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# The Body Language of Self-Disclosure

Duane Connett

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"THE BODY LANGUAGE OF SELF-DISCLOSURE"

(TITLE)

BY

DUANE CONNETT

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SUBMITTED IN PARTIAL FULFILLMENT OF THE REQUIREMENTS  
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YEAR

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### Abstract

A study was conducted to investigate the relationship of the Jourard Self-disclosure Inventory (JSDI) to 1) nonverbal behavior and 2) actual disclosure (validation of the JSDI) as measured by the number of words and speaking time. Latency was also involved. From 120 students completing the inventory 30 students scoring in the upper 30% (high-disclosers) and 30 from the lower 30% (low-disclosers) were chosen to participate in an interview. The interview consisted of 30 topics of varying intimacy about which Ss disclosed. The high-discloser group and low-discloser group were compared by a rating scale for "open" behaviors "closed" behaviors during the interviews. The verbal tapes of the two groups were also compared for differences in main effects. The results showed 1) significant t-tests for Arm Openness ( $t=2.43$ ,  $p<.025$ ), Eye Gaze ( $t=2.09$ ,  $p<.05$ ), and Total Hand Motion ( $t=2.48$ ,  $p<.01$ ), 2) little support for the JSDI in an analysis of variance of verbal measures, implying that the JSDI may not be an acceptable measure for predicting disclosure. Implications were discussed.

## THE BODY LANGUAGE OF SELF-DISCLOSURE

Duane Connett

Self-disclosure (SD) has been defined by Jourard and Lasakow (1958) as the process of making the self known to other persons. In the Transparent Self Jourard (1964) suggests that SD may be basic to the attainment of mental health, and that failure to disclose may result in psychological maladjustment. An individual reveals himself to another person, a target person, under different circumstances and to varying degrees of intimacy.

Research seems to show that individuals vary in the degree of intimacy each will discuss with another person, that is, individuals are more willing to talk about some topics than other more intimate topics. SD has been studied under different conditions to test such variables as to whom a person discloses, sex differences in SD, and other variables to be mentioned, but little research has been done to study the nonverbal accompaniments (the body language) of SD. These nonverbal aspects of SD may be hand movements, foot movements, postures, and/or eye contact. What a person says nonverbally can be as revealing as the disclosures he makes verbally. The present study is presented as an investigation into the relationship between the intimacy of a topic being discussed by an interviewer and a subject, and the body language used by the subject as he discloses himself about the topic. Also involved were the determination of accurate measures of SD, which was a validation study of a measure developed by Jourard, a prominent researcher in the area of SD.

### Studies of Self-disclosure

The conditions under which a person discloses may determine how much



a person discloses to another person. Argyle and Dean (1965) suggest that an "intimacy equilibrium" exists in a dyad in which a disclosure process develops. One member of such a dyad may retreat from psychological or physical closeness. This hypothesis was investigated by studying differences in eye contact (EC) when psychological nearness was associated with physical proximity. Subjects (Ss) were seated 2, 6, and 10 feet apart, one member of which was a confederate (an individual briefed in the study acting as a S) who continuously gazed at the naive S. Results indicated that duration of EC with the confederate increased with interpersonal distance.

Other studies (Chittick & Himmelstein, 1965; Ehrlich & Graeven, 1971; Jourard & Jaffe, 1970; Worthy, Gray, & Kahn, 1969) have investigated the concept proposed by Argyle and Dean also referred to as "reciprocity of intimacy." Chittick and Himmelstein (1965) observed groups in which confederates disclosed to varying degrees of intimacy. Naive Ss tended to conform to the confederate's self-disclosing behavior, and revealed more when others revealed more, and less when others revealed less. Worthy, et al. (1965) measured SD as a function of social reward, and likewise discovered disclosure as a reciprocal behavior. Worthy, et al. (1965) that the disclosure in a dyad "proceeds to an agreeable level of intimacy." Another study (Ehrlich & Graeven, 1971) confirmed the idea of reciprocity of intimacy by having a S and confederate talk for 16 minutes, alternately for two minutes each. The confederate varied the intimacy content of his speech, and S's speech was measured for intimacy levels, which varied accordingly as the confederate's speech varied. Jourard and Jaffee (1970) measured reciprocal intimacy by an interviewer's modeling of different lengths of introductory utterances. Female Ss were interviewed over 20 disclosure topics after being selected into one of four groups on the basis of scores

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on the Jourard SD-40 questionnaire. This study investigated the effect of different lengths of interviewer modeling. A positive relationship resulted between the interviewer utterances and subsequent S's utterances. Jourard and Friedman (1972) also found in the results of their study that Ss to whom an interviewer disclosed in turn disclosed more.

Jourard has developed a measure of SD called the Jourard Self-disclosure Inventory (JSOI), also referred to as the SD-60. The complete inventory can be found in Jourard and Lasakow (1958). In this study Jourard originally developed the SD-60 to investigate social distance. Jourard has subsequently used the JSOI extensively in studying SD (Jourard & Lasakow, 1958; Jourard, 1959; Jourard & Landsman, 1960; Jourard & Friedman, 1970; Jourard & Jaffee, 1970). The SD-60 contains 60 statements, ten in each of the following six subject areas: attitudes and opinions, tastes and interests, work or studies, money, personality, and body. A S is asked to indicate to what extent he has discussed the ten statements under each topic with each of four target persons - mother, father, best male friend, and best female friend. The S indicates the extent of disclosure using the following scale:

1 - Told the other person nothing about this aspect of me.

2 - Talked in general terms about this item. The other person has only a general idea about this aspect of me.

3 - Talked in full and complete detail about this item to the other person. He knows me fully in this aspect and could describe me accurately."

The instrument used in the present study is a variation of the SD-60 that Jourard and Lasakow (1958) developed. The Jourard Inventory is also used in shortened forms such as the SD-25 (Jourard, 1961), and the SD-40 (Jourard & Jaffee, 1970). The numbers refer to the number of statements

contained in the inventory. The statements contained in these inventories tend to cover the same six areas as the SD-60, but are worded differently and are not explicitly divided into the topic areas.

