one. This follow-up study was investigating the relationship between similarity in personality and impression formation. The reason for this study was to see if personality factors were influential at the level of first

impressions as well as at the level of later judgments. S was told that the proximity manipulation was introduced as another variable of interest. Actually the information related to S at this point was almost in line with the true nature of the experiment except that S was still not told that perceived rather than real similarity to a negative SP was one of the key manipulations. That is, S was not yet informed about the confederate nature of SP nor that his similarity to SP was made up. He was told that SP was, in fact, a student who took part in the original study and who consented to having his dream used as stimulus information for the first impression study. S's similarity to SP was reinstated as well as the validity of the personality measures and results.

There were several reasons why only part of the truth was revealed at this point. One alternative would have been to tell Ss nothing yet until the entire experiment terminated and then to call them back again a third time and explain to them the true nature of the experiment. However, it was felt that doing this might have caused them undo concern about a forthcoming roommate switch and that this could very well lead to problems for the experiment. For instance, Ss might have been curious as to who their new or would-be roommate was, and in taking pains to find out, would have revealed the contents of session two to Ss who had not yet been tested. Also, since only one confederate was used in this study, Ss would have inevitably compared the "dreams" they heard and realized that they were all the same. Even if Ss were asked, under some rationale, not to say anything until everyone was

tested, it was felt that they probably would and thereby ruin the experiment.

The other alternative was to tell them the entire truth at the end of session two. This too was rejected since it was felt that, because Ss had already devoted two hours of their time (and in some cases it was valuable time, such as taking off from work, interrupting studies and social activities, even, in a few cases, cutting classes), they would become angry at learning that the study had nothing to do with the school, but instead that it was E's personal investigation. This, in turn, might have caused them to inform subsequent Ss about the true nature of the experiment and warn them not to show up. And even if they did show up, their data would have been worthless.

In short, it was felt that both alternatives would have contaminated the experimental situation in terms of varying the cognitive set of Ss during session two. In revealing only part of the truth, however, this would not have been the case, since Ss still would believe that they contributed something to an important college study and at the same time would not have to concern themselves about a new or would-be roommate. Naturally, the point was stressed that S should not tell anyone what took place during session two as this, of course, would ruin the experiment. As insurance against this possibility S was told that in return for his past and future cooperation, E would send him a copy of his Personality Profile and scoring manual as mentioned earlier, plus a card signifying that he had participated in the study. In addition, S was told he would receive a reprint of the study

when it was published. All Ss were informed that the experiment would be over when they received their personality profiles in the mail. Ss seemed willing to cooperate further by not relating what took place during the second experimental session. Indeed, many Ss expressed more interest during this phase of the study than they did during the first session. Also, many Proximity Ss seemed relieved to learn that they wouldn't be rooming with the confederate.

Post-experimental procedures. After all Ss completed session two, E had a student assistant contact them in the dorms for the purpose of checking on the effectiveness of the experimental procedures (see below). The following fall semester, each S received a letter from E explaining the true nature of the experiment. It was felt that a letter would be the best way of reaching Ss since it was unlikely they would come back a third time. They also received a card which signified that they took part in two hours of psychological experimentation as they were promised. They were told that this card could be shown to their future psychology instructors and might be of some value. In addition, each S was given his score on the measure of self-acceptance (part of the College Housing Study) along with a distribution of scores for all Ss. The latter were included as a way of thanking Ss for their help.

The Negative Stimulus Person

SP was presented as a fellow student participating in the experiment. Actually he was a confederate of E's relating a dream in which he boasts

about himself. According to Pepitone (1964) such a self-presentation usually elicits a negative reaction from others. The actual interaction which S was led to believe occurred between E and another student went as follows:

E: There is one more thing that I'd like you to do for me today, and this will conclude our session. What I want you to do is to think about a dream that you had sometime in the past. This dream can be either a very recent one or one that you had in your childhood. The reason that I'm asking you for a dream is that dreams are considered to be keys, you might say, to an individual's total personality. That's it then. I want you to think of a dream that you had either in the recent past or in your childhood and to tell me about it. Okay?

SP: Well, the only thing I can think of off hand is one I had pretty recently.

E: That's fine....fine. Go ahead, tell me about it.

SP: Well, it concerns my giving a report in my English class. This is back in high school.

E: This is the high school that you just graduated from?

SP: That's right, and this report's on Shakespeare's "Macbeth." And I seem to know this play very well. And actually I do know all of Shakespeare's works quite well because I read extensively. I seem to be speaking very well.... and I'm in front of the class, and I'm perfectly at ease. I think to myself, "Gee, how stupid everyone else is," because I understand the play. I even think that the teacher doesn't understand it as well as I understand it. Anyway, after I finish the report, some students start to raise their hands to ask me questions. I feel they're trying to stump me, but I handle it very nicely. And I put down this one girl.....and I put her down so badly she starts to cry.

E: Well, what did you tell her to make her cry?

SP: I told her that the question she asked was irrelevant and she was a moron. Actually I don't know why I said that because I know the girl in the dream....I mean I know her in real life and I think she's really quite smart....I like her.

E: Well, that's unusual, wouldn't you say that's unusual then, if you know somebody in real life whom you think is sharp and then you dream that they're inferior? Could you explain that, you think?

SP: No, I don't know.

E: All right, that's okay. No continue....go ahead is that the dream....is that the end of the dream?

SP: No, no, because then the scene shifted, and after awhile I realized I was in front of the auditorium of the school, and I was standing in front of the entire student body, and I was giving the same report over again. And I knew it very well. And all of a sudden I realized the audience, you know the students, they knew I knew it very well. And they got a big thrill out of this. And they all knew I was intellectually superior to them all. And at the end of the report they all stood up and they applauded me, and I felt, you know, really great....and that they were all really inferior to me. And then that was about that was the end of it, really.

E: That was very interesting. You said you had you mentioned quite a few feelings, like, you know, you thought one girl was stupid, and you felt you had this power. Can you think of other specific feelings which you might not have mentioned to me about this dream?

SP: Well, what amazed me is how well I spoke.

E: All right, do you think that you could interpret your own dream?

SP: No.

E: All right, that's fine. Thank you very much.

The total running time for the dream interview was three minutes and forty seconds.

Measurement Techniques

Written descriptions. The main dependent measures of this study were incorporated in a booklet entitled First Impressions (see Appendix C), and were designed to pick up any impression change arising from the experimental manipulations. One measure required S to indicate what kind of impression he received of the SP by writing a short description of him. Ss were given a ten-minute time limit to do this. The essays were content analyzed and scored along a dimension of favorability of impression following certain guidelines (see Appendix E). These guidelines were set up subsequent to a cursory examination of all essays. The ultimate task of the scoring procedure was to place each essay into one of six categories representative of the favorability dimension. These categories and the indicators of each were as follows:

0. Impressions Unrelated To Favorability Dimension: - Material categorized here consisted of content not indicative of any evaluative judgment made by S towards the SP. For example, S might not have been able or willing to judge SP; he might have repeated what SP said; he might have given possible reasons for SP's behavior; or he might have made introductory statements.

1. Very Unfavorable Impression: - Material put into this category indicated that S's impression was very unfavorable. Such an impression would be one in which S described SP in a strongly negative fashion; S expressed feelings of extreme dislike towards SP; S described a situation where he and SP will not, would not, or could not get along at all, a situation which would be avoided by S at all costs; or S described SP as being completely opposite to him or to significant others in character.

2. Moderately Unfavorable Impression: - Material categorized here indicated that S's impression was somewhat unfavorable. This would have been the case if S described SP in a somewhat negative manner; S expressed some dislike towards SP; S described a situation where he and SP will not, would not or could not get along that well, but a situation that would be tolerable; or SP was described as being somewhat unlike S or significant others in character.

3. Neutral Or Balanced Impression: - Material placed in this category indicated that S took a neutral or middle position in evaluating SP or that his evaluation consisted of both positive and negative factors simultaneously. This would have been the case if S described SP in a balanced fashion or used neutral character traits in his description; S expressed ambivalent or indifferent feelings towards SP; S described a situation where the likelihood that he and SP will not, would not or could not get along equaled the likelihood that they will, would or could get along; S described a future situation having neutral characteristics; S saw himself as like and unlike SP simultaneously; SP was

perceived as being like and unlike significant others simultaneously; or S described similarities and/or differences between SP and himself or significant others which were neutral in character.

4. Moderately Favorable Impression: - Material placed in this category indicated that S's impression was somewhat favorable. For example, this would have occurred if S described SP in a somewhat positive fashion; S expressed some like towards SP; S described a situation where he and SP will, would or could get along fairly well; S described himself as being somewhat like SP in character; or S described SP as being somewhat like other individuals significant to S.

5. Very Favorable Impression: - Material categorized here indicated that S's impression of SP was very favorable. Such was the case if S described SP in a highly positive fashion; S expressed feelings of extreme like towards SP; S described a situation where he and SP will, would or could get along very well; S described himself as being very much like SP in character; or S described SP as being very much like other individuals significant to S.

The scoring scheme was as follows. First, each essay was read once to establish the general impression obtained. This general impression constituted the context unit of the analysis, i.e., the frame of reference. Next, the protocol was reread and divided into individual recording units, i.e., the units of content that were to be categorized. A recording unit consisted of a theme which in turn was defined as any group of words that contained at least a verb and its subject and that

formed a complete thought. Themes were separated by simple marks directly on the protocol. Next, each theme was fitted into one of the specific categories outlined above and the number of that category was written next to the theme. The last step was to add up these numbers and to divide the result by the total number of themes minus those given a zero rating, i.e., those themes unrelated to the favorability dimension. This provided an overall favorability rating which was recorded to the nearest whole number. This number indicated which broad category the impression fell into.

Below is given a sample protocol divided into categorized themes:

"The person I heard sounded very conceited. / ① He sounded like he was far superior than anyone else. / ① I would tend to think that he would be hard to get along with any other people he meets. / ① In his dream, he recalled knowing something much better than everyone else; this sounds conceited, but I'm not sure whether it is his true personality or it just happened in the dream. / ① As far as I know, I don't feel very friendly towards him." / ②

This protocol was given an overall rating of 1. This was determined by adding together the values assigned to each theme (1+1+1+0+2=5) and dividing by the total number of themes minus those given a zero rating (4). Thus, $5/4 = 1.25$ and this becomes 1 when rounded off to the nearest whole number. This number, in turn, is the value given to the category designated as "Very Unfavorable Impression."

Rating measures. In addition to asking for a written description of the SP, the First Impressions booklet also required S to evaluate him by answering 14 questions. One question asked for an overall evaluation of SP:

Would you say that your overall impression of this individual was favorable?

Three of the questions were intercorrelated items measuring social distance taken from Berkowitz (1960):

Would you like this individual as your roommate?

Would you admit him into your circle of close friends?

Would you admit him into the social organization of greatest importance to yourself?

The remaining 10 questions asked S to consider SP in reference to specific personality traits, as follows:

Would you consider this individual a considerate person?

Would you consider this individual a warm person?

Would you consider this individual a kind person?

Would you consider this individual a friendly person?

Would you consider this individual a happy person?

Would you consider this individual a snobbish person?

Would you consider this individual an obnoxious person?

Would you consider this individual a spiteful person?

Would you consider this individual a rude person?

Would you consider this individual an annoying person?

As can be seen, the first five traits are positive, while the last five are negative. These traits were taken from a list of 555 such traits rated for likableness and meaningfulness in a study by Anderson (1968). In this study Ss were asked to think of a person described by each word and then to rate the word according to how much they would like the person. The words chosen for the present study were among those rated either very high or very low on likableness.

The 14 questions appeared on separate pages arranged in a random order which differed for each S. Each question was to be answered by placing a dash-mark somewhere across a 5-inch vertical line ranging from "Definitely Yes" to "Definitely No," with a midpoint set at 2-1/2 inches. Scores were determined by measuring the distance, in 1/16 inch units, between the dash-mark and one end of the line in such a way that the higher the score, the more favorable the impression. Scores thus had a theoretical range of 0 to 80. For all 14 questions, the working assumption here was that ratings reflected favorability responses towards the SP.

Checking On The Experimental Manipulations

Included in the First Impressions booklet were two questions designed to see if the experimental manipulations of similarity and proximity "took." The first question was a check on the similarity factor and asked:

How much of a similarity were you told there was between you and the person whose voice you heard over the tape recorder?

Ss responded here by picking one of three alternatives: High Similarity, Moderate Similarity and Low Similarity. The second question, which checked on proximity, asked:

Were you told that you definitely will be sharing a room with this person?

Ss responded here by choosing Yes or No as their alternative.

Closing Off Other Avenues Of Dissonance Reduction

The present study attempted to induce dissonance resolution through a change in a first impression. How fruitful such an attempt is, in general, depends in large part on whether measures are taken to insure that dissonance is not handled in other ways. Three possibilities were considered here. One related to proximity dissonance. It was possible that dissonance induced as a result of proximity factors might be

resolved by underestimating the proximity itself. Thus, college students assigned a negative roommate might reduce their dissonance by underestimating the degree of contact that takes place between dormitory students. The attempt was made here to discourage such a response by reminding the students, both during the first and second sessions, that roommates actually spend a great deal of time together.

Similarly, it was felt that dissonance induced through similarity might be reduced by negating the similarity itself. One way to do this would be to reject the source from which the similarity was established. In this case the source would be the psychological tests themselves. An attempt was made here to prevent this from happening by informing Ss in both sessions of the high validity associated with the psychological tests used in the study. Dissonance arising from similarity might also be reduced by a self-rejection. It was assumed here, however, that this was not likely to take place. This same assumption was made by Glass (1964) in his study where Ss experienced dissonance because they administered shock to a confederate. Glass says:

It is recognized that the aggressor might also attempt to reduce dissonance by lowering his self-esteem. However, it is assumed that in general strong barriers to self-derogation exist, and that in the absence of explicit influence pressures, increased dislike of self as a mode of dissonance reduction is less likely to occur than increased dislike of the other person (p. 533).

Similarly, Pepitone (1964) found that individuals in a self-evaluation conflict tend to maintain their self-evaluation as long as there exists opportunities to defend it.

An attempt was made to equate perception of self-esteem among all Ss by informing each, during session two, that his personality was quite average (see above).

Measuring Other Modes Of Dissonance Reduction

The College Housing Study (see Appendix A), while purporting to be one of the personality measures taken by S, actually served as an indication of other means of reducing dissonance. It was divided into two parts, A and B. Part A consisted of 10 questions. Six questions represented buffer items and consisted, in part, of actual questions asked of dormitory students when they fill out an application for college housing at the school. These questions were:

Would you object to your roommate smoking in the room?

Can you sleep with a light on?

Are you interested in joining any dormitory activities?

Would you describe your housekeeping habits as being average?

Can you study with a radio playing?

Do you prefer to study in the late evening?

Three questions were asked predominantly to see if some Ss reduced their dissonance through the proximity factor:

Do you feel that roommates actually spend a great deal of time together?

Does the end of your dormitory life seem a long way off?

Are you presently associating with someone (room-mate or otherwise) whom you don't care for?

It was felt that the first two of these questions dealing with proximity could pick up attempts of S to distort his future association with the negative SP by underestimating the intensity of this association. Thus, dissonance experienced as a result of expecting to room with an unpleasant other could be reduced by thinking that roommates actually don't spend too much time together and/or that the association is only for a short while. The third question here was designed to pick up attempts at reducing dissonance by underestimating the importance of the association with SP. That is, S could resolve his dissonance by thinking that his future roommate, while unpleasant in character, wasn't that bad in comparison with other present associates.

The remaining question was designed to see if some Ss attempted to reduce their dissonance by invalidating the psychological tests results underlying the similarity verdict. This question read:

Do you feel that psychological testing actually provides a good indication of an individual's personality?

Each question appeared on a separate page and was to be answered by placing a dash-mark somewhere across a 5-inch vertical line, the ends of

which were marked "Definitely Yes" and "Definitely No" with a midpoint at 2-1/2 inches. The vertical line was subdivided into 1/16 inch units for scoring purposes and a score was considered the distance between the dash-mark and one end of the line. A score could thus range from 0 to 80.

Part B of the College Housing Study consisted of Bills' Index of Adjustment and Values (Bills, undated manual; Bills, Vance and McLean, 1951). The Index of Adjustment and Values (abbreviated IAV) was used to see if dissonance reduction was attempted by a reduction in self-esteem. It has been indicated that the IAV is one of the most reliable and valid measures of the self-concept (Lefkowitz, 1967). What it does is to ask S to evaluate himself relative to 49 character traits along one of three dimensions representing self-concept, acceptance of self and ideal self-concept. As a measure of self-concept, S has to indicate how much of the time each trait is typical or characteristic of him by choosing one of five alternatives ranging from "Seldom" to "Most of the time." A score is obtained here by adding the ratings given for each trait with ratings given to negative traits reversed. The purpose of reversal is to enable a meaningful comparison between ratings of negative traits and ratings of positive traits. This same procedure is followed in scoring the measure of ideal self-concept. Here S has to indicate, for each trait, how much of the time he would like it to be typical or characteristic of him. Again, he is given five choices ranging from "Seldom" to "Most of the time."

The IAV has two related measures of self-esteem. One measure requires S to indicate, for each of the 49 traits, how he feels about the way he described himself relative to this trait. S indicates his feelings by choosing one of five alternatives ranging from "I very much dislike being as I am in this respect" to "I like very much being as I am in this respect." A score is calculated by adding up the 49 ratings, this time, however, without reversing any ratings since these are not affected by the negative-positive nature of the traits. The other measure of self-esteem represents the discrepancy between self-concept and ideal self-concept. This is scored by totaling the differences between the self-concept ratings and ideal self-concept ratings for each trait without reference to the sign of the difference.

During session one, the IAV consisted of a long form of the one actually constructed by Bills (Bills, undated manual; Bills, Vance and McLean, 1951), while during the second session, the original IAV was used. The reason for this difference between sessions was that it provided a rationale for the necessity of repeating the test itself, as explained above.

Post-Experimental Check On Effectiveness Of Experimental Procedures

Since this experiment involved the use of deceptive measures, the possibility was present here, as in most such investigations, that Ss would interact and that information would be revealed to untested Ss which would be detrimental to the efficacy of the study. Even though

precautionary measures were taken to prevent this, it was felt that, before an analysis of the data could proceed, it would be better to check and see if Ss were as naive as they appeared to be during session two. To do this, E made use of one of his assistants, a dormitory student himself who had previously taken part in the study and was told the truth about it. This assistant was President of the Psychology Club on campus. He was told to go to the rooms of the Ss who took part in both sessions and to find out to what extent they were actually deceived. He was told to pretend that he represented the concern of the Psychology Club that the study was invalid since the deceptive measures in all probability failed.

The assistant approached each student (a great many of whom he knew personally) and informally got them to talk about their feelings concerning the experiment. He assured them that he had nothing to do with E's study, that he was acting basically as mouthpiece for the Psychology Club, and that this would in no way affect them. After leaving each student, the assistant made a note indicating whether or not he felt the student believed the deception.

RESULTS

Validity Of Experimental Inductions

Proximity and similarity. As a check on the effectiveness of the experimental manipulations, Ss were asked to respond to two questions contained in Part II of the First Impressions booklet (see Appendix C). An analysis of the responses to these questions showed that 8 Ss were not affected by the experimental manipulations in the expected direction, and they were thus excluded from further analysis. These 8 Ss seemed to distort their memory of the experimental information such that they saw themselves associated with the negative SP to a lesser degree. For instance, one S assigned to the Low Similarity-Proximity condition displaced himself to the Low Similarity-No Proximity condition. The remaining 7 Ss displaced themselves along the similarity dimension. Five Ss assigned to the High Similarity conditions displaced themselves to categories of lower similarity, seemingly in a random fashion. Similarly, 2 Ss assigned to the Moderate Similarity category displaced themselves to the Low Similarity category. The evident distortion bias here lends support to the validity of the negative character of the SP.

Negativity of the stimulus person. Actually the negative character of the SP was predetermined in a pilot study conducted during the spring semester preceding the first session. Ss for this study consisted of 30 students registered for E's course in introductory psychology at SUNY,

Farmingdale. By means of written instructions they were informed that they were going to hear on a tape recorder part of an interview between an incoming freshman and an instructor, in which the freshman would be relating one of his dreams to the instructor. They were also told that this interview took place at a certain college where all incoming on-campus freshman were assigned dormitory rooms on a matched-personality basis. The purpose of the interview was to measure the student's personality in order to match him up with a compatible roommate. Ss were asked to try and "size up" the student on the basis of the interview and then to answer the question, "Do you like this individual?," by making a check-mark somewhere along a 90 millimeter scale accompanying the question. The low end of this scale was marked "Definitely No" and the high end was marked "Definitely Yes." A midpoint was set at 45 mm. The mean score for the 30 Ss was calculated at 28.1 mm. This was considered ideal for the purposes of the study at hand since it provided a negative impression, but one that was not so negative as to induce disbelief on the part of Ss.

Homogeneity of Rating Measures

One response measure of this investigation consisted of 14 questions designed to tap the favorability of the impression. These questions constituted Part III of the First Impressions booklet (see Appendix C). They are summarized and coded in Table 1. A score for each question represented

TABLE 1
SUMMARY OF RATING MEASURES AND CORRESPONDING CODES

Code	Variable
P1	Would you consider this individual a considerate person?
P2	Would you consider this individual a friendly person?
P3	Would you consider this individual a happy person?
P4	Would you consider this individual a kind person?
P5	Would you consider this individual a warm person?
N1	Would you consider this individual an annoying person?
N2	Would you consider this individual an obnoxious person?
N3	Would you consider this individual a rude person?
N4	Would you consider this individual a snobbish person?
N5	Would you consider this individual a spiteful person?
S1	Would you admit this individual into your circle of close friends?
S2	Would you admit this individual into the social organization of greatest importance to yourself?
S3	Would you like this individual as your roommate?
OI	Would you say that your overall impression of this individual was favorable?
PT	Sum of P1, P2, P3, P4 and P5
NT	Sum of N1, N2, N3, N4 and N5
ST	Sum of S1, S2 and S3
TT	Sum of PT, NT, ST and OI
$\bar{X}_T$	Mean favorability score (TT/14)

a distance on a 5-inch vertical line the ends of which were marked "Definitely Yes" and "Definitely No." The distance taken was that between one end of the line and a dash-mark made by S to indicate his rating. The vertical line was subdivided into 1/16 inch units for the purpose of scoring. Scores thus had a theoretical range of from 0 to 80. Items P1, P2, P3, P4, P5, S1, S2, S3 and OI were scored from the "Definitely No" end of the scale and items N1, N2, N3, N4 and N5 were scored from the "Definitely Yes" end of the scale, thereby equating high scores with more favorable impressions and low scores with less favorable impressions.

The plan of the study called for a comparison of responses among treatment groups for an overall favorability score based on all 14 items. According to Scott and Wertheimer (1962), a summative score is justified to the extent that individual items are homogeneous. Test homogeneity is, in turn, reflected in the degree to which every item correlates positively with every other item. In the present case, Ss responses to the 14 items were intercorrelated, as well as the sum of the positive items, the sum of the negative items, the sum of the social distance items and the sum of all 14 items. Product-moment correlations were computed using subroutine CORRE of the IBM 1130 Scientific Subroutine Package. A program was written which read in the input matrix and called subroutine CORRE from the Scientific Subroutine Package. Appendix F illustrates the intercorrelations obtained as well as the means and standard deviations for each variable.

An examination of the intercorrelations shows the test to be highly homogeneous. This is evident in view of the fact that all the inter-

correlations except four were significant beyond the .005 level. The average correlation of the 153 reported correlations was .59 with a standard deviation of .16.

Another way of determining test homogeneity is suggested by Scott and Wertheimer (1962). This is based on a procedure described by Scott (1960) in which a homogeneity ratio (HR) is computed. HR is interpreted as a weighted average of the intercorrelations among all pairs of items and is thus a measure of overall homogeneity. In the present study, HR was calculated to be .51 which is highly significant ($p < .005$). Since the reader may not be familiar with this statistic, an exposition of it is presented in Appendix D.

Coding Reliability of Written Descriptions

Favorability of impression was also measured by having Ss write brief descriptions of the SP. These descriptions were content analyzed following the directions outlined in the manual of instructions (see Appendix E). Reliability of the coding procedure was checked by having another analyst score 30 protocols selected at random. Intercoder agreement was determined by computing the Kendall rank correlation coefficient. This turned out to be highly significant ($\tau = .85, p < .005$).

Test of Hypotheses: Impression Change

As stated earlier, a basic assumption underlying the present study was that the SP is initially perceived by all Ss as negative in character.

The hypotheses under investigation relate to differential changes in this first impression resulting from information dissonant with it. Let us now turn to the results, first, on the basis of the rating measures.

Rating measures. Table 2 presents the means and standard deviations of the overall favorability score (coded $\bar{X}_T$, see Table 1) for each of the six treatment conditions. In each case the higher the

TABLE 2
MEANS AND STANDARD DEVIATIONS OF OVERALL FAVORABILITY
SCORES UNDER SIX TREATMENT CONDITIONS^a

Treatment	Similarity		
	Low	Moderate	High
No Proximity	20.65	40.66	47.76
	9.63	10.79	11.06
Proximity	34.66	41.41	47.13
	9.09	15.93	10.77

^aTop row of numbers refers to means and bottom row to standard deviations.

mean, the more favorable the impression. Inspection of the data of Table 2 shows that the least favorable impressions occurred in the Low Similarity-No Proximity condition while most favorable impressions were associated with the High Similarity conditions. Within group variances were found not to differ significantly from each other based on Bartlett's

test ($\chi^2 = 7.35$, $p > .05$). The reader is referred to Appendix G for an item analysis under each treatment condition.

Table 3 presents the results of an analysis of variance based on overall favorability scores.* This analysis shows a significant main

TABLE 3
TWO-WAY ANALYSIS OF VARIANCE
OF OVERALL FAVORABILITY SCORES

Source	df	MS	F
Proximity (A)	1	598.92	4.33*
Similarity (B)	2	3,670.23	26.53**
A x B	2	588.52	4.25*
Error	102	138.32	

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

effect of both proximity ($p < .05$) and similarity ($p < .005$) in addition to a significant interaction effect ($p < .05$). Let us analyze these effects in terms of specific hypotheses. The first hypothesis predicts a main effect based on proximity while the fourth hypothesis qualifies this by predicting no proximity differences under High Similarity. Post-hoc comparisons in the data, using the Scheffé method, indicate that the main effect of proximity is a function of the differences in the Low Similarity treatment condition. This can be seen in Table 4

*See Appendix H for the results of analyses of variance performed for each item.

which presents comparisons between various means based on Scheffé's test. As can be seen, under Low Similarity, there is a significant difference in the proximity manipulation (comparison 1 vs. 4), but this difference is not significant under Moderate Similarity (comparison 2 vs. 5) and High Similarity (comparison 3 vs. 6). The data thus seem to favor an interaction interpretation rather than a main effects one. In reference to the hypotheses under consideration, this means that the first hypothesis is not tenable as it stands, but should be modified to predict proximity differences only under conditions of low similarity; under conditions of moderate as well as high similarity, proximity manipulations are not effective. Putting this in other words, we can say that impressions of a negative SP are more favorable when the perceiver anticipates a future association between himself and the SP than when he does not, but only when the two share minimal similarity in personality. As the perceiver and the SP begin to resemble each other more in personality, then proximity anticipation becomes a negligible factor. This is also revealed in Figure 1 which presents the relationship of mean favorability responses for No Proximity and Proximity treatments under conditions of Low, Moderate and High Similarity.

The analysis of variance supports the second hypothesis which predicts a main effect of similarity ($p < .005$). This effect is evident under each level of proximity even though the difference in similarity is greater under No Proximity ($F = 30.39$, $df = 2, 51$) than Proximity

TABLE 4
COMPARISONS BETWEEN 28 TREATMENT
MEANS BASED ON THE SCHEFFE TEST

Comparison ^a	t
1 vs. 2	-5.10*
1 vs. 3	-6.92*
1 vs. 4	-3.57*
1 vs. 5	-5.30*
1 vs. 6	-6.76*
2 vs. 3	-1.81
2 vs. 4	1.53
2 vs. 5	-0.19
2 vs. 6	-1.65
3 vs. 4	3.34*
3 vs. 5	1.62
3 vs. 6	-0.16
4 vs. 5	-1.72
4 vs. 6	-3.18*
5 vs. 6	-1.46
1 vs. 2+3	-6.94*
1 vs. 5+6	-6.96*
3 vs. 1+2	5.04*
3 vs. 4+5	2.86
4 vs. 5+6	-2.83
6 vs. 4+5	2.68
1+2 vs. 4+5	-2.66
1+4 vs. 2+5	-4.83*
1+4 vs. 3+6	-7.14*
2+3 vs. 5+6	-0.02
2+5 vs. 3+6	-2.31
1+4 vs. 2+5+3+6	-6.91*
3+6 vs. 1+4+2+5	5.46*

^aNumbers indicating comparison
relate to treatments as follows:

Group	Low	Sim	Mod	Sim	Hi	Sim
No Prox	1		2		3	
Prox	4		5		6	

* $p < .10$ (since Scheffé's test is conservative
requiring larger differences for significance,
he suggests taking $\alpha = .10$ rather than .05).