The JSDI has been a major source of measurement of SD. An investigator uses this instrument to determine the intimacy level of a S's past disclosure. This estimate of potential disclosure is sometimes correlated with actual disclosure in an interview and with other variables. Weigel, Weigel, and Chadwick (1969) administered the SD-60 to 21 male and 21 female SS, and asked them to indicate not only to whom they had disclosed information in the past, but also to whom they would disclose the same information (referring to the same target persons). SS were not willing to initiate SD at a greater depth than they had before, but would be willing to disclose in more depth topics initiated by a significant other. The authors elucidate this result by suggesting that external circumstances may not affect disclosure as much as the tendency to "not lower one's mask to the world unless made safe by other's initiation."

Not all research with the SD-60 has been positive. For example, Weigel, Weigel, and Chadwick (1969) criticized the Jourard Inventory in its use as a measure of SD. Other research (Himelstein & Kimbrough, 1963; Pedersen & Breglio, 1968; Hurley & Hurley, 1969; Vondracek, 1969) of SD has been critical of Jourard inventories. Himelstein and Kimbrough (1963) used classroom introductions as a measure of SD, and attempted to predict the depth and length of the introductions with the SD-60. These investigators criticized the SD-60 for lack of validity in predicting depth and length of introductions. Students in a graduate education course were asked to introduce themselves, by name and present professional position, to the class. Appearances were arranged in alphabetical order. After students

made introductions, the JSDI was given to compare the actual disclosure with measured disclosure. Himelstein and Kimbrough (1963) noted Ss who introduced themselves later in the session revealed more about themselves. This study did not show the SD-60 could predict under these circumstances. The authors of the study suggest that more accurate predictions of disclosure can be made by controlling situational variables, than by a psychometric device. However, variables in this study were very much uncontrolled. Primarily, the experimental situation involved in this study, that of classroom introductions, is quite different from a dyadic interview to be used in the present study. There is little research value in predicting introductions in an education course. With many more individuals and disclosing behaviors involved in a classroom than an interview, there was much more uncontrolled influence on subsequent disclosures. This was reflected in the data in which individuals speaking later in the sequence of Ss disclosed for longer periods and more intimately than those speaking before them.

Vondracek (1969) gave the SD-60 to 60 male Ss to attempt to predict SD in an interview. Five male and five female interviewers were used. Each interviewer interviewed two Ss using one of three interview techniques: probing, revealing, and reflecting. Amount and intimacy of SD in the interviews were measured and correlated with the data from the SD-60. Amount of disclosure was determined by timing the verbalizations of the S through the interview, and intimacy was determined by the rating of tapes of the interviews by two judges. The results indicated that the SD-60 was not predictive under these experimental conditions. Although Vondracek measured actual disclosure in an interview, the manner in which the interviews were conducted allowed for many uncontrolled variables. First, there were ten



interviewers used, which made for ten environmental settings under which the interviews took place. Second, three different interview techniques were used, so that this also caused variability in amount and intimacy of SD. Third, since the study was really designed to study the effects of interview techniques on disclosure, with many variables involved, Vondracek's statement concerning the validity of the SD-60 finds little basis due to the methodology of the study.

Hurley and Hurley (1969) cautioned acceptance of research claiming validity of Jourard's SD-60. Fifty students were administered the SD-60 at the beginning and end of a 10-week course. Ss were also given three independent measures of SD and an index of self-concealment. The SD-60 positively related with self-concealment, but not with the measures of SD. The investigators concluded that their results were indicative that the Jourard inventory was an unsatisfactory general measure of disclosure. This study appears to have the strongest basis for criticism, but a group instead of a dyadic relationship was used in measuring actual disclosure. Also, the measures of SD used by the authors to compare with the JSDI were developed for this study, and invalidity of these measures could show little relationship with the JSDI. The validity of the other measures used were not described by the authors. Unless all instruments are known to be valid, relationships with the JSDI cannot be considered reliable evidence against the JSDI.

Pedersen and Breglio (1968) compared college students scores on two of Jourard's inventories, the SD-25 (1961) and the SD-60, with a questionnaire administered to measure actual disclosure. Pedersen and Breglio did not find significant differences between the Jourard inventories and their measure of actual disclosure. On the basis of their results the

investigators claimed little validity for the SD-60, and none for the SD-25. This study used a written questionnaire as a measure of actual disclosure. The questionnaire was definitive in what the Ss were asked to write, and limited the amount of disclosure as compared to disclosure in an interview situation. In the present study disclosure occurred in an interview, so the argument of Pedersen and Breglio is invalid as related to the present study.

In consideration of the criticisms of the research presented in the foregoing discussion and within the experimental conditions from which the criticisms were made compared to the conditions of the present study, the Jourard used in this study was considered a valid measure of SD.

Some studies have shown apparent differences in disclosure between males and females under various conditions (Doster & Strickland, 1959; Himelstein & Lubin, 1966; Hurley & Hurley, 1969; Jourard, 1958; Jourard & Lasakow, 1958; Jourard & Landsman, 1960; Jourard & Richman, 1963; Jourard, 1971; Jourard & Friedman, 1971). Jourard has noted sex differences in disclosure in a number of studies. Jourard and Friedman (1971) studied disclosure in males and females under four experimental conditions: with the experimenter in or out of the room (Ss spoke into a tape recorder in the latter condition), and, when in the room, the experimenter maintained either constant EC or a minimum of EC. Intimacy increased from experimenter out of room, to experimenter in the room with varying amounts of EC. The most intimate condition involved constant EC. No differences in females were found, but more disclosure resulted in males as experimental conditions became more intimate. Both males and females disclosed more as the experimenter disclosed more. Also, Jourard found that females disclose more than males, as in several other studies (Jourard, 1958; Jourard & Lasakow,

1958; Jourard & Landsman, 1960; Jourard & Richman, 1963; Jourard, 1971).