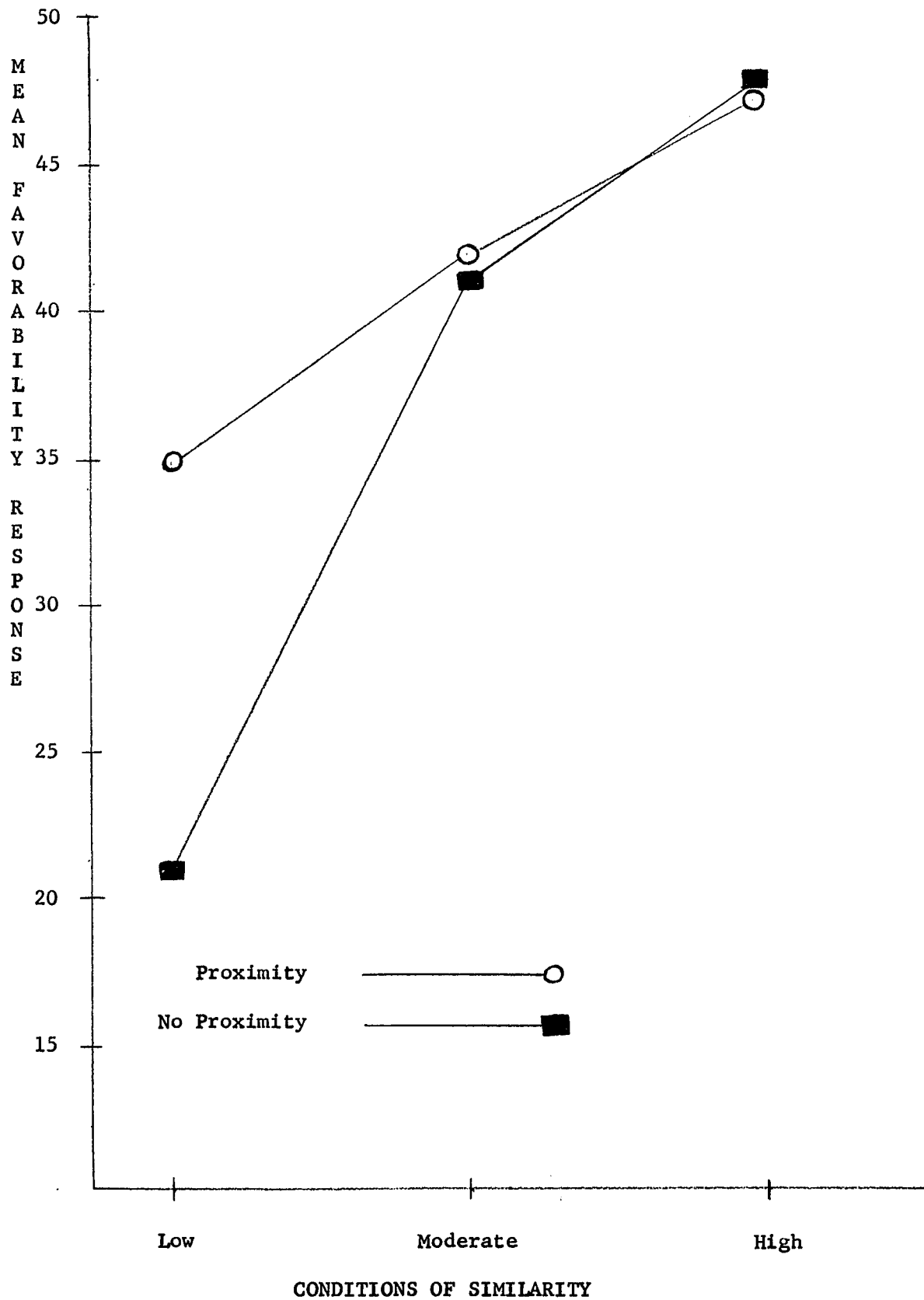


Fig. 1 Relationship of mean favorability response for No Proximity and Proximity treatments under conditions of Low, Moderate and High Similarity

($F = 4.39$, $df = 2, 51$). The post-hoc comparisons of Table 4 elucidate the source of these differences. Note first that, in reference to the overall effects of similarity, the significant sources of difference are between the Low Similarity and Moderate Similarity treatments (comparisons 1+4 vs. 2+5) and between the Low Similarity and High Similarity treatments (comparison 1+4 vs. 3+6). The differences between the Moderate Similarity and High Similarity treatments are not significant although they are in the predicted direction (comparison 2+5 vs. 3+6). This pattern repeats itself under the level of No Proximity (comparison 1 vs. 2; comparison 1 vs. 3; and comparison 2 vs. 3). However, under the level of Proximity, the only source of difference is between Low Similarity and High Similarity treatments (comparison 4 vs. 6); the other two are not significant (comparison 4 vs. 5; and comparison 5 vs. 6) even though the latter again is in the predicted direction. Thus it would seem, in reference to Hypothesis 2, that while similarity manipulations are effective, favorability of response is not a linear function of such manipulations although it seems to point in that direction. That is, while a similar negative SP is perceived as less unfavorable than a nonsimilar one, gradations in similarity above a minimal level do not seem to significantly affect the change in impression.

Hypothesis 3 predicts differences in impression change as a function of the importance of cognitive discrepancies. It states that awareness of a high similarity to a negative SP would be more important

than information concerning a future association with him and would result in a more favorable impression of him. This seems to be the case as an examination of Table 4 reveals: there is a significant difference in impression between the No Proximity-High Similarity treatment and the Proximity-Low Similarity treatment (comparison 3 vs. 4). A t test between these two treatments also pointed out the significance ($t = 3.78$, $p < .005$, one-tailed test).

Written description. The written descriptions were content analyzed and placed into one of six categories reflecting favorability of impression. Table 5 illustrates the percentage of Ss falling into the six categories under each treatment condition. As can be seen, only 3% of the protocols were categorized under "Impressions Unrelated To Favorability Dimension." Since this number was so small, it was decided to eliminate this category from the analysis of results.

TABLE 5

PERCENTAGE OF IMPRESSION PROTOCOLS FALLING INTO 6 CATEGORIES
OF FAVORABILITY UNDER EACH TREATMENT CONDITION

Category	Low Similarity		Mod Similarity		High Similarity		Total %
	No Prox	Prox	No Prox	Prox	No Prox	Prox	
0	0	0	0	11	6	0	3
1	39	33	5	11	11	5	17
2	50	39	28	22	22	17	30
3	11	22	39	33	44	50	33
4	0	6	28	17	17	28	16
5	0	0	0	6	0	0	1

Similarly, since only 1% of the protocols were categorized as "Very Favorable Impression," they were put into the "Moderately Favorable Impression" category. In this manner the number of categories was reduced from 6 to 4 and the number of protocols from 108 to 105. All subsequent analyses of results are based on these figures.

Looking first at specific treatment comparisons, Table 6 presents the frequencies in the four coding categories for the No Proximity vs. Proximity conditions, as a test of Hypothesis 1. A χ^2 of 0.91 fails to support this hypothesis ($p > .05$). However, the protocols do seem to distribute themselves in the predicted direction. Note first the distribution of protocols in categories 1 and 2, i.e., those judged as depicting an unfavorable impression. We find that 52.8% of the Ss in the No Proximity condition judged the SP as unfavorable while 44.2% of the Ss in the Proximity condition judged him as unfavorable. The opposite was true for the distribution of essays in the "Moderately Favorable Impression" category. Here 15.1% of the No Proximity Ss judged SP as favorable as compared to 19.3% of the Proximity Ss.

TABLE 6
FREQUENCIES IN CODING CATEGORIES BY PROXIMITY
CONDITIONS WITH SIMILARITY COLLAPSED

Coding Category	No Proximity	Proximity	Total
1	10	9	19
2	18	14	32
3	17	19	36
4	8	10	18
Total	53	52	105

A further analysis was conducted in which the data were arranged in 2 x 2 contingency tables and analyzed by the Fisher exact probability test. Each test determined whether the proportions of protocols falling into categories taken two at a time differed under proximity manipulations for each level of similarity, thereby determining the extent of any interaction effects present. The Fisher test was used since the n's of the individual treatment groups were too small to do subsequent chi-square analyses. Table 7 presents the frequencies of protocols falling into two coding categories at a time for No Proximity vs. Proximity Ss

TABLE 7
FREQUENCIES IN TWO CODING CATEGORIES AT A TIME BY PROXIMITY
CONDITIONS UNDER EACH LEVEL OF SIMILARITY

Category	Low Similarity		Mod Similarity		High Similarity	
	No Prox	Prox	No Prox	Prox	No Prox	Prox
1	7	6	1	2	2	1
2	9	7	5	4	4	3
1	7	6	1	2	2	1
3	2	4	7	6	8	9
1	7	6	1	2	2	1
4	0	1	5	4	3	5
2	9	7	5	4	4	3
3	2	4	7	6	8	9
2	9	7	5	4	4	3
4	0	1	5	4	3	5
3	2	4	7	6	8	9
4	0	1	5	4	3	5

under each level of similarity. A cursory examination of the data of Table 7 shows no differences in the distribution of protocols for any combination of coding categories. This is further corroborated by the fact that none of the Fisher exact probability tests performed was significant at $\alpha = .05$. Thus, it would seem that, based on the results of the content analysis, favorability of impression is not a function of proximity factors.

Turning now to a test of Hypothesis 2, Table 8 presents the four coding categories for the Low Similarity vs. Moderate Similarity vs. High Similarity conditions with proximity collapsed. A χ^2 of 17.96 was obtained here which was highly significant ($p < .005$). An examination of the distribution of protocols points out the direction of the differences between treatments. Note first that while 36.1% of the Ss in the Low Similarity conditions got a very unfavorable impression of SP, only 8.8% of the Moderate Similarity Ss and 8.6% of the High Similarity

TABLE 8
FREQUENCIES IN CODING CATEGORIES BY SIMILARITY CONDITIONS
WITH PROXIMITY COLLAPSED

Coding Category	Low Similarity	Moderate Similarity	High Similarity	Total
1	13	3	3	19
2	16	9	7	32
3	6	13	17	36
4	1	9	8	18
Total	36	34	35	105

Ss got such an impression. Similarly, the distribution of moderately unfavorable impressions was 44.4%, 26.5% and 20.0% for Low Similarity, Moderate Similarity and High Similarity Ss respectively. Note that this trend is reversed with regard to those protocols categorized as moderately favorable. Here only 2.8% of the Low Similarity Ss got such an impression while 26.5% of the Moderate Similarity Ss and 22.8% of the High Similarity Ss received this impression. An interesting trend was also obtained with reference to those impressions judged as neutral or balanced. Here, the pattern was 16.7%, 38.2% and 48.6% for Low Similarity, Moderate Similarity and High Similarity Ss respectively. Subsequent χ^2 tests for two similarity treatments at a time indicated that the source of the difference between treatments was between the Low Similarity and Moderate Similarity conditions ($\chi^2 = 17.07$, $p < .0005$) and between the Low Similarity and High Similarity conditions ($\chi^2 = 12.88$, $p < .005$). The difference between the Moderate Similarity and High Similarity conditions was not significant ($\chi^2 = 0.84$, $p > .05$). Thus, one can conclude again that, although similarity manipulations are effective, the type of impression obtained is not a linear function of these manipulations.

As with the analysis of proximity, further tests were conducted with the similarity manipulation to see if more specific information could be obtained. In Tables 9 and 10 the data are arranged in 2 x 2 contingency tables in which two coding categories are considered at a time together with two levels of similarity under No Proximity (Table 9)

TABLE 9

FREQUENCIES IN TWO CODING CATEGORIES AT A TIME BY TWO LEVELS
OF SIMILARITY UNDER NO PROXIMITY

Category	Low	Mod	Low	High	Mod	High
1	7	1	7	2	1	2
2	9	5	9	4	5	4
1	7	1	7	2	1	2
3	2 *	7	2 *	8	7	8
1	7	1	7	2	1	2
4	0 *	5	0 *	3	5	3
2	9	5	9	4	5	4
3	2	7	2 *	8	7	8
2	9	5	9	4	5	4
4	0 *	5	0	3	5	3
3	2	7	2	8	7	8
4	0	5	0	3	5	3

*The protocols in these two groups differ in the proportion with which they fall into the two coding categories with $\alpha = .05$ (one-tailed test).

and Proximity (Table 10) conditions. The data were analyzed by Fisher's test. As can be seen here, the direction of significance obtained by the χ^2 analyses repeats itself. That is, the source of significance between similarity treatments is between the Low and Moderate or Low and High levels, but not between the Moderate and High levels. Furthermore, under No Proximity, there are three combinations of

TABLE 10
FREQUENCIES IN TWO CODING CATEGORIES AT A TIME BY TWO LEVELS
OF SIMILARITY UNDER PROXIMITY

Category	Low	Mod	Low	High	Mod	High
1	6	2	6	1	2	1
2	7	4	7	3	4	3
1	6	2	6	1	2	1
3	4	6	4 *	9	6	9
1	6	2	6	1	2	1
4	1	4	1 *	5	4	5
2	7	4	7	3	4	3
3	4	6	4	9	6	9
2	7	4	7	3	4	3
4	1	4	1	5	4	5
3	4	6	4	9	6	9
4	1	4	1	5	4	5

*The protocols in these two groups differ in the proportion with which they fall into the two coding categories with alpha = .05 (one-tailed test).

coding categories for the Low vs. Moderate treatments which are significant while under Proximity there are none. This means that there was a difference in the way Low vs. Moderate Similarity Ss perceived SP, but only when no future interaction was anticipated between themselves and SP. When such an interaction was anticipated, there was no such difference. This finding corroborates the interaction effect obtained using the rating measures (see Table 4, comparison 1 and 2 vs. 4 and 5).

Inspection of the data of Tables 9 and 10 also reveals that the two category combinations that are most often associated with significance are 1 x 3 and 1 x 4. Thus, differences in similarity manipulation can best be detected if comparisons are made between protocols judged as very unfavorable and those judged as either neutral and balanced or moderately favorable.

As a test of Hypothesis 3, frequencies of protocols falling into the various coding categories were compared for the No Proximity-High Similarity Ss vs. the Proximity-Low Similarity Ss. Again, because of small n's, the data were arranged in 2 x 2 contingency tables where coding categories were considered two at a time. Table 11 presents the

TABLE 11

FREQUENCIES IN TWO CODING CATEGORIES AT
A TIME FOR NO PROXIMITY-HIGH SIMILARITY
Ss VS. PROXIMITY-LOW SIMILARITY Ss

Category	No Prox- High Sim	vs	Prox- Low Sim
1	2		6
2	4		7
1	2		6
3	8		4
1	2		6
4	3		1
2	4		7
3	8		4
2	4		7
4	3		1
3	8		4
4	3		1

obtained frequencies. Using Fisher's test, the results show that the distribution of frequencies between the two groups for any combination of categories does not differ significantly. An examination of the table, however, shows that the trend of the differences is in the predicted direction.

Measuring Alternative Means Of Reducing Dissonance

It was quite possible that Ss in the present experimental situation would reduce their dissonance by means other than, or in addition to, changing their perception of SP. Although steps were taken to block this as much as possible, it was necessary to measure any attempts in this direction. Consequently, measures were taken of any changes in Ss' behavior which would be indicative of alternative ways of dissonance reduction. These measures were in the form of information requested during both experimental sessions as part of the College Housing Study

TABLE 12

SUMMARY OF ITEMS MEASURING ALTERNATIVE WAYS OF DISSONANCE REDUCTION WITH CORRESPONDING CODES

Code	Measure
PROX 1	Do you feel that roommates actually spend a great deal of time together?
PROX 2	Does the end of your dormitory life seem a long way off?
PROX 3	Are you presently associating with someone (roommate or otherwise) whom you don't care for?
SIM 1	Do you feel that psychological testing actually provides a good indication of an individual's personality?
SIM 2	IAV's measure of acceptance of self
SIM 3	IAV's measure of the discrepancy between self and ideal self-concepts

questionnaire (see Appendix A). Table 12 presents a summary of these measures and codes for each.

Ss responded to items coded PROX 1, PROX 2, PROX 3 and SIM 1 by making a dash-mark along a 5-inch vertical line, the ends of which were marked "Definitely Yes" and "Definitely No." This line had a midpoint at $2\frac{1}{2}$ inches. The score for each item related to the distance of the dash-mark from one end of the scale, this distance being recorded in $1/16$ inch units. Scores had a theoretical range of 0 to 80. For the PROX 3 item the distance recorded was from the "Definitely No" end of the scale while for the other three items it was from the "Definitely Yes" end of the scale.

Items SIM 2 and SIM 3 were part of Bills' Index of Adjustment and Values (Bills, undated manual; Bills, Vance and McLean, 1951). As described earlier, the IAV asks S to consider himself in reference to 49 personality traits. For each trait he is to indicate, first, how much of the time it is characteristic of him; second, how he feels about this; and third, how much of the time he would like it to be characteristic of him. In each case S responds by making one of five choices. In this manner, three measures can be taken, these being, respectively, a concept of self, a concept of self-acceptance, and a concept of ideal self. In addition, a discrepancy score can be calculated which measures how much of a difference exists between a person's self-concept and ideal self-concept. The latter and the measure of self-acceptance are considered to reflect self-esteem (these being, respectively, SIM 3 and SIM 2).

All items measuring alternative attempts at dissonance reduction were given twice, once during session one and once during session two. Three scores were calculated for each item, a before score, an after score and a change score. Table 13 presents before and change scores for each item under each treatment condition. Positive changes in the experimental groups were indicative of attempts at dissonance reduction while negative changes reflected attempts to increase dissonance. Within group variances for before and change scores were found to be homogeneous based on Bartlett's test at $\alpha = .05$.