Doster and Strickland (1969) also reported more disclosure in females with the JSDI. The SD-60 was given to young adults along with the Parent-Child Interaction Rating, and the Marlowe-Crowne Social Desirability Scale. They reported significant positive relationships between nurturance ratings for each parent, suggesting that offspring see similarities in child-rearing attitudes of their parents. There resulted a greater over-all disclosure by ss who saw their parents as highly nurturant than ss who saw parents as low in nurturance. There was more disclosing to mother than father, and more disclosing by females than males. Hurley and Hurley (1969), in studying differences in disclosure between volunteers and nonvolunteers, found that male volunteers disclosed more than males who did not volunteer, but no relationship with females. Himmelstein and Lubin (1966) attempted to correlate SD, measured by the SD-60 and defensiveness, measured by the IPTPI K scale. This study found no relationship between self-disclosing behavior and defensiveness, but secondarily revealed evidence that females disclose more than males.

#### Studies on Nonverbal Behavior

Several studies have investigated the nonverbal accompaniments of SD (Argyle & Dean, 1965; Breed, 1972; Exline, Gray, & Schuette, 1965; Fast, 1970; James, 1932; Mehrabian, 1972; Schutz, 1967). Argyle and Dean (1965) and Breed (1972) observed EC during disclosure by ss to a confederate. Argyle and Dean varied the physical closeness of a S and a confederate, and observed differences in visual behavior. Intimacy in the Breed study (1972) was determined by the posture of the confederate. Verbal interaction was kept on a low intimacy level. A male and a female confederate were trained to assume one of three postures to attain one of three intimacy conditions. High intimacy was defined as direct facing, forward

lean, and constant EC. The medium intimacy condition was direct facing, an erect posture, and intermittent EC. In the low intimacy condition the posture assumed was facing at a 45-degree angle, backward lean, and only two EC. The results of this study indicated that EC increased as intimacy increased. As intimacy increased forward leans increased. These results were explained in part by liking for the confederate, which may have increased as intimacy increased. It can also be explained by reciprocal intimacy. In studies on reciprocal intimacy (Chittick & Himelstein 1965; Ehrlich & Graeven, 1971) intimacy was defined verbally, so that a confederate established intimacy conditions by verbal behavior. In these studies the more verbally intimate the confederate, the more verbally intimate the Ss. Breed (1972) established intimacy nonverbally, by posture and EC of the confederate. The Ss may have reciprocated the nonverbal intimacy of the confederate by reciprocating the posture of the confederate. This might explain the results of Breed's study, which are contrary to what might be expected, and contrary to the results of other studies (Exline, et. al., 1965; James, 1932). James (1932) found that a forward lean was indicative of communicating a relatively positive attitude, whereas a backward lean communicated a negative attitude. High intimacy in an interview with a stranger, which will be a condition of the present study, would seem to produce such negative feelings in the interviewee, thus inducing more backward leans. Exline, et. al. (1965) observed Ss through a one-way mirror as they were interviewed about innocuous or intimate topics. As the interviewer questioned about increasingly intimate topics, EC became less than innocuous topics were discussed. Other results indicated a sex difference in EC behavior. In short women seemed more willing to maintain EC regardless of the sex of the other person.



Mehrabian (1972) explored the behaviors of deceitful communicators, simulating the general situation in which a person is unwilling to convey feelings verbally. Subjects were instructed to be either truthful or deceitful to an interviewer. When being deceitful, the Ss nodded and gestured less, exhibited fewer leg and foot movements, assumed less direct-facing positions to the interviewer, talked less and slower with more speech errors, and smiled more. Schutz (1967) suggests that arms and legs crossed indicate tightness and withdrawal, a resistance to anyone reaching them. Fast (1970) says that crossed arms, crossed legs, and/or a backward lean denotes a negative attitude.

## Purpose

The present study will be concerned with the nonverbal accompaniments of SD, categorized as either "open" or "closed" positions or postures. The terms "open" and "closed" are associated with either the position of only certain parts of the body, as the arms and legs, or the posture of the body in general. Derlega (1971) defined "open" and "closed" positions of parts of the body when a person is seated. These parts of the body included arm positions, leg positions, head movements, eye contact and general body posture. Derlega's ratings of openness and closeness compare with what other researchers have referred to as reflecting positive (open) and negative (closed) attitudes (Fest, 1970), truthfulness or deceitfulness (Mehrabian, 1972), resistance (as when a person sits in a "closed" posture disapprovingly to what is being said to him) (Schutz, 1967), and high and low intimacy postures (Breed, 1972).

This study attempted to relate disclosure to nonverbal behavior, and to the predictive validity of the JSDI. The nonverbal behaviors that accompany disclosure - eye contact, hand gestures, postures, and foot movements - are considered to be "open" or "closed," and are felt to vary in relationship to the intimacy of the information being disclosed. The JSDI is claimed to be a measure with which to predict disclosure, and should show significant relationships between groups in respect to types of nonverbal behavior.

Actual disclosure in an interview was used to determine the validity of the JSDI. The actual disclosure was measured by a simple count of the number of words spoken, and the length of time taken to disclose. In addition the relationship between disclosure and latency before

responding was investigated.

The following hypotheses were investigated with respect to disclosure and nonverbal behavior, and the validation of the JSDI using measures of actual disclosure:

I. High-disclosers were expected to display "open" behaviors significantly more than low-disclosers who were expected to display significantly more "closed" behaviors.

II. High-disclosers were expected to:

- a) disclose using more words per topic than low-disclosers;
- b) begin speaking (have shorter latency or reaction time) more quickly after presentation of the topic to be discussed than low-disclosers;
- c) disclose using longer periods of time (in seconds) per topics than low-disclosers.

A positive relationship among the scores on the JSDI of the Ss completing the inventory and the nonverbal behavior during the interviews, and the measures of actual disclosure were expected.

## Methodology

### Subjects

All Ss were students enrolled in introductory psychology and sociology courses at Eastern Illinois University, and all were female. It was decided to employ only females because of the differences found between males and females in disclosure, which would add complicating variables. Also, Jourard (1958) had originally used an all-female population with the JSDI. One hundred twenty volunteers completed the Jourard inventory (described below). Sixty females, individually rated as high or low disclosers, were drawn from this sample and subsequently interviewed in the manner to be described.

### Instruments

A self-disclosure questionnaire developed by Jourard (1971) and based upon the SD-60 was used to determine groups of high- and low-disclosing individuals. This questionnaire consists of 40 topics of low, medium, or high intimacy value. Examples of the topics are "My smoking habits," "Times I have felt lonely," "My school grades," and "How often I have had sexual relations in my life." Ss were asked to check those topics they would discuss with a male graduate student they did not know.

All interviews were recorded on video-tape and audio-tape. A Sony audio-visual machine was used to record visual aspects of the interviews. The machine could pause at any point in the tape to freeze action upon replay so that behavioral observations could be made accurately. A Wollensak recorder was used within the interview room to record verbal aspects of the interview.

A rating scale (see appendix) was used to score nonverbal behaviors of the Ss during the interviews. The ratings were made from the tapes of

the interviews. The rating scale lists eight elements of nonverbal behavior and included postures or gestures commonly used while speaking. Variations in each behavior carried a weighted score of 0, 1, or 2, listed in increasing intimacy. For example, body posture varies from forward lean (weighted 2), a straight sitting posture (weighted 1), to a backward lean (weighted 0). The weights increase as openness increases. Leg motion varies from legs not crossed (the most open position, weighted 2), crossing of the feet at the ankle (weighted 1), to crossing the legs at the knee (the least open position, weighted 0). Some of the body movements were rated as either present or absent. A person either had eye contact and looked at the other person's face (weighted 1) or he did not have eye contact at a particular moment (weighted 0).

Included with the rating scale was a scoring sheet for each individual interviewed. The scoring sheet listed the eight nonverbal behaviors and adjacent spaces in which to record the ratings at each observation interval. The intervals occurred 20 seconds apart for the ten minutes of the interview that were taped. Twenty-five observations were made and totaled.

Topics for the interviews were selected from Taylor and Altman (1966) in a report on intimacy-scaled stimuli. In this report Navy sailors and college students were asked to sort 671 statements covering 13 areas by intimacy. The method used was the Thurstone Equal-appearing Intervals. What resulted was 671 statements with an intimacy value of one to eleven, eleven being the highest possible intimacy. This report was used in the present study by selecting thirty statements, ten of high, medium, and low intimacy, from each of the thirteen topical areas to make an interview schedule. These thirty statements were listed randomly.

The interviews took place in a room about six feet by six feet



and equipped with a one-way mirror. The Experimenter (E) and S were seated in chairs in a direct-facing position, and so that the S was facing the mirror at a  $45^{\circ}$  angle (see appendix for diagram). The video-tape machine was located behind the mirror almost directly facing the S. It was difficult to get a full view of the S, but only the lower leg portion was not visible. The tape recorder was located next to the E in the room.

### Procedure

Students in introductory psychology and sociology classes were asked to volunteer for the present study. Assistants were used in this part of the procedure. At the end of a class period the class was informed about the study in the following manner:

"A study is being conducted concerning the kinds of things a person would talk about to a stranger. This part of the research requires female subjects. If any females in this class would like to take part, I will ask you to fill out a short inventory. Within a few days from now some of you who complete the inventory will be contacted to participate in a short confidential interview at the Education building. Not all of those who fill out the inventory will be interviewed, but if you decide to participate, please be prepared to be interviewed at some time that is convenient for you. If any volunteers would like to find out the exact purpose and results of the study, you will be given an opportunity later. Are there any volunteers?"

After distributing the inventory to the volunteers, further explanation was given. Assistants were also briefed about what information could be given in response to questions.

"Please read the instructions before proceeding. All you need

to do is to circle the number beside the topics that you would feel free to discuss with someone you do not know. Do not circle the item only if you would be reluctant to discuss the topic, even if it does not pertain to you. The circled topics will only reveal a score. Please give some thought in completing this inventory. You may be called for an interview, which will only take 20 - 30 minutes. Fill in all the information asked for at the top of the first page. Return the inventory to your instructor after class. Thank you."

After the class ended the inventories were collected and scored. Scoring was done by an assistant so that knowledge of the results would not bias the interviewer. The score was the number of statements that the S had circled. When the range of scores was found, the upper and lower 30% of scores was determined. The upper 30% of the scores was considered the high-discloser group, and the lower 30% of the scores was the low-discloser group. The range of scores was 3 - 40, the high-discloser group included scores from 30 - 40, the low-disclosers from 3 - 20. Thirty Ss were interviewed from each group, and there was a surplus of Ss in each group to replace no-shows.

After the groups were selected, the Ss were contacted to arrange the times for interviews. At each interview appointment the S was met by the interviewer at the room where the interview was to take place. At the beginning of the interview not more than five minutes were used to build rapport with the S. During this time the interviewer made informal exchanges with the S on topics innocuous to the study. Before the end of the five-minute period the interviewer informed the S of the recording of the interview and the confidentiality of what would occur:

"Before we start the interview, I want to tell you that the

interview will be video-taped to be viewed later. However, no one except two other graduate students will know what was said during the interview, and the tape will be erased after one viewing. Do you have any question? If everything is OK with you, we'll begin the interview."

If the S had any questions about procedure, the E answered them. Other questions were reserved until after the interview. If there were no questions, the tape recorder next to the interviewer was begun. This was a cue to the assistant behind the mirror to begin the video-tape and leave the room. The assistant would return in ten minutes to stop the visual recording. The interviewer continued with the direction of the interview:

"I have some topics I want you to talk about as each topic pertains to you. You do not have to talk about a particular topic if you do not want. You may talk about each topic to any extent that you like, and in strict confidence. When you have told me as much as you like about one topic, I will give you another to tell me about. All right, tell me about . . . . ."