TABLE 13

MEAN BEFORE AND CHANGE SCORES FOR SIX VARIABLES MEASURING ALTERNATIVE MODES OF DISSONANCE REDUCTION UNDER SIX TREATMENT CONDITIONS^a

Variable	Low Similarity		Mod Similarity		High Similarity	
	No Prox	Prox	No Prox	Prox	No Prox	Prox
PROX 1	31.67	26.39	24.92	29.33	30.50	21.11
	0.94	3.28	4.06	-2.33	2.06	6.17
PROX 2	53.72	55.33	42.00	55.00	49.06	51.89
	-3.72	-1.61	4.78	9.89	10.44	8.00
PROX 3	19.83	38.06	28.67	27.00	35.17	33.39
	3.33	2.94	7.00	-1.72	-10.06	0.00
SIM 1	26.89	24.94	24.50	22.61	18.28	23.83
	-3.56	-1.95	3.22	1.22	9.78	9.22
SIM 2	174.94	177.28	166.67	174.44	176.61	173.72
	0.94	-4.06	1.94	-0.17	-4.06	-4.11
SIM 3	37.39	37.39	29.11	32.89	29.50	35.83
	-0.56	-2.45	6.61	5.78	-1.61	0.39

^aTop row of numbers refers to before scores and bottom row to change scores.

Table 14 presents the results of two-way analyses of variance for the before and change scores presented in Table 13. Each analysis was a 2 x 3 factorial design with two categories of proximity and three categories of similarity. An examination of Table 14 shows no significant effects in reference to the before scores which can be interpreted to mean that the treatment groups were initially equal relative to certain attitudes. Regarding the change scores, one significant main effect appeared. This was for item SIM 1 which measured responses to the question, "Do you feel that psychological testing actually provides a good indication of an individual's personality?" As can be seen from Table 13, the source of this effect seems to lie in greater attempts at dissonance reduction as one goes from Low to Moderate to High Similarity.

Since the analyses presented in Table 14 are dealing with change scores, the question arises as to whether these changes are in any way being influenced by the before scores. If the before scores influence the change scores in an inconsistent manner, then the results of the analyses of variance for the latter would be less reliable. In short, we are asking if the within group regression coefficients are homogeneous for any given response measure. Beta coefficients were computed for each treatment group under each response measure. In all cases the signs of the coefficients were equal and for any given response measure, did not seem to differ from each other. It was therefore assumed that the results of the

TABLE 14
CALCULATED F_s FOR SIX VARIABLES MEASURING
ALTERNATIVE MODES OF DISSONANCE REDUCTION
IN TWO-WAY ANALYSES OF VARIANCE^a

Variable	Proximity	Similarity	Interaction
PROX 1	0.58 0.00	0.17 0.17	0.83 0.51
PROX 2	2.17 0.10	0.18 2.12	0.84 0.19
PROX 3	0.19 0.00	0.59 0.75	1.66 0.80
SIM 1	0.03 0.01	0.76 3.32 ^b	0.60 0.07
SIM 2	0.18 0.41	0.13 0.60	0.16 0.15
SIM 3	1.07 0.01	1.38 2.55	0.32 0.15

^aTop row of numbers refers to before scores and bottom row to change scores.

^b_p < .05

analyses of variance for the change scores as presented in Table 14 were reliable and that an analysis of covariance for each response measure would not have produced substantial differences.

Post-Experimental Check On Effectiveness Of Experimental Procedures

As described earlier, E's assistant was sent to each S who took part in both sessions of the experiment to determine the extent to which the experimental inductions were effective. On the basis of an informal interview, the assistant concluded that 7 Ss were suspicious of some aspect of the experiment. These Ss were eliminated from the analysis of results.

DISCUSSION

The results of this study indicate some conditions under which a negative first impression will change in a more positive direction. Before looking at specific hypotheses, let us compare the results as recorded by each measuring instrument, the rating measures and the content analyses. An examination of the two indicates that the former seems to be more powerful than the latter. Specifically, the rating measures are more apt to pick up significant differences than are the content analyses except in situations where impression change differences are large. In the latter case, both are in agreement. This can be seen, for instance, in a comparison of the significance of the differences due to proximity manipulation as picked up by both measures ($F = 4.33$, $p < .05$ for ratings vs. $\chi^2 = 0.91$, $p > .05$ for content analysis) with that resulting from similarity manipulation ($F = 26.53$, $p < .005$ for ratings vs. $\chi^2 = 17.96$, $p < .005$ for content analysis). In view of this, the analysis to follow will be guided by the assumption that the rating measures have a higher power of discrimination than do the content analyses and that, to this extent, the information recorded by each instrument is consistent. Moreover, while the statistics will be presented for all analyses, the interpretation of results will be based on the findings for the rating measures only.

Let us look first at the effects of proximity manipulation. For the rating measures we find both a significant main effect ($F = 4.33$,

$p < .05$) and a significant interaction ($F = 4.25$, $p < .05$). The frequency analysis shows neither ($\chi^2 = 0.91$, $p > .05$ for the main effect; for interaction $p > .05$ on Fisher exact probability tests). However, the results here also indicate an overall trend in the predicted direction (see Table 6). Figure 1 illustrates how these differences distribute themselves based on mean rating scores. Notice that the primary contribution to the significant main effect comes from the differences obtained under Low Similarity ($t = -3.57$, $p < .10$ for rating measures using Scheffé test; see Table 7 for the corresponding results of the content analysis). Within the present formulation this can be interpreted by saying that when a perceiver anticipates a future social interaction with a negative SP, he is in a state of cognitive dissonance. One way he can reduce his dissonance is by changing his perception of the SP in a more positive direction. Consequently, his impression change will be greater than that of a perceiver who does not anticipate any future social contact with the SP.

Let us skip over the Moderate Similarity condition for the moment and consider the results under High Similarity. Hypothesis 4 of this study predicted that the impression change of the No Proximity perceiver here would be the same as that of the Proximity perceiver. As can be seen in Figure 1, this hypothesis is clearly confirmed for the rating measures ($t = -0.16$, $p > .10$ using Scheffé test). Table 7 shows how the results of the content analysis distribute themselves ($p > .05$ using Fisher exact probability tests). What do these findings mean? The original prediction was based on two assumptions. The first was that information relating to similarity is a more potent source of

dissonance arousal than is information relating to proximity. The second was that in situations where both kinds of information are presented simultaneously, the perceiver will initially focus his attention on the more important one only, in this case similarity. After he reduces his similarity-induced dissonance through impression change, he will then look at the more favorable SP within the context of proximity. Since the change in impression under similarity alone is more favorable than that under proximity alone (assumption one), the perceiver should experience no additional dissonance when he now considers the more favorable SP within the context of proximity. Consequently, he should not change his impression any more.

The first assumption was tested through Hypothesis 3 by comparing the impression change of the No Proximity perceiver under High Similarity with that of the Proximity perceiver under Low Similarity. The analysis based on ratings supported this hypothesis ($t = 3.34$, $p < .10$ using Scheffé test; $t = 3.78$, $p < .005$ using difference of means test, one-tailed). The frequency analysis, however, failed to reach significance ($p > .05$ using Fisher exact tests). Table 11 illustrates the latter.

The second assumption was not tested. However, some support for it did come by way of observations made by E during session two of the initial reactions by Ss to the negative SP. In the majority of cases these reactions seemed to relate to the information given concerning personality similarity regardless of the proximity condition. Obviously these observations are by no means conclusive and the question can be

resolved only through future research. In any event the interpretation of the present results will proceed along this line of thinking.

The same argument can be used to explain the absence of differences in impression change between the Proximity and No Proximity perceivers under Moderate Similarity ($t = -0.19$, $p > .10$ for ratings; $p > .05$ for frequencies using Fisher exact test). Here again initial dissonance can be interpreted as resulting only from similarity information and, because the corresponding impression change is more favorable than that resulting from proximity information alone, the impression does not need further modification.

Before moving ahead, let us consider some alternative arguments here. One such argument would be that, even if similarity were more important than proximity in isolation, it does not necessarily follow that the former will be the initial source of dissonance when the two are combined. Perhaps the interaction of the two may serve to enhance proximity information. If this were the case, the initial dissonance of the Proximity perceiver under High Similarity would result from his awareness that he would be rooming with an undesirable individual in the near future. If so, his cognitive state could be compared to that of the Proximity perceiver under Low Similarity, and it would seem reasonable to assume that he would reduce his initial dissonance by changing his impression of the SP at least as much as this perceiver does. Referring again to Figure 1, we find that the Proximity perceiver under High Similarity has formed a more favorable impression than the Proximity perceiver under Low Similarity ($t = -3.18$, $p < .10$

by Scheffé method; $.05 > p > .05$ for Fisher exact tests as indicated in Table 10). We might explain this increment in impression change by saying that once the Proximity perceiver under High Similarity reduces his dissonance by modifying his impression, he views the now more favorable SP within the context of his high similarity to him. This causes some additional dissonance which he reduces by perceiving the SP in a still more favorable light.

This same formulation can be used to explain the absence of differences in impression change between the Proximity and No Proximity perceivers under Moderate Similarity ($t = -0.19$, $p > .10$ for ratings; $p > .05$ for frequencies using Fisher exact test as indicated in Table 7). If initial dissonance is assumed to be proximity-related, then initial impression change reflects attempts to reduce this dissonance. Subsequent impression change results from additional similarity-related dissonance.

Both of these formulations assume that dissonance induction-reduction involves a process of cognitive separation. It is the author's belief that this separation pushes to the foreground the more important cognitive element and that this element serves as the initial and only source of dissonance. How does this compare with Festinger's (1957) suggestion of an additive formulation concerning the magnitude of dissonance? Consider again the situation under High Similarity. Here the No Proximity perceiver is made aware of the existence of a negative SP after he is led to believe that he is highly similar to him in personality. The Proximity perceiver is in the same psychological situation

with the addition that he also expects to be living with this person. According to the additive formulation, if the cognitive state of the Proximity perceiver is such that all three cognitions (i.e., knowledge of a negative SP, similarity and proximity) are salient simultaneously and do not change in importance as a result of the interaction, then the magnitude of the dissonance he experiences should be greater than that experienced by the No Proximity perceiver. The reason for this is because the number of dissonant elements he experiences is one greater than those of the No Proximity perceiver. If this were the case, we would expect a difference in impression change between the two perceivers with the Proximity perceiver giving the more favorable impression. This, however, is not the case.

Yet our findings do not necessarily discredit the additive hypothesis. The present findings could indeed support this hypothesis if certain assumptions were made concerning the importance of proximity and similarity in isolation and in combination. These assumptions would be that while proximity and similarity have definite dissonance-inducing properties in isolation, when they are combined the situation changes such that the total importance of the two cognitions as experienced simultaneously would be equal to the importance of the similarity cognition in isolation. Since the differences are not significant for the proximity perceivers in both Moderate and High Similarity treatments, the further assumption would be that similarity retains its importance while proximity gets downgraded to a position of little or no effect.

Perhaps the cognitive separation formulation and the additive formulation can be more clearly compared in an analogous situation. Consider the case of three children, each of whom dislikes a certain vegetable by the same amount. Let us give this amount a value of 10. Suppose that one child is induced to eat the vegetable and he reduces his dislike to a value of 5 as a means of handling dissonance. The second child is induced to read an essay in front of his class in which he states the virtues of eating this vegetable. This child changes his attitude towards the vegetable so that now it has a value of 8. Now suppose the third child is both asked to read the essay as well as support it by showing how he eats the vegetable. How much of an attitude change can we predict here?

The additive formulation might make one of two predictions. If the importance of each cognition remains the same in the interaction as it was in isolation, then the total dissonance here should be greater than in either isolated case. Thus, the new attitude towards the disliked vegetable might be equal to the initial attitude minus changes resulting from eating the vegetable minus changes resulting from talking about it publicly. This value would be 3 in the present situation

$$\left[10 - (10 - 5) - (10 - 8) \right].$$

The alternative prediction of the additive formulation would assume that as a result of the interaction of the cognitions relating to eating the vegetable and stating its virtues, the importance of the situation changes for the perceiver even though both cognitions are present simultaneously. Thus, the attitude may now become 5 which is equivalent to the attitude in the situation involving only eating the disliked vegetable.

The cognitive separation formulation would predict that in the situation of interaction, the more important cognition would become salient and dissonance reduction would occur relative to only this cognition. Then the second cognition would manifest itself and be evaluated relative to the modified attitude resulting from initial dissonance reduction. However, since reduction of dissonance resulting from the more important cognition produces an attitude change which is greater than that resulting from the less important cognition in isolation, we would expect no further dissonance to occur when the latter is now viewed in the interaction situation. In the present situation we would predict the attitude to change to a value of 5, assuming that eating the vegetable were more important than talking about it publicly.

Since the results of the present investigation support both formulations, the question arises as to which carries more weight. The author is of the opinion that the cognitive separation formulation makes more sense in the present situation. This opinion rests in part on a comparison of the magnitude of the dissonance produced by proximity and that produced by similarity in isolation. Although the former was seen to be less important than the latter as measured through impression change, this by no means undermines the strength of proximity. The proximity differences under Low Similarity are evidence enough of this. Since both factors are therefore quite potent, it seems reasonable to assume that when they are combined, the perceiver assumes an attitude of "Let's worry about one now and the other later," rather than an attitude whereby the status of one and/or the other is reduced.

The author furthermore is of the belief that Festinger's (1957) additive hypothesis is more applicable in situations where different values of the same cognitive variable are considered, that is, where apples are added to apples and not to oranges. If we can assume, as do Brehm and Cohen (1962), that people are capable of making fine discriminations regarding their cognitions, then it is also conceivable that any given cognition can have several values. Further, if this cognition is inconsistent with another held by the perceiver, the higher the value is in the direction of the inconsistency, the greater the dissonance. Notice that this formulation is strictly additive, but that we are dealing with variations along a dimension of one cognition, not with the interaction of one cognition with another.

In the present investigation the additive prediction would be applicable in the case of the similarity manipulation. Assuming that the intervals from low to moderate to high similarity are equal, Hypothesis 2 predicts that the perceiver is in a state of greater dissonance the more similar in personality he believes he is to the negative SP. This is in part based on a suggestion by Brehm and Cohen (1962) that "...the magnitude of dissonance increases in an approximately linear manner as the discrepancy size varies from the completely consonant to the completely dissonant value (p. 13)." Let us now turn to a consideration of the similarity manipulation in more detail.

Variations in similarity produced a significant main effect as clearly indicated by both the content analysis ($\chi^2 = 17.96$, $p < .005$)

and the rating measures ($F = 26.53$, $p < .005$). The significant source of difference was between the Low and Moderate Similarity treatments ($t = -4.83$, $p < .10$ for ratings based on Scheffé test; $\chi^2 = 17.07$, $p < .0005$ for frequency analysis) and between the Low and High Similarity treatments ($t = -7.14$, $p < .10$ for ratings based on Scheffé test; $\chi^2 = 12.88$, $p < .005$ for frequency analysis). The differences between the Moderate and High Similarity treatments were not significant ($t = -2.31$, $p > .10$ for ratings based on Scheffé test; $\chi^2 = 0.84$, $p > .05$ for frequency analysis). The significant interaction effect indicates that these differences were not the same under each level of proximity ($F = 4.25$, $p < .05$ for ratings; $.05 > p > .05$ for Fisher exact tests as indicated in Tables 9 and 10).