Each topic was presented by repeating "Tell me about . . ."

After ten minutes the video-tape was stopped, but the verbal recording was continued through the interview. The interview was ended with an explanation that everything about the interview should be kept confidential:

"At this point I will end the interview, and thank you for being so cooperative. Please do not tell your friends or any one else about the things we talked about today, or any thing about the interview. Thank you for participating."

There was also a short explanation of the study and the expectations of



the results

At the beginning of the actual ten minutes of interview time the interviewer assumed and maintained a posture in order not to influence the S's nonverbal behavior. The interviewer and S were seated in straight-back chairs in direct-facing positions. The interviewer was seated in a straight-sitting posture, neither leaning forward nor backward, with legs parallel and feet flat on the floor, and hands crossed in his lap. The interviewer made as few gestures and body shifts as possible while engaged with a S during the interview. Eye contact was constant, and head movements were restricted to accenting nods.

The tapes from the interviews were rated at a later time when all judges could be assembled at once. From the beginning of the tape the recording was stopped every 20 seconds. At that point three judges rated the ~~tape~~ according to the rating sheet described previously. The tapes were rated without sound to maintain the confidentiality of the conversation, and so that what was said might not influence the ratings of the behavior.

The three judges were trained prior to the rating of the experimental interview tapes. Only 15 high disclosers and 15 low disclosers (selected randomly from the two groups of 30) were rated. Two tapes not used for rating were used for training. A third tape was used to determine how well the judges were agreeing. The training was done by pointing out the behaviors to be rated and discussing variations in the behaviors and discrepancies in the ratings. The third tape was then rated without discussion for reliability.

At each 20-second interval in a tape the judges scored each behavior listed on the rating sheet in the order listed. The judges rated the tapes on a "blind" basis so that they did not know to what group the S being rated

belonged or the nature of the topics being discussed. When rating behaviors involving movement, it was necessary to move the film forward two seconds in order to determine the nature of the movement. By the end of a tape each judge had observed and scored each behavior 25 times. The higher the total score (all 25 scores for one behavior totaled and averaged for the three judges), the more open the behavior was considered to be.

After each tape was rated, there were three scores for each behavior, which were averaged. Each behavior then had one score for 15 high disclosers and 15 low disclosers. Statistical analysis was done by t-tests for each behavior.

The verbal tapes for the 15 high disclosers and 15 low disclosers not involved in the visual analysis were then analyzed. This procedure involved selecting ten topics from the 30 used during the interview (five high in intimacy and five low in intimacy). These topics were then located on the tape and three types of data accumulated: a word count for each topic, a total speaking time for each topic, and the reaction time of each S for each topic. An analysis of variance was performed for this data to determine interactions for each of these dependent variables.

## Results

Statistical analyses were different for each hypothesis. Hypothesis I, concerning the relationship between disclosure and nonverbal behavior, was tested by applying t-tests, comparing both groups on each of the eight nonverbal behaviors, and two additional t-tests for Total Hand Motion (combining raw scores of Nervous Hand Motion and Expressive Hand Motion) and a total score for all eight nonverbal behaviors. Each part (a, b, and c) of Hypothesis II (the validity study) was analyzed by an analysis of variance, utilizing a BIO-MED program and the computer services at Eastern Illinois University.

### Hypothesis I

The t-test scores are summarized in Table I. For each S the 25 ratings for each behavior observed from the video-tapes were summed, and an average was derived from the scores of the three judges. What resulted was one score for each behavior for each S in both groups. Ten t-tests were then calculated comparing the two groups on each of the eight behaviors, a total score, and a combined score for expressive and nervous hand motion. Reliability for the three judges was .9878.

Table 1 shows that three significant t-tests were found: Arm Openness was significant ( $t=2.43$ ,  $p<.025$ ), as was Eye Gaze ( $t=2.09$ ,  $p<.05$ ), and the combined hand movements ( $t=2.48$ ,  $p<.01$ ). Interpreted, these results indicate that high disclosers used more open arm positions (as defined in the introduction section), tended to make eye contact more frequently,

TABLE 1

T-tests for nonverbal behavior during interviews  
Interactions between high- and low-disclosers  
in nonverbal behavior

	$\bar{X}_1$	$\bar{X}_2$	$SD_1$	$SD_2$	df	t	
BP	25.3	22.8	12.2	8.2	28	.66	NS
AO	21.1	31.5	11.2	12.1	28	2.43	** $p < .025$
LO	16.6	16.6	24.4	24.4	28	0.0	NS
S	4.9	5.0	3.5	4.6	28	0.04	NS
EG	12.0	14.9	4.7	3.9	28	2.09	* $p < .05$
LF	.20	.13	.47	.35	28	.47	NS
WBM	1.6	3.4	2.3	3.1	28	1.73	NS
NHM	6.2	9.7	4.6	6.6	28	1.67	NS
THM	7.9	13.1	5.4	6.1	28	2.43	*** $p < .01$
TTL	36.1	104.1	31.1	30.8	28	1.41	NS

and used more hand movement, whether defined as expressive or nervous hand movement. The significant statistical relationships for Arm Openness and Total Hand Motion reflect the physical relationship between the two behaviors. Body Posture, Leg Openness, Smiling, and Leg Motion were all insignificant, showing no difference between groups.

### Hypothesis II

An analysis of variance for the verbal data showed little support for the predictive validity of the JSDI in accurately discriminating between high and low disclosers. Tables 2 - 4 show the results for speaking time, reaction time, and word count. In each table the F ratios that are preceded by an asterisk represent values derived by the method of Quasi-F ratios (Myers, 1972). The following is the method of deriving the F values, using A (disclosure) as example:

$$F_A = \frac{\text{Mean square A}}{MS_{S/A} + MS_{AC/B} - MS_{SC/AB}}$$

Degrees of freedom were also obtained from Myers (1972). The following is an example of the derivation of degrees of freedom for A (disclosure):

$$df_A = \frac{(MS_{S/A} + MS_{AC/B} - MS_{SC/AB})^2}{\frac{(MS_{S/A})^2}{28} + \frac{(MS_{AC/B})^2}{8} - \frac{(MS_{SC/AB})^2}{224}}$$

TABLE 2

Summary of analysis of variance for word count

SOURCE	F	SUM OF SQUARES	df	MS
Mean		1933733.	1	1933783.
A (disclosure)	*.23	3563.353	1	3563.853
B (intimacy)	*2.3	27956.05	1	27956.05
AB (interaction)	*.34	5026.598	1	5026.598
C/B (topics by intimacy)	2.002+	75974.75	8	9496.844
S/A	1.4536	175682.3	28	6274.367
BS/A	1.5525	187631.7	28	6701.129
AC/B	2.9682++	102494.6	8	12811.82
SC/AB		966848.4	224	4316.285

\* Denotes F value by Quasi-F ratios (Myers 1972)

+  $p < .05$ ++  $p < .01$

TABLE 3

Summary of analysis of variance for reaction time

SOURCE	F	SUM OF SQUARES	df	MS
Mean		5452.801	1	5452.801
A (disclosure)	*6.60+	42.56332	1	42.56332
B (intimacy)	*10.01++	282.2698	1	282.2698
AB (interaction)	*1.76	22.96338	1	22.96338
C/B (topics by intimacy)	1.9329	185.3594	8	23.16992
S/A	0.8718	292.6328	28	10.45117
BS/A	1.4022	470.6587	28	16.30923
AC/B	0.6834	65.53931	8	8.192413
SC/AB		2685.178	224	11.98740

\* Denotes F value by Quasi-F ratios (Myers, 1972)

+  $p < .05$ ++  $p < .01$



TABLE 4

Summary of analysis of variance for speaking time

SOURCE	F	SUM OF SQUARES	df	MS
Mean		380564.0	1	380564.0
A (disclosure)	*.23	752.0933	1	752.0933
B (intimacy)	*.84	2043.630	1	2043.630
AB (interaction)	*.26	1438.930	1	1438.930
C/B (topics by intimacy)	2.0650+	15657.24	8	1957.155
S/A	1.6186	42953.86	28	1534.066
BS/A	1.5007	39826.83	28	1422.388
AC/B	2.7946++	21189.89	8	2648.736
SC/AB		212304.8	224	947.7893

\* Denotes F value by Quasi-F ratios (Myers, 1972)

+  $p < .05$ ++  $p < .01$



### Part a

Table 2 summarizes the analysis of the data for word count. Two tests were significant - C/B ( $F=2.002$ ,  $p<.05$ ) and AC/B ( $F=2.9682$ ,  $p<.01$ ). C/B refers to the 10 sample topics as nested in intimacy, that is, the five high-intimacy topics and the five low-intimacy topics. A significant effect in C/B indicates that the Ss in both groups, high and low disclosers, discriminated between the high and low intimacy topics in number of words spoken. A low-discloser was as likely to talk more on a low-intimacy topic than a high-intimacy topic, as was a high discloser. In general this suggests that there was a difference in the way all Ss perceived the two types of topics.

AC/B was a relationship unimportant to the study, but referred to the selectivity of the groups toward the topics. This significance indicates that some topics were more intimate than others as measured by word count.

### Part b

Table 3 summarizes the analysis of the data for reaction time of Ss after presentation of topics. Significance was found in disclosure ( $F=6.38$ ,  $p<.05$ ) and intimacy ( $F=10.01$ ,  $p<.01$ ). A (disclosure) represents differences between groups in reaction time. Subjects in the high-disclosure group had a latency as a group of 3.36 seconds per item before speaking, whereas, low-disclosers had a latency of 4.64 seconds per item before speaking.

Significant findings with regard to B (intimacy) represents differences in which intimacy was expressed by Ss. A S from

either group tended to show different latency for high- and low-intimacy topics. Subjects from both groups waited an average of 5.23 seconds per high-intimacy topic before speaking, and 3.29 seconds per low-intimacy topic before speaking.

#### Part c

As expected the data for speaking time is much like that for word count. There were two significant tests as in word count - C/B ( $F=2.065$ ,  $p<.05$ ) and AC/B ( $F=2.7946$ ,  $p<.01$ ). The same interpretations can be made for these results, but with respect to number of seconds in responding instead of number of words in responding.

## Discussion

The present study was designed to investigate disclosure from two different aspects: comparing nonverbal behavior of high and low disclosers, selected by the Jourard Self-disclosure Inventory, as each S discussed varying intimacy topics in an interview; and, subsequently, comparing the speaking time and the word count of the two groups. The former segment of the study involved determining two groups of disclosers using the JSDI, and treating these groups; the latter used the verbal behavior from the interviews to determine the validity of the JSDI as a measure of disclosure.

As indicated in Table 1 three t-tests were found to be significant: Arm Openness (AO), Eye Gaze (EG), and Total Hand Motion (THM). Ten t-tests were calculated in all, and no relationships or tendencies were found for the other nonverbal behaviors. It should be mentioned here that in finding ten t-tests in the nonverbal analysis that the chance of getting significant values increases. Lower significance levels are then considered more probably reliable. A significance at .05 becomes less reliable at indicating a difference between groups than data accepted at lower lower significance levels.