Referring again to Figure 1, we can locate the source of these differences. Under No Proximity the pattern represented by the main effect repeats itself. Based on the ratings, significant differences appear between the Low and Moderate Similarity conditions ($t = -5.10$, $p < .10$ using Scheffé test) and the Low and High Similarity conditions ($t = -6.92$, $p < .10$ using Scheffé test), but not between the Moderate and High Similarity conditions ($t = -1.81$, $p > .10$ using Scheffé test). Table 9 presents the results of the frequency analysis and they seem to complement the findings based on the rating measures ($.05 > p > .05$ for Fisher exact tests).^{*} Thus, it seems that while there is an increase in dissonance reduction as similarity goes from

^{*}Notice that in reference to the content analyses these differences are significant in most cases when comparisons are made between non-contiguous categories. This further strengthens the assumption underlying the interpretation of results, namely, that the rating measures are picking up fine differences in impression change while the content analyses are picking up only larger differences.

a moderate to a high level, this increase is not as great as when it goes from a low to a moderate level. To see if this departure from linearity was significant, a trend analysis was performed on the rating scores. This analysis showed a significant curvature in the trend of the means ($F = 4.27$, $p < .05$). If one were to generalize to additional values, impression change might thus be viewed as a negatively accelerated function of induced similarity. Assuming this generalization were correct, how might we interpret it?

One possibility is to say that as induced similarity increases, cognitive dissonance increases in a negatively accelerated fashion. This, in turn, might be accounted for in several ways. For example, one may argue that as induced similarity in personality increases, the importance of the situation increases; but that with each increase in similarity, the increase in importance becomes less and less. In other words, importance may be varying with similarity in a negatively accelerated fashion. In terms of the present results, this would mean that as similarity goes from a low to a moderate level, the importance of the situation increases for the perceiver; and as it goes from a moderate to a high level, the importance increases further, but not as much.

An alternative explanation of a negatively accelerated function of impression change would relate it to Festinger's (1957) notion of resistance to change. Festinger tells us that the extent to which a cognitive element can be modified depends on its resistance to change. This in turn is a function of the reality underlying the cognitive element, be it physical, social or psychological in nature. The

extent to which a cognitive element can be modified then is determined by the extent to which the underlying reality can be modified. In the present experiment, the underlying reality consisted of, in part, knowledge of a negative SP based on a first impression of him. This was a psychological reality subject to modification through impression change. Unless we assume that the psychological reality has zero resistance to change, it seems obvious that the negative first impression will become more positive within limits. And it does not seem unreasonable to assume that these limits are approached in a negatively accelerated fashion.

This alternative explanation undermines the notion of a negatively accelerated increase in cognitive dissonance resulting from similarity information since it is basing the negative rate of impression change not to any underlying corresponding change in dissonance, but instead to the limits of impression change as a means of reducing dissonance. Indeed, this formulation does not tell us what the relationship between induced similarity in personality and corresponding dissonance is except to say that it may be positive.

One way to strengthen this formulation would be to show that dissonance was being reduced in ways other than impression change. The present study investigated six alternative means of dissonance reduction, three of which related to similarity manipulation. The attempt was made to prevent Ss from utilizing these channels of dissonance reduction by means of information presented during both sessions one and two. How successful was this attempt? Table 13 presents the means

of the change scores for each response measure. Each score represents the average difference in attitude change from before to after treatment. Our concern here is with SIM 1, SIM 2 and SIM 3. A significant main effect was found for SIM1($p < .05$), but not for the other two. The interaction was also not significant (see Table 14).

It will be recalled that SIM 1 represents responses to the question "Do you feel that psychological testing actually provides a good indication of an individual's personality?" The significant main effect may be interpreted to mean that as Ss were led to believe they were more similar to the negative SP they attempted to reduce dissonance by placing less faith in the validity of psychological testing. This finding therefore may undermine the notion that dissonance is increasing in a curvilinear fashion as induced similarity increases. Perhaps dissonance increases in a linear fashion and, at high values of similarity, is reduced in ways other than impression change. The possibility always exists, of course, that Ss reduced their dissonance in ways unsuspected by E, or even that they failed to reduce all of their dissonance. The safest conclusion one may draw from the results then is that there appears to be a positive relationship between telling a perceiver that he is similar to a negative SP and inducing in him a state of dissonance, but that the exact nature of this relationship is indeterminate.

Let us now look at the differences in the similarity manipulation under Proximity. With regard to the rating measures, we find significant differences only between the Low and High Similarity treatments ($t = -3.18$, $p < .10$ using Scheffé test). The Low vs. Moderate and the Moderate vs. High comparisons failed to reach significance (respectively, $t = -1.72$ and -1.46 , $p > .10$ using Scheffé test). As Table 10 indicates, this pattern repeats itself with the content analysis ($.05 > p > .05$ using Fisher exact tests).

Looking at Figure 1 we can see that the trend of impression change under Proximity is linear. In addition, we notice that the major source of difference between this trend and that under No Proximity comes from the Low Similarity condition. This difference, as stated above, is assumed to reflect the greater dissonance of the Proximity perceiver relative to the No Proximity perceiver under Low Similarity.

Under Moderate Similarity we notice an increase in favorability of impression change though it is not significantly different from Low Similarity ($t = -1.72$, $p > .10$ for ratings using Scheffé test; $p > .05$ for Fisher exact tests as indicated in Table 10). To repeat the hypothesis of cognitive separation developed earlier, the increase in favorability of impression here results only because of the increase in the degree of similarity the perceiver is led to believe exists between him and the SP. Once his dissonance is reduced and the SP is perceived as more favorable, the information relating to the future interaction with him doesn't produce further dissonance.

Under High Similarity we see that the impression change is not significantly different from that of Moderate Similarity ($t = -1.46$, $p > .10$ for ratings based on Scheffé test; $p > .05$ for Fisher exact tests presented in Table 10), but does differ significantly from that under Low Similarity (for ratings $t = -3.18$, $p < .10$ using Scheffé test; $.05 > p > .05$ for Fisher exact tests presented in Table 10). Again the interpretation here is that the nonsignificant increment in impression change from Moderate to High Similarity is a function only of similarity-related dissonance. The fact that the increment is not

significant can be interpreted by either formulation offered above in reference to the hypothesis relating similarity to impression change in a negatively accelerated fashion.

How do the findings for similarity affect the additive hypothesis suggested by Festinger (1957) and specifically the linear hypothesis suggested by Brehm and Cohen (1962)? While not conclusive, the results seem to indicate that as the value associated with a cognition increases in a direction inconsistent to another cognition, dissonance increases. Furthermore, the possibility presents itself that the relationship between the degree of inconsistency and dissonance is curvilinear rather than linear.

Let us now attempt to summarize the results and the manner in which we interpret them. We begin by saying that when a perceiver receives information stating that he will have some future contact with a negative individual, he will be in a state of cognitive dissonance and will attempt to reduce this dissonance by changing his impression of the individual in a more favorable direction. If, however, he is at the same time given information which leads him to believe that he is at least moderately similar to this individual in personality, he will again experience dissonance, this time, however, only as a result of the information pertinent to the personality similarity. The proximity information will recede into the background. In his attempt to reduce this dissonance he will so modify his perception of the negative individual that when the proximity information is again salient to him, it will no longer be a source of dissonance. Thus,

there will be no subsequent impression change. There also appears to be a trend indicating that the more similar the perceiver believes he is in personality to the negative individual, the more his impression will change in a more favorable direction.

How else can these results be interpreted aside from the dissonance formulation? One interesting possibility comes from studies in social perception. These studies concern the effect of personal and social factors on perceptual processes. Ss are usually varied along a dimension relating to some personal or social factor such as a need or emotion and are asked to indicate their perceptual responses to some impoverished stimulus situation. The findings are usually interpreted as showing the effect of the manipulated factor on the perceptual process (e.g., Levine, Chein and Murphy, 1942; McClelland and Atkinson, 1948; and Lazarus, Yousem and Arenberg, 1953). A dramatic instance of this kind of phenomenon would be of a dehydrated individual seeing a mirage while lost on the desert.

If we can assume that the stimulus situation of the present experiment was impoverished enough to maximize the influence of any personal desires which might have been salient, then we might interpret the results as reflecting variations in these desires as they affected perceptual processes. Such desires would most likely have related to the favorability of the SP. Thus, Ss who were told they were going to be rooming with the SP might have hoped that he was a nice fellow; those who were not given this information would have had no reason to

harbor such hopes. Similarly, Ss who were told that they were at least moderately similar to the SP in personality might have implicitly expressed the desire that he be favorable in personality since, of course, this would be a reflection on themselves. In any case the argument here is that S would have distorted his first impression by varying degrees and not change it as assumed. Moreover, the predictions concerning the nature of this first impression would not be unlike those relating to the nature of the impression change in the present investigation.

The critical question becomes then: how impoverished was the stimulus information pertaining to the SP? This information consisted of minimal neutral background information followed by a recording of the SP relating one of his dreams. It could be argued that presenting the SP primarily through his voice was unstructured in itself since it prevented S from validating any impression he formed by referring to other evidence such as facial expression, body gestures, type of clothing worn, etc. Consequently, if he desired his impression to be positive, it would have had a better chance at being so. It is assumed, however, that the nature of the dream content as well as the effect produced by the voice relating the dream was sufficient to counter the ambiguities based in the voice itself. Granted that dream content in itself is usually distorted, and that this too might have facilitated the manifestation of desires, it was felt that in this case the dream content was presented in such a way that it portrayed the dreamer as an individual of dubious character. This was evident in the clarity of

the dream and in the occasional insinuations made by the SP that the dream was indicative of his personality as, for example, when he says "And actually I do know all of Shakespeare's works quite well because I read extensively." Moreover, the manner in which the dream was related portrayed a highly conceited individual which served to reinforce the content expressed in the dream.

Finally, and most important, the negativity of the stimulus person was pretested and was found to be sufficiently negative for the purposes of the present study. If the stimulus situation were impoverished, a more neutral impression would have been obtained in the pretest. Thus, it would seem safe to conclude that the present results do not fit into a framework of social perception theory.

We may next ask how the dissonance interpretation relates to research undertaken in person perception. A review of the literature here points to certain well established notions. One of these is the role that proximity plays in interpersonal perceptual and emotional processes. Most theorists would agree that proximity relates in a positive fashion to favorability of interpersonal judgments. Dramatic instances of this are provided in the extensive studies of Festinger, Schachter and Back (1950) and Deutsch and Collins (1958). Both studies showed that the closer two people live together, the more favorably disposed they are towards each other.

However, it is not inconceivable that distance might also relate to unfavorable judgments so that the closer two people live together, the less favorably disposed they are to each other. While it appears that distance is a necessary condition for favorable judgments to occur,

it appears equally likely that it is not a sufficient condition. Rather its essential role seems to be one of setting the stage for the interplay of subsequent forces which themselves will determine the nature of the interpersonal judgment. Furthermore, these forces seem to be contingent on the information exchanged between individuals both directly and indirectly, either consciously or unconsciously.

For example, information exchange might demonstrate to one individual that another is a potential source of reward to him. Homans (1961) as well as Thibaut and Kelly (1959) conceptualize the nature of the relationship between two individuals as one where rewards are received and costs incurred. The greater the rewards relative to the costs for one individual, the more favorably disposed he will be towards the other.

What are some rewards that people supply? Here we have many possibilities. For example, Schachter (1959) suggests that one individual may serve as a means of anxiety reduction for another when the latter is made anxious. Another possibility would be that one individual helps fulfill another's need for approval, acceptance and the like (e.g., Dittes, 1959). Winch (1952) hypothesizes that people who are attracted to one another usually satisfy complementary needs in each other, whatever these needs may be. Here we see reciprocal rewards in operation.

Another determinant of interpersonal judgment which may be elucidated through information exchange is the degree of similarity between two individuals regarding some particular characteristic. Studies have shown that such similarity usually increases the favorability of the relationship between individuals. Newcomb (1961) found, for example, that, given enough time for two individuals to become familiar with

each other, the more attitudinal agreement they exhibited, the more favorably disposed they were towards each other. Byrne and his associates have corroborated this finding (e.g., Byrne and Nelson, 1965; Byrne and Griffitt, 1966). The positive relationship between similarity and attraction has itself been explained in various ways. Newcomb (1956), for example, maintains that similarity produces attraction because the likelihood of reward is higher for similar than for dissimilar individuals. Festinger (1954) feels that similarity provides social validation for one's beliefs and thus rewards a drive to evaluate the correctness of these beliefs.

How do the findings of the present investigation fit here? What they have shown essentially is that another determinant of the kind of interpersonal judgment one makes relates to the consistency of his cognitive structure. Here we have considered individuals who were not in close proximity to each other nor were they similar to each other. Rather they had expectations concerning proximity and similarity. Yet these very expectations were sufficient to affect the process of interpersonal judgment. Clearly then, any research endeavor which seeks to evaluate the influence of a certain factor on interpersonal perceptual processes should take into consideration the extent to which such processes are being influenced by dissonance-related variables. Suppose, for example, we are studying prejudice, and we want to see to what extent integration produces a change in attitude. Any meaningful conclusions we draw would have to take into account any attitude change resulting from dissonance reduction stemming from expectations concerning integration.

A final point - how do the present findings relate to practical problems? As far as proximity is concerned, the possibilities are many. For what has been shown essentially is that when a person expects to be in some future association with a negative other, his impression will become more favorable before this interaction takes place. Going back to the problem of prejudice again, suppose a policy maker wanted to reduce it or eliminate it. Conceivably he could do so by emphasizing the inevitability of future contact between dissenting groups and thereby putting them in a state of dissonance. If he can assume that dissonance will be handled largely through changes in interpersonal evaluation, or if he can make sure of this, then he could have reason to believe that the prejudice would be reduced before any contact takes place. Whether the actual contact perpetrates this process or reverses it is another question altogether.

An interesting application of the results relates to the similarity findings. It is often the case that one person, believing that he shares a moderate degree of similarity to a negative other, perceives the other in a favorable light. The two, moreover, do not necessarily have to be associated in any way. Consider individuals, for instance, who share similar reference groups. They may perceive each other as similar in this respect and as a result distort their mutual evaluations. An extreme case of this would be nationalism. Here individuals often respond to each other in terms of national similarity and tend to distort negative judgments in a more positive direction. In terms of social policy, the task here would be to make the perception more veridical.

APPENDIX A

COLLEGE HOUSING STUDY

The College Housing Study, of which there was a long and short form, consisted of a booklet divided into two parts, A and B. The cover sheet for the entire booklet and the directions for Part A for both forms are reproduced on Pages 111 and 112 respectively. As can be seen, the instructions for Part A required Ss to respond to each of 10 questions which followed by making a dash-mark across a 5-inch vertical line which accompanied each question and which had extremes of "Definitely Yes" and "Definitely No." The 10 questions were arranged, for both long and short forms, one to a page in the following order:

Would you object to your roommate smoking in the room?

Can you sleep with a light on?

Are you interested in joining any dormitory activities?

Do you feel that roommates actually spend a great deal of time together?

Would you describe your housekeeping habits as being average?

Does the end of your dormitory life seem a long way off?

Can you study with a radio playing?

Are you presently associating with someone (roommate or otherwise) whom you don't care for?

Do you prefer to study in the late evening?

Do you feel that psychological testing actually provides a good indication of an individual's personality?

STATE UNIVERSITY OF NEW YORK
AGRICULTURAL AND TECHNICAL COLLEGE
AT FARMINGDALE

COLLEGE HOUSING STUDY

Fill in:

Name _____ Age _____

Home Address _____

Telephone _____ Sex _____

Curriculum _____

Residence Hall _____ Room _____

Today's Date _____ Semester _____

DIRECTIONS: This booklet contains some items designed to measure your personality for the purposes of a study in dormitory living. In responding to these items, try to be frank. Work quickly and do not spend too much time on any one item. We want your first reaction, not a long drawn out thought process. There are no right or wrong answers since this is not a test of intelligence or ability.