AO is obviously physically related to both NEM and EEM. During an indefinite period of time motion with the hands, rated higher in intimacy than no hand motion, would be accompanied by an "open" arm position that is correspondingly higher in intimacy than a more "closed" arm position. The relationship between

these two nonverbal behaviors diminishes somewhat the impact of the results. However, THM remains statistically significant at the .01 level, and EG significant at the .025 level. These are probably the two behaviors that common sense might dictate to be most significant. Popular literature (Fast, 1970; Schutz, 1967) claims that EG is indicative of intimacy. Prolonged EG is an invitation for intimacy. Also, through observation in social situations, many individuals who overtly appear very comfortable and verbally open in crowds are very gesticulative. Thusly, AC, EG, and THM seem to be the indicators of disclosure and openness, whereas, BP, S, LO, and LM appear more constant and invariable across the intimacy continuum.

The analysis of the verbal data of the study is considered a validity study. The most important differences in this respect are disclosure (A), intimacy (B), and the interaction of these two (AB). These factors are what were expected to best examine predictive validity in the JSDI. Significance would suggest that the JSDI could predict the verbal behavior used as criterion for disclosure. The high disclosers and low disclosers would have been accurately selected into the experimental groups. As Tables 2 - 4 depict only reaction time data revealed significance in any of the criterion measures - disclosure (A) ( $F=6.38, p<.05$ ) and intimacy (B) ( $F=10.01, p<.01$ ). There was no tendency for AB interaction, which would have shown a difference between groups for all topics, and a relationship between the two types of topics to the groups. The results indicate differences among the criteria of SD used in this study.

The failure of the verbal data to support the JSDI brings up questions about the results of the nonverbal data. If the JSDI is invalid, then there is no confidence that the groups selected as high and low disclosers were actually that, since selection of the groups were dependent upon the JSDI. This may indicate that the JSDI predicts something other than intended. Disclosure and intimacy are nearly impossible to relate to specific operational definitions. Such constructs are introduced into a hypothesis in an attempt to explain what is being investigated. Deese and Hulse (1967) comment:

"When we introduce hypothetical constructs, our science may not be sufficiently developed to permit us to perform the actual experimental operations we would need to check the validity of our theoretical assertions . . . we . . . find ourselves in the awkward position of being uncertain if we can ever find a set of operations which will unequivocally assure us about the validity of a particular hypothetical construct."

If the verbal data had supported the JSDI and indicated that it did predict disclosure, could it be concluded that the JSDI predicted disclosure? Disclosure was defined in the present study by the number of words spoken and the length of speaking time. These are the most frequently used criteria. According to the data the JSDI is to be considered an invalid measure of disclosure. The problem may lie with the criteria for measuring disclosure rather than the Jourard. Perhaps there is a more effective method of measuring disclosure. Taylor and Altman (1966) refer to the need for verbal analysis devices:

"A critical problem in experimental social psychology is the lack of well-structured stimulus material, which, in turn, would be conducive to more precise



analysis. Since the main data for social psychologists have been verbal behavior, techniques for its coding and analysis are mandatory."

### Implications

Many studies have cited (see introduction) a form of the JSDI as a measure used to determine a disclosure rating for individuals, and many claimed invalidity for the Jourard method. The results of the present study also suggest that the Jourard is invalid. Studies which have used the JSDI to investigate disclosure should be cautiously accepted.

Although inventory measures like the JSDI are not good devices with which to study disclosure, methods used as indicators of disclosure should be researched. Investigations must be directed toward improvement of measures of predicting disclosure as well as effective criteria.

One of the shortcomings of the JSDI is in its dependence upon an individual's insight into himself and knowlegeability of his verbal behavior in a particular situation. When confronted with the actual situation, the individual finds himself much more uncertain and defensive. The nonverbal aspects of the present study found some relationship with the JSDI in regard to openness and closeness, which may involve defensiveness. Nonverbal behavior is generally considered to be an indicator of defensiveness of an individual. The JSDI was intended to predict verbal behavior, but the results showed a relationship with certain nonverbal behaviors. This may be a channel for future research to follow.

## APPENDICES

## APPENDIX 1

### Self-disclosure Questionnaire



SELF-DISCLOSURE QUESTIONNAIRE USED TO  
SELECT HIGH- AND LOW-DISCLOSING  
SUBJECTS

Your name

Student ID No.

Age. Marital status

Address

Telephone No.

Time you would be available for an interview (Between 8:00 A.M. and 10:00 P.M.  
on Tuesdays and Thursdays)

Tuesday

Thursday

Instructions

People differ in the extent to which they let other people know them.  
We are seeking to investigate what people tell others about themselves.

Below there is a list of 40 topics that pertain to you. Read the topics  
carefully and check those topics about which you would disclose fully to  
someone whom you do not know. If you would not reveal fully that aspect  
of your life to a stranger, leave that space blank.