Now turn the page to Part A and signal to the examiner that you are ready to begin.

-----do not write below this line-----

SC _____ SA _____ IS _____ DISC _____

DR1 _____ DR2 _____ DR3 _____ DR4 _____

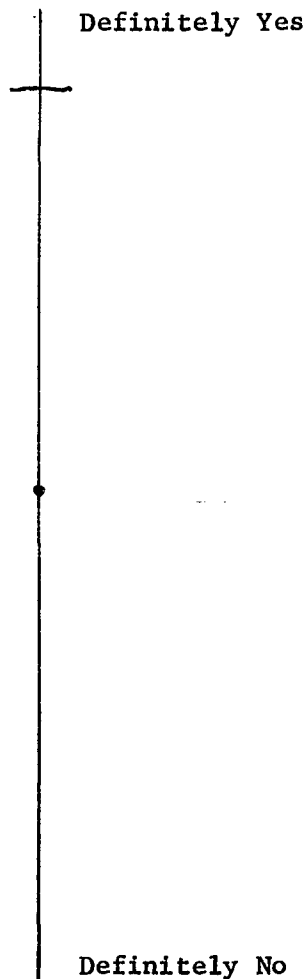
DIRECTIONS: On the following pages are presented several questions concerning dormitory living. Below each question is a vertical line, the ends of which are marked Definitely Yes and Definitely No. You are to answer each question by making a dash-mark (—) somewhere along this line. For example, the first question asks:

Would you object to your roommate smoking in the room?

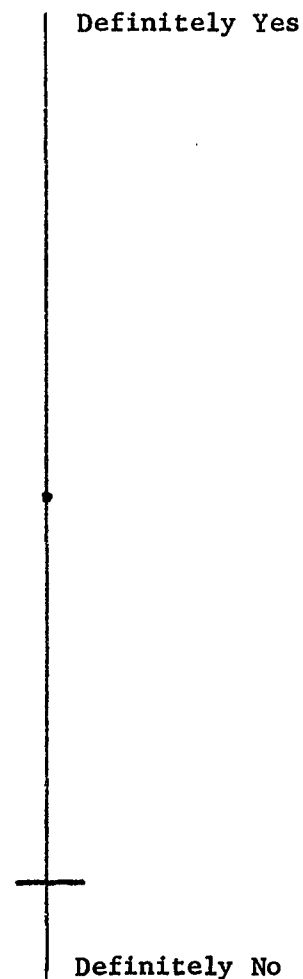
The more you think you would object to this, the farther toward the Definitely Yes end of the line you would place your dash-mark as shown in Example 1 below. Similarly, the less you think you would object, the farther toward the Definitely No end of the line you would place your dash-mark as shown in Example 2. Use this same procedure to answer each question.

Now turn the page and begin. Continue until you have answered all questions. Then go on to Part B.

Example 1



Example 2



Part B of the College Housing Study was the actual source of difference between the short and long forms. The former was a copy of the Index of Adjustment and Values (IAV) put out by Bills, (Bills, undated manual; Bills, Vance and McLean, 1951) and is reproduced on Pages 114 and 115. As can be seen, the directions here require S to respond to certain traits in terms of how much of the time each trait is characteristic of him, how he feels about this, and how much of the time he would like each trait to be characteristic of him. Altogether there are 49 traits listed on one page in the order presented on Page 115. The longer version of Part B is, for all practical purposes, the same as the short form, the major difference being that here each trait appears on separate pages instead of all being on one page. The order in which the traits appear is the same in both forms, however. The mode of presentation for each trait in the long form of Part B is exemplified in the directions reproduced on Pages 116 and 117.

PART B (short form)

There is a need for each of us to know more about ourselves, but seldom do we have an opportunity to look at ourselves as we are or as we would like to be. On the following page is a list of terms that to a certain degree describe people. Take each term separately and apply it to yourself by completing the following sentence:

I AM A (AN) _____ PERSON.

The first word in the list is academic, so you would substitute this term in the above sentence. It would read--I am an academic person.

Then decide HOW MUCH OF THE TIME this statement is like you, i.e., is typical or characteristic of you as an individual, and rate yourself on a scale from one to five according to the following key.

1. Seldom, is this like me.
2. Occasionally, this is like me.
3. About half of the time, this is like me.
4. A good deal of the time, this is like me.
5. Most of the time, this is like me.

Select the number beside the phrase that tells how much of the time the statement is like you and insert it in Column I on the next page.

EXAMPLE: Beside the term ACADEMIC, number two is inserted to indicate that--occasionally, I am an academic person.

Now go to Column II. Use one of the statements given below to tell HOW YOU FEEL about yourself as described in Column I.

1. I very much dislike being as I am in this respect.
2. I dislike being as I am in this respect.
3. I neither dislike being as I am nor like being as I am in this respect.
4. I like being as I am in this respect.
5. I like very much being as I am in this respect.

You will select the number beside the statement that tells how you feel about the way you are and insert the number in Column II.

EXAMPLE: In Column II beside the term ACADEMIC, number one is inserted to indicate that I dislike very much being as I am in respect to the term, academic. Note that being as I am always refers to the way you described yourself in Column I.

Finally, go to Column III; using the same term, complete the following sentence:

I WOULD LIKE TO BE A (AN) _____ PERSON.

Then decide HOW MUCH OF THE TIME you would like this trait to be characteristic of you and rate yourself on the following five point scale.

1. Seldom, would I like this to be me.
2. Occasionally, I would like this to be me.
3. About half of the time, I would like this to be me.
4. A good deal of the time, I would like this to be me.
5. Most of the time, I would like this to be me.

You will select the number beside the phrase that tells how much of the time you would like to be this kind of a person and insert the number in Column III.

EXAMPLE: In Column III beside the term ACADEMIC, number five is inserted to indicate that most of the time, I would like to be this kind of person.

Start with the word ACCEPTABLE and fill in Columns I, II and III before going on to the next word. There is no time limit. Be honest with yourself so that your description will be a true measure of how you look at yourself.

	I	II	III		I	II	III
a. academic	_____	_____	_____	25. meddlesome	_____	_____	_____
1. acceptable	_____	_____	_____	26. merry	_____	_____	_____
2. accurate	_____	_____	_____	27. mature	_____	_____	_____
3. alert	_____	_____	_____	28. nervous	_____	_____	_____
4. ambitious	_____	_____	_____	29. normal	_____	_____	_____
5. annoying	_____	_____	_____	30. optimistic	_____	_____	_____
6. busy	_____	_____	_____	31. poised	_____	_____	_____
7. calm	_____	_____	_____	32. purposeful	_____	_____	_____
8. charming	_____	_____	_____	33. reasonable	_____	_____	_____
9. clever	_____	_____	_____	34. reckless	_____	_____	_____
10. competent	_____	_____	_____	35. responsible	_____	_____	_____
11. confident	_____	_____	_____	36. sarcastic	_____	_____	_____
12. considerate	_____	_____	_____	37. sincere	_____	_____	_____
13. cruel	_____	_____	_____	38. stable	_____	_____	_____
14. democratic	_____	_____	_____	39. studious	_____	_____	_____
15. dependable	_____	_____	_____	40. successful	_____	_____	_____
16. economical	_____	_____	_____	41. stubborn	_____	_____	_____
17. efficient	_____	_____	_____	42. tactful	_____	_____	_____
18. fearful	_____	_____	_____	43. teachable	_____	_____	_____
19. friendly	_____	_____	_____	44. useful	_____	_____	_____
20. fashionable	_____	_____	_____	45. worthy	_____	_____	_____
21. helpful	_____	_____	_____	46. broad-minded	_____	_____	_____
22. intellectual	_____	_____	_____	47. businesslike	_____	_____	_____
23. kind	_____	_____	_____	48. competitive	_____	_____	_____
24. logical	_____	_____	_____	49. fault-finding	_____	_____	_____

PART B (long form)

DIRECTIONS: This device is a way of helping you to state some of your beliefs about yourself. It will tell nothing more than what you want it to say - there are no hidden scores or tricks. It will have value only if you are careful and do your best to give an accurate description of yourself.

On each of the following pages are presented 3 questions concerning (1) how you see yourself in reference to a specific trait, (2) how you feel about this, and (3) how you would like to see yourself in reference to this trait. Below each question are five choices. You are to answer each question by picking one of these choices.

Example: Consider the trait ACCEPTABLE. Question 1 asks:

1. How would you complete the following sentence in describing yourself? Circle one of the five choices below it.

I am _____ an ACCEPTABLE person.

1. seldom
2. occasionally
3. about half the time
4. a good deal of the time
5. most of the time

If you feel that you are seldom an acceptable person, then you would circle number 1. If you feel that you are occasionally an acceptable person, then you would circle number 2, and so on.

Question 2 asks:

2. How do you feel about yourself as described above? Circle one of the five choices presented below.

1. I very much dislike being as I am in this respect.
2. I dislike being as I am in this respect.
3. I neither dislike being as I am nor like being as I am in this respect.
4. I like being as I am in this respect.
5. I like very much being as I am in this respect.

(turn page)

Here you have to select the statement that best tells how you feel about yourself as described in Question 1. Suppose, for example, that you completed Question 1 by choosing the word "seldom." This means that you think you are seldom an acceptable person. How do you feel about this? This is what Question 2 is asking. If you dislike very much being seldom an acceptable person, then you would answer this question by circling number 1. If you dislike being seldom an acceptable person, then you would circle number 2, and so on.

Question 3 asks:

3. How would you complete the following sentence in describing how you would like to be? Circle one of the five choices below it.

I would like to be _____ an ACCEPTABLE person.

1. seldom
2. occasionally
3. about half the time
4. a good deal of the time
5. most of the time

If you feel that you would seldom like to be an acceptable person, then you would circle number 1. If you feel that you would occasionally like to be an acceptable person, then you would circle number 2, etc.

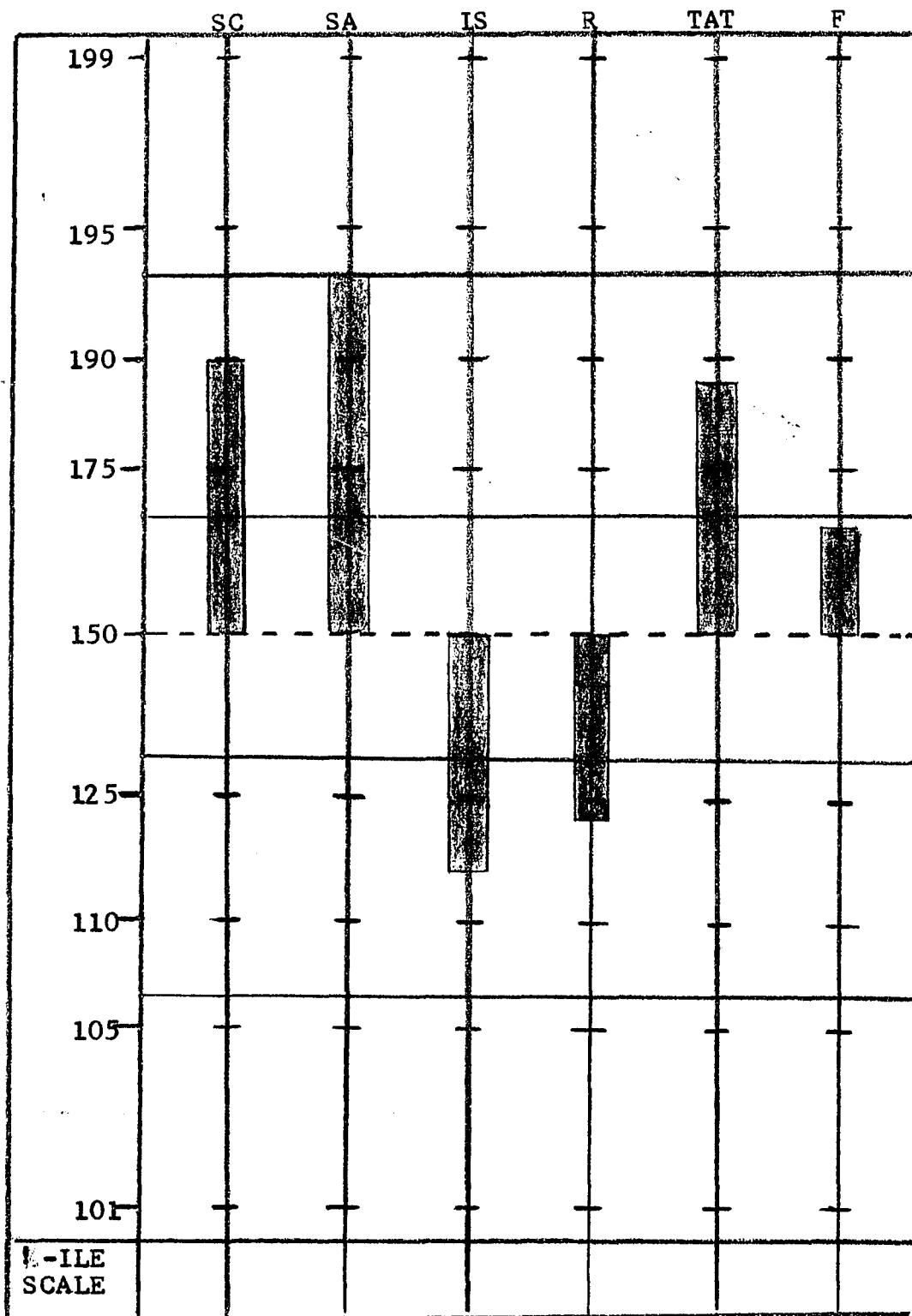
Now turn the page and begin. Continue until you have answered all questions. Altogether there are 49 traits.

APPENDIX B

PERSONALITY PROFILES

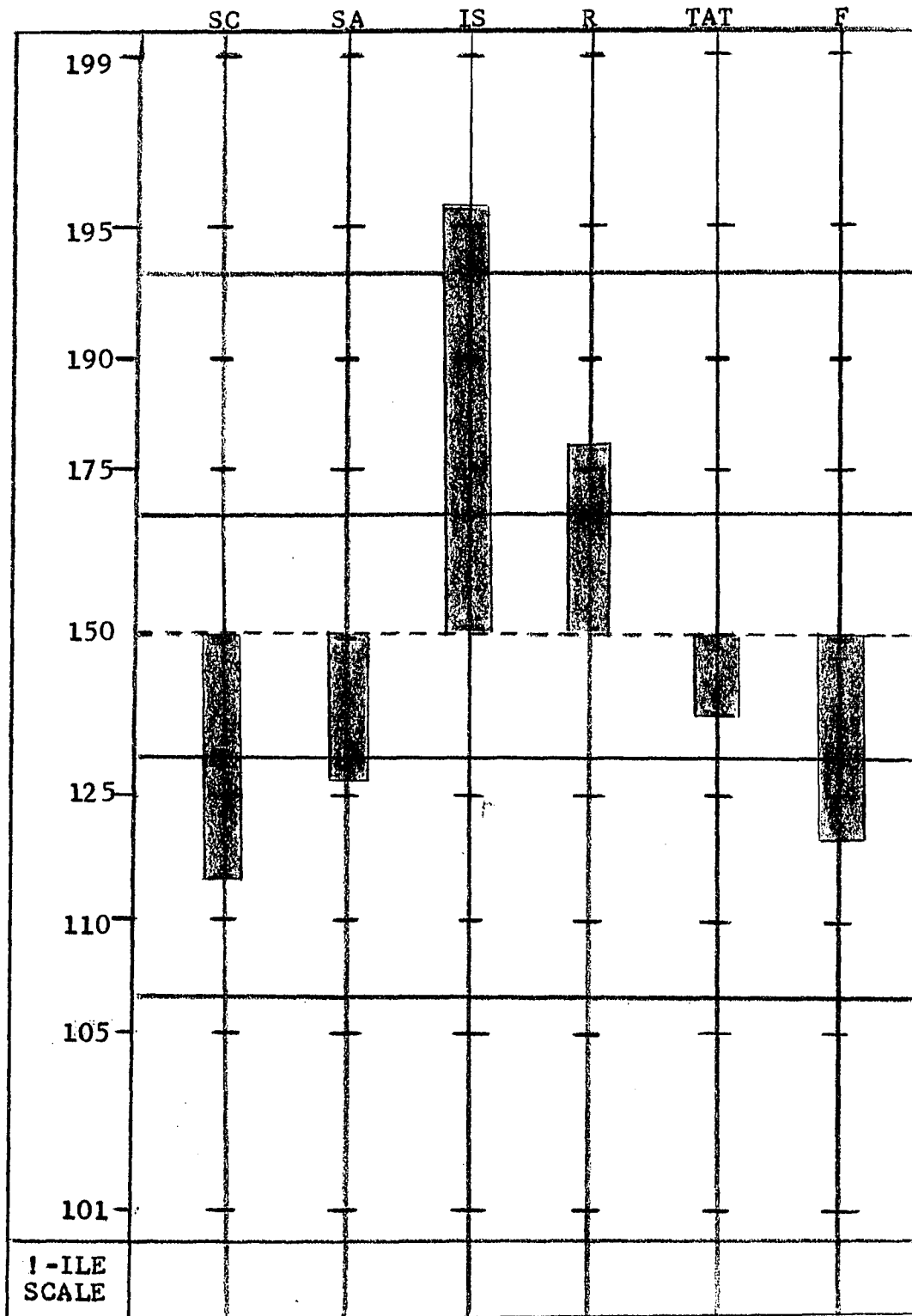
The next four pages illustrate the personality profiles presented to Ss during session two. Each S saw two profiles, one representing his own test performance and the other representing the performance of his future or would-be roommate. The profile on Page 119 is what all Ss were shown as being reflective of their personalities. The profile depicting the confederate's personality was, for Low Similarity Ss, the one shown on Page 120, for Moderate Similarity Ss, the one shown on Page 121, and for High Similarity Ss, the one shown on Page 122.

PERSONALITY PROFILE
COLLEGE HOUSING STUDY
FARMINGDALE, 1968/69*



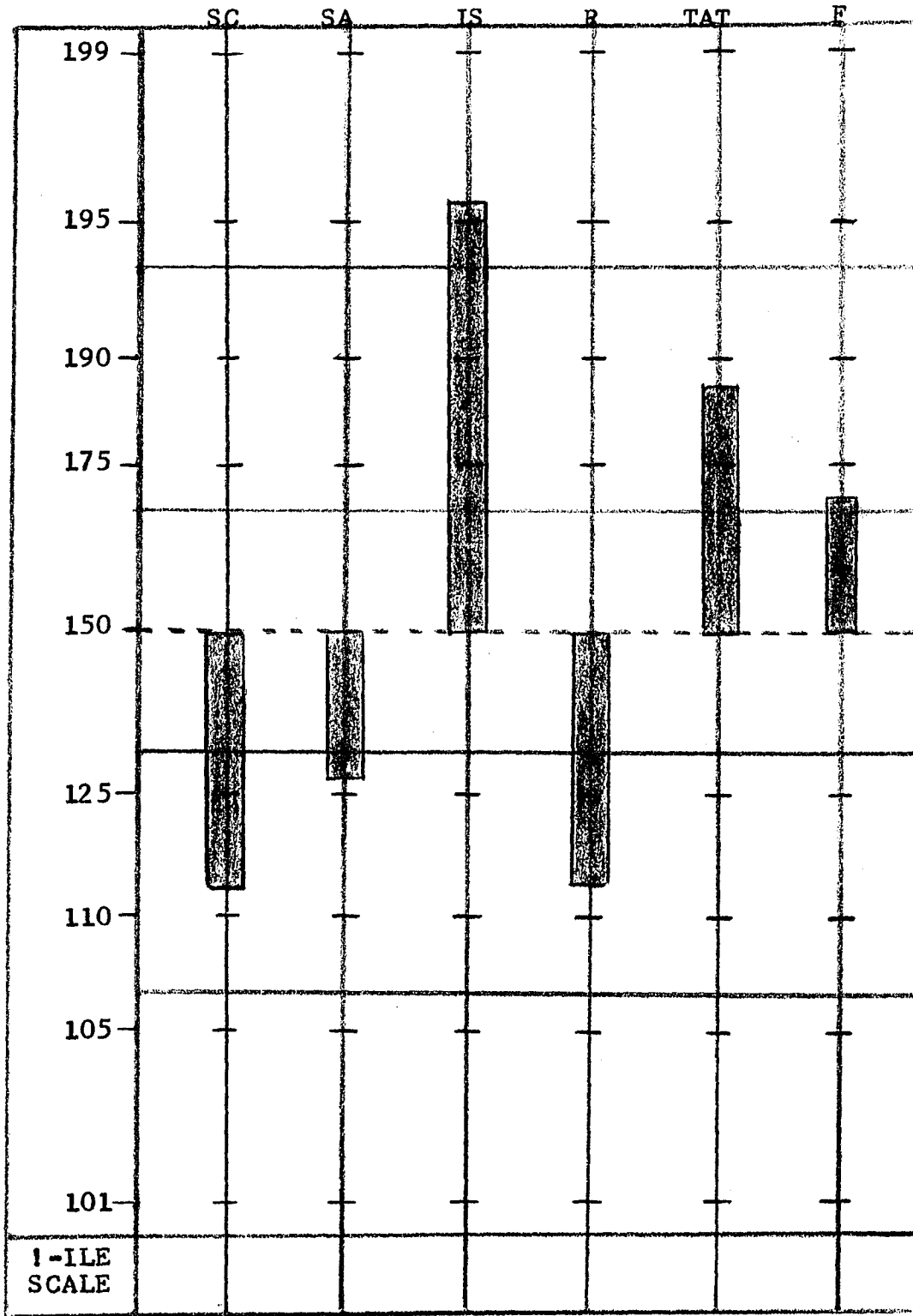
* This was shown to all Ss.

PERSONALITY PROFILE
COLLEGE HOUSING STUDY
FARMINGDALE, 1968/69 *



* This was shown to Low Similarity Ss

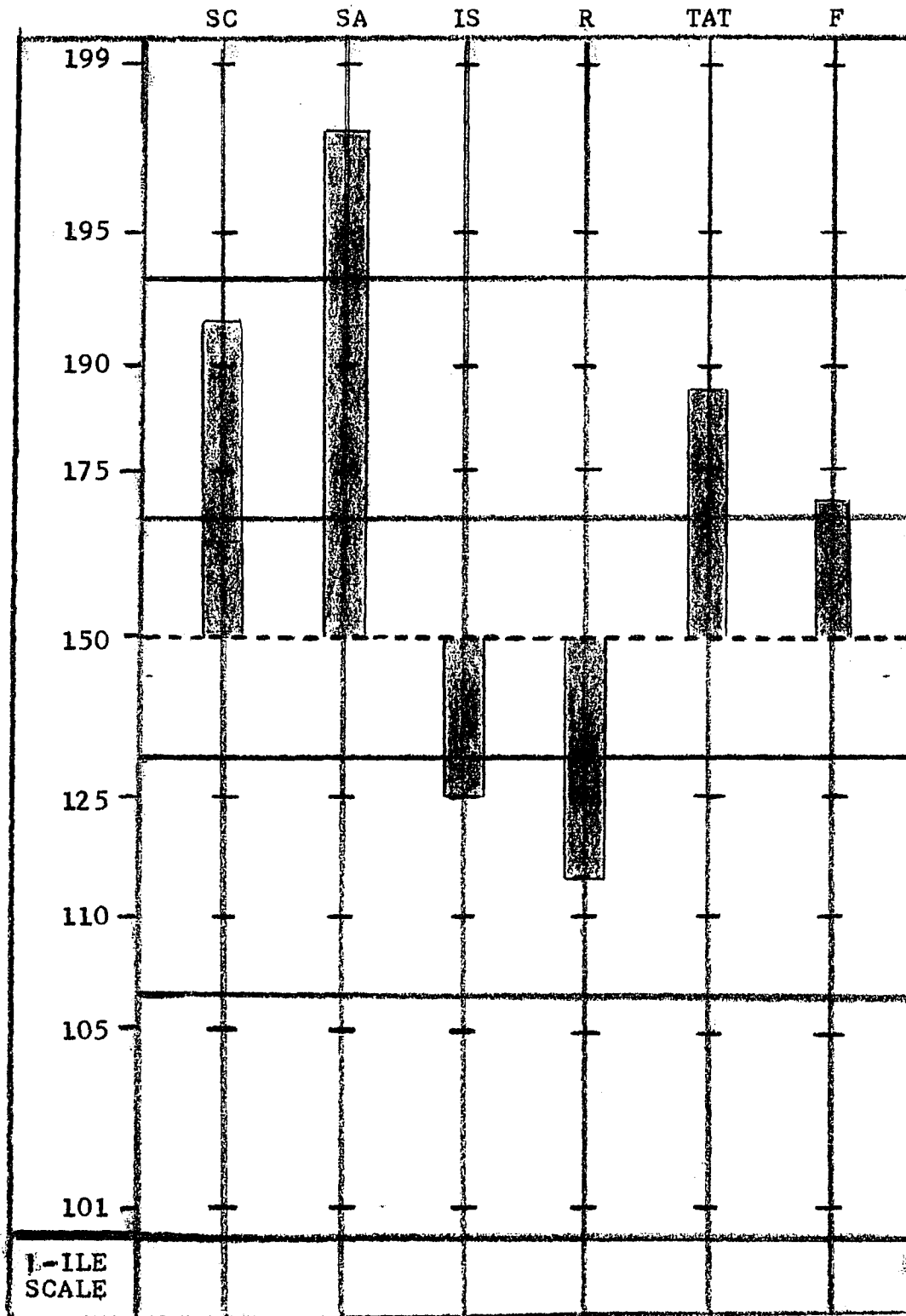
PERSONALITY PROFILE
COLLEGE HOUSING STUDY
FARMINGDALE, 1968/69*



*

This was shown to Moderate Similarity Ss

PERSONALITY PROFILE
COLLEGE HOUSING STUDY
FARMINGDALE, 1968/69*



*

This was shown to High Similarity Ss

APPENDIX C

FIRST IMPRESSIONS BOOKLET

The First Impressions booklet, presented to Ss during session two, contained three parts. The cover sheet is reproduced on Page 125. Parts I and II are both reproduced here on Page 126, but in the actual booklet each took up one page.

The directions for Part III are shown on Page 127. As can be seen, these directions required Ss to respond to subsequent questions by making a dash-mark across a 5-inch vertical line accompanying each question, the end of this line having as indicators, "Definitely Yes" and "Definitely No." There were 14 questions in all presented one to a page in random order, this order differing from S to S. These questions and one order of presentation are presented below:

Would you consider this individual a warm person?

Would you consider this individual an annoying person?

Would you consider this individual a snobbish person?

Would you consider this individual an obnoxious person?

Would you admit this individual into your circle of close friends?

Would you consider this individual a happy person?

Would you consider this individual a rude person?

Would you say that your overall impression of this individual was favorable?

Would you consider this individual a friendly person?

Would you consider this individual a spiteful person?

Would you admit this individual into the social organization of greatest importance to yourself?

Would you consider this individual a kind person?

Would you consider this individual a considerate person?

Would you like this individual as your roommate?

STATE UNIVERSITY OF NEW YORK
AGRICULTURAL AND TECHNICAL COLLEGE
AT FARMINGDALE

FIRST IMPRESSIONS

Fill in:

Name _____

Residence Hall _____ Room _____

DIRECTIONS: This booklet contains some items designed to measure your reaction to the student whom you just heard speaking over the tape recorder. Work quickly, and do not spend too much time on any one item. Turn the page and begin with PART I. When you are finished, go on to PART II and PART III.

PART I

DIRECTIONS: Below, write a brief description of the individual whom you just heard speaking over the tape recorder. In your description indicate what kind of a person you think he is, how you would "size him up," how you feel toward him, etc. You have 10 minutes to do this. When you are finished, turn the page.

PART II

DIRECTIONS: Answer the following questions by making a check-mark (✓) next to your choice.

1. How much of a similarity were you told there was between you and the person whose voice you heard over the tape recorder?

High Similarity_____

Moderate Similarity_____

Low Similarity_____

2. Were you told that you definitely will be sharing a room with this person?

Yes_____

No_____

PART III

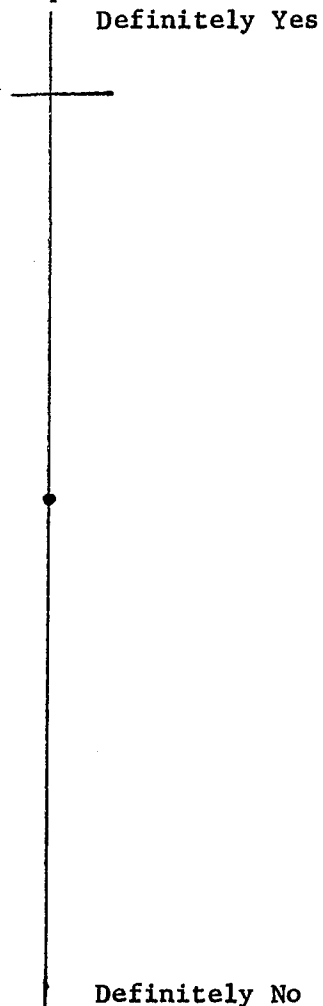
DIRECTIONS: On the following pages are presented several questions concerning the student whom you heard over the tape recorder. Below each question is a vertical line, the ends of which are marked Definitely Yes and Definitely No. You are to answer each question by making a dash-mark (—) somewhere along this line. For example, one question asks:

Would you consider this individual a kind person?

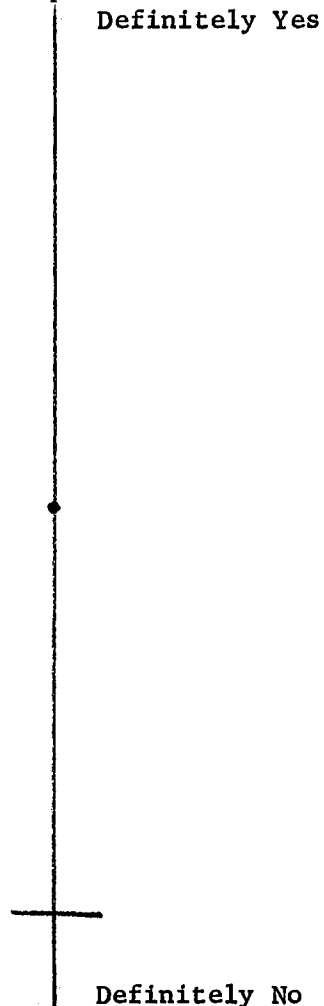
The more you think you would consider him a kind person, the farther toward the Definitely Yes end of the line you would place your dash-mark as shown in Example 1 below. Similarly, the less you think you would consider him a kind person, the farther toward the Definitely No end of the line you would place your dash-mark as shown in Example 2 below. Use this same procedure to answer each question.

Now turn the page and begin. Continue until you have answered all questions.

Example 1



Example 2



APPENDIX D

HOMOGENEITY RATIO

According to Scott (1960), HR, a measure of test homogeneity, is based on the following:

1. If a score Y is computed which is the sum of scores of individual test items, then the variance of this total score will equal the sum of individual item variances plus twice the sum of their covariances:

$$\sigma_Y^2 = \sum \sigma_i^2 + 2 \sum \sigma_i \sigma_j r_{ij}$$

2. If all the inter-item correlations are zero, this becomes:

$$\sigma_Y^2 = \sum \sigma_i^2$$

Or, to put it otherwise, in the case of a purely heterogeneous test, the variance of the total score will equal the sum of the individual item variances.

3. If all the inter-item correlations are unity, the formula becomes:

$$\sigma_Y^2 = \left(\sum \sigma_i \right)^2$$

Or, in the case of a purely homogeneous test, the variance of the total score will equal the square of the sum of the standard deviations of the individual items.

4. The total test variance can thus lie $\left(\sum \sigma_i \right)$ between a minimal value of $\sum \sigma_i^2$ and a maximal value of $\left(\sum \sigma_i \right)^2$.

5. HR relates to the proportion of the distance between these two extremes by which the total variance exceeds the minimal value:

$$HR = \frac{\sigma_Y^2 - \sum \sigma_i^2}{\left(\sum \sigma_i \right)^2 - \sum \sigma_i^2}$$

6. The computation of HR according to the formula presented in 5 above produces:

$$HR = \frac{(204.58)^2 - 5482.54}{(276.50)^2 - 5482.54} = .512$$

7. It can be shown that HR is a weighted average of the intercorrelations among all pairs of items in the test (Scott & Wertheimer, 1962). In other words, the same value of HR as obtained using standard deviations and variances can be obtained by:
- correlating every item-pair
 - weighing every item-pair by the geometric mean of the item variances
 - adding up these products
 - dividing by the sum of the weights.

$$HR = \frac{\sum \sigma_i \sigma_j r_{ij}}{\sum \sigma_i \sigma_j}$$

APPENDIX E

CONTENT ANALYSIS: MANUAL OF INSTRUCTION

Material To Be Analyzed

The material to be analyzed in the present study consists of written protocols in which each S describes his impression of the stimulus person (hereafter designated as SP). This is in accordance with the instructions given to him in Part I of the First Impressions booklet (see Appendix C).

The Units Of Interest

The recording unit, which refers to the actual content that is categorized, consists here of a theme. A theme is defined as any group of words that contains at least a verb and its subject and that forms a complete thought. For example, consider the following description:

I can't say I like him or dislike him, but he sounds like a guy who thinks he knows it all, or maybe he thinks he is almighty.

This content would be broken down into three recording units since there are three complete thoughts being expressed here:

S cannot evaluate SP.
SP thinks he knows it all.
SP thinks he is almighty.

The enumeration unit, which is the basis upon which quantification is performed, is considered here to be the same as the recording unit.

The context unit, which relates to the frame of reference one uses in categorizing the recording unit, consists of S's entire protocol.

The Variable Of Interest

For present purposes, the variable of interest is designated as the favorability of response. Broadly defined, this variable relates to the "good-bad" aspect of the impression.

The Categories For This Variable

The variable designated as favorability of response has the following six broad categories associated with it:

0. Impression Unrelated To Favorability Dimension
1. Very Unfavorable Impression
2. Moderately Unfavorable Impression
3. Neutral Or Balanced Impression

4. Moderately Favorable Impression

5. Very Favorable Impression

The number next to each category represents the value assigned to that category. An ordinal relationship is assumed to exist between categories 1 through 5. Moreover, these categories are further broken down into four more specific categories in which:

- a. S describes SP.
- b. S expresses a feeling towards SP
- c. S describes a future or conditional interaction with SP.
- d. SP is compared to S or to significant others.

Indicators Of Each Category

The following indicators of each category enable the coder to determine whether any given unit falls within this category:

0. Impressions Unrelated To Favorability Dimension:-material put into this category consists of that content which is not indicative of an evaluative judgment made by S towards SP. This may include any of the following:

- a. S is not able or willing to judge SP as in:

I can't really say what kind of a person he is
since it was only a dream he was talking about.

- b. S repeats what SP said as:

By that part of his dream that he mentioned a
couple of times that he did very well, really
very good.....

- c. S gives possible reasons for SP's behavior:

This could have to do with what his parents said
or did in the past.....

- d. S makes introductory statements such as:

I have two feelings toward the person I have
just heard on the recorder.

1. Very Unfavorable Impression:-material placed in this category indicates that S's impression was very unfavorable. This may manifest itself in any of the following ways:

- a. S describes SP. S describes SP in a strongly negative fashion as in the following:

While hearing this tape, he seemed very repulsive to me.

- b. S expresses a feeling towards SP. S expresses feelings of extreme dislike towards SP like:

My first impression is one of extreme dislike.

- c. S describes a future or conditional interaction with SP. S describes a situation where he and SP will not, would not, or could not get along at all, a situation which would be avoided by S at all costs. For example:

He sounds like the type of person I could really grow to hate.

- d. SP is compared to S or to significant others. SP is described as being completely opposite to S in character, or opposite to people significant to S. For example:

He probably couldn't stand me either - I don't know Shakespeare.

2. Moderately Unfavorable Impression:-material placed in this category indicates that S's impression was somewhat unfavorable. This may be indicated as follows:

- a. S describes SP. S describes SP in a somewhat negative fashion as in the following:

He could perhaps at times be a little conceited.

- b. S expresses a feeling towards SP. S expresses some dislike towards SP as:

.....on these two points I feel a little dislike towards him.

- c. S describes a future or conditional interaction with SP. S describes a situation where he and SP will not, would not or could not get along that well, but a situation that would be tolerable. For example:

I don't think I could live too comfortably with him.

- d. SP is compared to S or to significant others. S describes himself as being somewhat unlike SP in character; or S describes SP as being somewhat unlike other individuals significant to S. For example:

I feel he's not too much like me because he likes to read and I don't.

or

He talks in a manner which I don't think most college students talk.

3. Neutral Or Balanced Impression:-material placed in this category indicates that S took a middle stance in evaluating SP or that his evaluation consisted of both positive and negative factors simultaneously. This kind of impression may be manifested in any of the following ways:

- a. S describes SP. S describes SP in a balanced fashion or uses neutral character traits in his description. For example:

His personality seems all right in some respects and in other respects not that good.

or

He seems to be an average looking guy.

- b. S expresses a feeling towards SP. S expresses ambivalent or indifferent feelings towards SP like:

I like and envy drive in people because I feel that I don't have enough, but I strongly dislike someone who would hurt other people to get what he wants.

or

This makes me feel indifferent towards him.

- c. S describes a future or conditional interaction with SP. S describes a situation where the likelihood that he and SP will not, would not or could not get along equals the likelihood that they will, would or could get along, or a situation having neutral characteristics. For instance:

In some respects we would probably get along, while in other respects we probably would not.

or

I feel as roommates we could really learn a lot
from each other.....

- d. SP is compared to S or to significant others. S sees himself as like and unlike SP simultaneously; or SP is perceived as being like and unlike significant others simultaneously; or S describes similarities and/or differences between himself and SP which are neutral in character. For example:

.....what this person has accomplished is what I would like to accomplish. Even though I would like to accomplish superiority, I would not like to let other people know myself in the manner that this student did.

4. Moderately Favorable Impression:-material placed in this category indicates that S's impression was somewhat favorable. This may be indicated as follows:

- a. S describes SP. S describes SP in a somewhat positive fashion, like:

This person seems to be pretty nice.

- b. S expresses a feeling towards SP. S expresses some like towards SP, as in the following:

I admire people who think positively.....

- c. S describes a future or conditional interaction with SP. S describes a situation where he and SP will, would or could get along fairly well. For instance:

I would be able to get along with him fairly well.

- d. SP is compared to S or to significant others. S describes himself as being somewhat like SP in character; or S describes SP as being somewhat like other individuals significant to S. For instance:

At times his dream is like mine, in as he is seeking recognition.

5. Very Favorable Impression:-material placed in this category indicates that S's impression was very favorable. This may manifest itself as follows:

- a. S describes SP. S describes SP in a highly positive fashion as in the following:

.....a really nice guy who isn't afraid to say what he feels.

- b. S expresses a feeling towards SP. S expresses feelings of extreme like towards SP as in the following:

My attitude towards him would be as one would greet a comrade.

- c. S describes a future or conditional interaction with SP. S describes a situation where he and SP will, would or could get along very well. For example:

I think he would be a good roommate to have and should be a good friend.

- d. SP is compared to S or to significant others. S describes himself as being very much like SP in character; or S describes SP as being very much like other individuals significant to S. For instance:

I think he is very much like me because in the dream he was the greatest.

Procedure

The coder is to proceed in the following fashion in analyzing each protocol:

1. First he is to read the entire protocol to get a feeling of S's general impression of SP.
2. Next he is to re-read the protocol dividing it into relevant themes. Themes are to be separated by simple pencil marks directly on the protocol. Each theme should fit into one of the specific categories outlined above. If this is not directly the case, the coder is to manipulate the elements of the theme so that this can be done. For example, the theme:

One can believe only 10% of what he says.

can be manipulated into the theme:

He is a liar.

or

He is a phony.

3. Next he is to categorize each theme indicating which category it falls into by writing the number corresponding to that category directly after the theme. Thus, one number, ranging from 0 to 5, should appear after each theme.
4. Last of all he is to add all these values together and divide the result by the total number of themes minus those given a zero rating. This will give an overall favorability rating (ORF) which should be recorded to the nearest whole number. This number will indicate which broad category the impression falls into.

APPENDIX F

INTERCORRELATIONS AMONG MEASURES OF FAVORABILITY FOR N = 110 Ss

Measure	P1	P2	P3	P4	P5	N1
P1		.62***	.28***	.75***	.62***	.57***
P2			.43***	.68***	.67***	.48***
P3				.35***	.23***	.33***
P4					.68***	.50***
P5						.42***
N1						
N2						
N3						
N4						
N5						
S1						
S2						
S3						
OI						
PT						
NT						
ST						
TT						
$\bar{X}$	40.43	46.56	42.56	44.18	38.99	34.56
SD	19.81	17.22	18.77	18.35	17.49	20.33

* $p < .05$ (one-tailed tests)
 ** $p < .01$ (one-tailed tests)
 *** $p < .005$ (one-tailed tests)

APPENDIX F (continued)

INTERCORRELATIONS AMONG MEASURES OF FAVORABILITY FOR N = 110 Ss

Measure	N2	N3	N4	N5	S1	S2
P1	.34***	.62***	.62***	.51***	.55***	.67***
P2	.38***	.54***	.62***	.55***	.53***	.52***
P3	.31***	.17*	.13	.39***	.36***	.34***
P4	.29***	.51***	.58***	.56***	.50***	.53***
P5	.21*	.52***	.63***	.37***	.52***	.51***
N1	.54***	.61***	.49***	.56***	.57***	.56***
N2		.42***	.38***	.45***	.38***	.34***
N3			.58***	.50***	.57***	.45***
N4				.52***	.44***	.51***
N5					.46***	.38***
S1						.68***
S2						
S3						
OI						
PT						
NT						
ST						
TT						
$\bar{X}$	37.03	41.65	34.42	40.84	37.52	38.45
SD	20.44	20.09	21.14	20.42	19.88	20.52

*p < .05 (one-tailed tests)
 **p < .01 (one-tailed tests)
 ***p < .005 (one-tailed tests)

APPENDIX F (continued)

INTERCORRELATIONS AMONG MEASURES OF FAVORABILITY FOR N = 110 Ss

Measure	S3	OI	PT	NT	ST	TT
P1	.64***	.68***	.83***	.68***	.69***	.82***
P2	.58***	.64***	.85***	.66***	.61***	.79***
P3	.36***	.29***	.58***	.34***	.40***	.48***
P4	.60***	.64***	.88***	.63***	.61***	.79***
P5	.59***	.64***	.80***	.55***	.60***	.73***
N1	.60***	.59***	.58***	.82***	.65***	.76***
N2	.43***	.47***	.39***	.72***	.43***	.58***
N3	.48***	.60***	.60***	.80***	.56***	.74***
N4	.52***	.67***	.65***	.77***	.55***	.74***
N5	.51***	.56***	.60***	.78***	.50***	.71***
S1	.77***	.74***	.62***	.62***	.91***	.78***
S2	.63***	.64***	.65***	.58***	.86***	.75***
S3		.76***	.70***	.65***	.90***	.82***
OI			.73***	.74***	.80***	.87***
PT				.73***	.74***	.91***
NT					.69***	.91***
ST						.88***
TT						
$\bar{X}$	30.31	35.37	212.73	188.50	106.27	542.87
SD	20.79	21.24	72.39	79.55	54.62	204.58

*_p < .05 (one-tailed tests)
 **_p < .01 (one-tailed tests)
 ***_p < .005 (one-tailed tests)

APPENDIX G

MEANS AND STANDARD DEVIATIONS FOR 15 VARIABLES MEASURING
FAVORABILITY OF RESPONSE UNDER SIX TREATMENT CONDITIONS^a

Var.	Low Similarity		Moderate Similarity		High Similarity	
	No Proximity	Proximity	No Proximity	Proximity	No Proximity	Proximity
P1	20.11 16.36	38.61 16.83	46.72 14.06	40.67 21.06	49.89 15.94	49.00 16.72
P2	29.78 16.53	43.72 14.08	45.00 15.50	46.94 14.20	58.44 12.72	56.11 12.40
P3	34.22 18.34	35.78 19.06	42.44 18.56	42.11 14.67	45.28 19.56	52.00 14.24
P4	29.83 18.89	40.67 13.13	48.11 15.08	42.44 17.36	52.89 18.79	51.61 17.29
P5	22.39 18.30	37.22 11.99	42.28 12.49	42.83 15.08	45.72 14.56	44.61 19.48
N1	17.17 15.08	30.11 16.77	36.28 20.11	43.11 23.53	39.44 19.32	40.67 14.19
N2	26.17 24.83	33.44 17.41	34.78 19.48	42.28 22.21	42.50 18.37	41.33 11.84
N3	24.44 18.86	39.78 14.39	36.67 17.94	46.61 21.19	51.50 16.46	48.89 17.43
N4	17.89 18.43	31.94 22.71	37.94 17.11	36.28 20.24	47.61 16.33	37.17 18.82
N5	22.06 17.03	36.11 13.82	46.67 18.83	40.89 18.77	50.33 18.82	47.11 19.83
S1	14.83 14.95	30.50 14.77	38.67 14.71	38.50 18.41	47.94 14.49	52.39 15.10
S2	13.83 13.89	34.22 17.14	43.72 13.94	41.94 17.01	50.22 18.92	48.28 15.65
S3	5.28 9.96	15.75 14.16	32.00 17.78	34.00 19.47	42.28 19.11	42.33 17.10
OI	11.06 11.89	27.11 15.99	38.11 19.97	41.11 20.21	44.61 15.71	49.22 17.04
$\bar{X}_T$	20.65 9.63	34.66 9.09	40.66 10.79	41.41 15.93	47.76 11.06	47.13 10.77

^aTop row of numbers refers to means and bottom row to standard deviations.

APPENDIX H

CALCULATED Fs FOR 15 MEASURES OF FAVORABILITY
IN TWO-WAY ANALYSES OF VARIANCE

Variable	Proximity	Similarity	Interaction
P1	1.12	12.14**	5.06**
P2	2.54	17.55**	2.95
P3	0.59	5.15**	0.36
P4	0.15	8.71**	2.18
P5	2.38	9.48**	2.70
N1	3.67	8.78**	0.86
N2	1.38	3.51*	0.55
N3	4.58*	8.78**	2.27
N4	0.03	7.52**	3.61*
N5	0.22	11.00**	3.07
S1	4.71*	27.11**	2.36
S2	3.00	22.28**	5.35**
S3	5.44*	22.41**	4.11*
OI	5.47*	24.40**	1.48
XT	4.33*	26.53**	4.25*

*_p < .05
**_p < .01

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