Topics

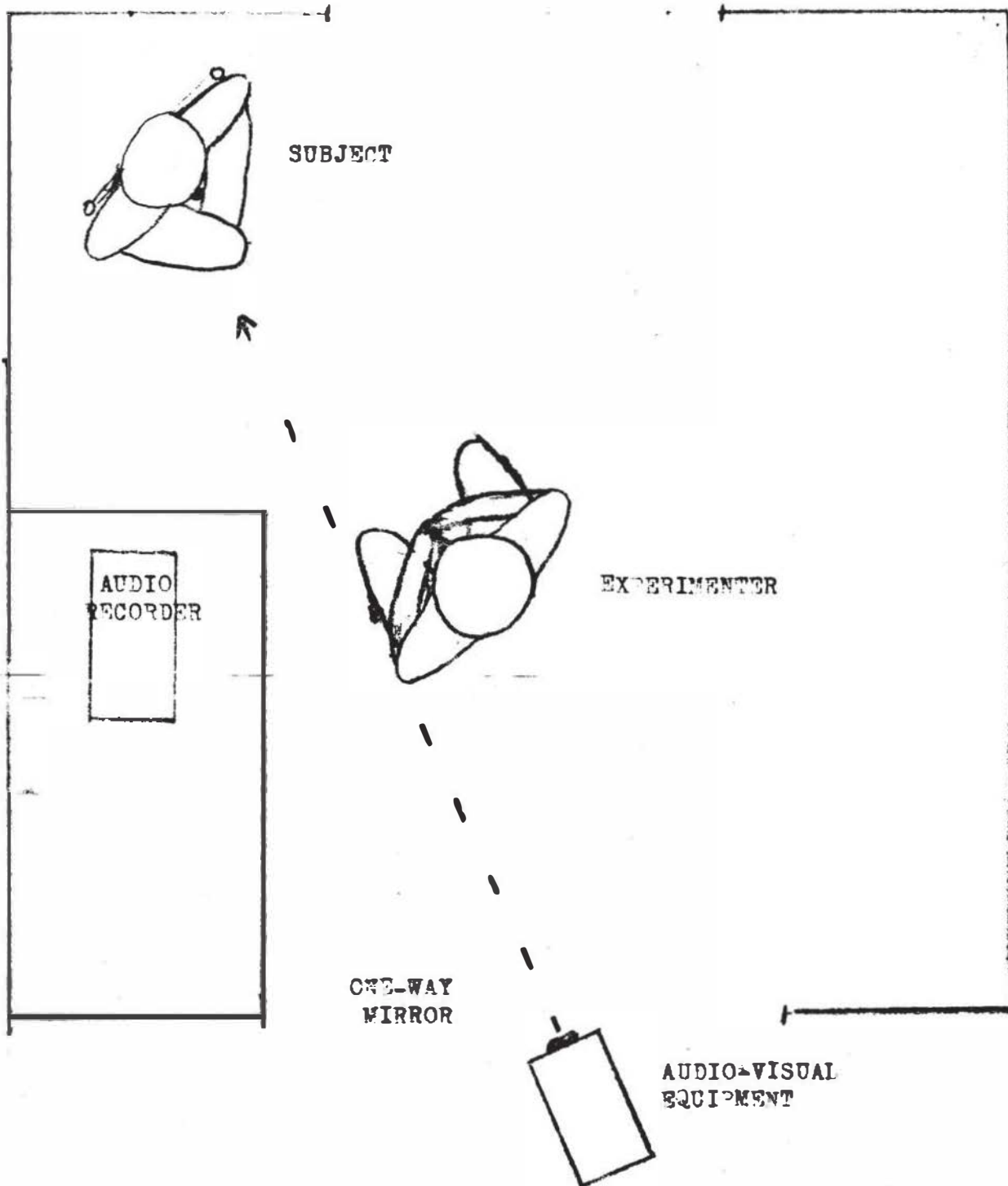
In the space provided at the left, circle those topics on which you would  
disclose yourself fully to a strange partner.

1. The different kinds of play and recreation I enjoy.
2. My smoking habits.
3. The best friendship I ever had.
4. The religious denomination to which I belong.
5. The number of children I want to have after I am married.
6. Bad habits my mother or father have.
7. Times I have felt lonely.
8. The things in my past or present life about which I am most ashamed.
9. What I am most afraid of.
10. What annoys me most in people.
11. Times I have been in the hospital.
12. How satisfied I am with different parts of my body - legs, weight,  
chest, etc.
13. How often I usually go on dates.
14. The description of a person with whom I have been or am in love.
15. How I would feel about marrying a person of a different religion.
16. Whether or not I want to travel and see the country.
17. Radio and television programs that interest me.
18. What I dislike about making new friends.
19. My feelings about people who try to impress me with their knowledge.

20. What I daydream about.
21. Good times I had in school.
22. My school grades.
23. How much I care about what others think of me.
24. How often I have had sexual relations in my life.
25. The kind of person with whom I would like to have sexual experiences.
26. Why some people dislike me.
27. Whether I like doing things alone or in a group.
28. My opinions about how capable and smart I am compared to others around me.
29. Places where I have worked.
30. How I budget my money - the proportion that goes for necessities, luxuries, etc.
31. What would bother me, if anything, about making a speech or giving a talk.
32. How important I think sex will be in making my marriage a good one.
33. Things I liked about my home life.
34. Where my parents and grandparents came from.
35. Feelings about my adequacy in sexual behavior - my ability to perform adequately in sexual relationships.
36. My opinion on marrying for money.
37. Whether or not I think the federal government should support persons who cannot find work.
38. How I feel about girls' new fashions styles.
39. Whom I most admire.
40. The aspects of my personality that I dislike, worry about, or regard as a handicap to me.

## **APPENDIX 2**

### **Subject-experimenter orientation**



Subject-experimenter orientation in relation to Audio- visual  
Location

### APPENDIX 3

#### Interview topics

## INTERVIEW TOPICS

1. What I believe about God. 8.30
2. Whether or not I want to have any children when I get married. 6.4
3. The amount of sexual freedom I feel a woman should have. 7.2
- \*4. Disappointments or bad experiences I have had in love affairs. 2.7
5. How I might (or did) feel if my mother and father were separate or divorced. 9.21
- \*6. The kinds of cloths that I feel look best on me. 5.0
- \*7. My feelings about gambling. 2.94
- \*8. Things in the past or present that I feel ashamed or guilty about. 10.2
9. What animals make me nervous. 3.4
10. Traveling I have done. 1.63
11. Under what circumstances, if any, would I kill another person. 3.63
12. How I would feel about marrying a person of a different religion. 5.57
13. How important I think sex will be in making my marriage a good one. 8.61
14. My personal standards of beauty and attractiveness in men - what I consider to be an attractive man. 4.5
15. My feelings about birth control. 4.71
16. What I quarrel about with members of my family. 3.0
- \*17. How satisfied I am with different parts of my body - legs, waist, weight, chest, etc. - 8.5
18. Whether or not I would steal money if I had to have it. 3.15
- \*19. Whether or not I think the Federal Government should support persons who cannot find work. 2.35
- \*20. The aspects of my personality that I dislike, worry about, or regard as a handicap to me. 3.27
- \*21. My favorite ways of spending spare time, e.g. reading, cards, parties, etc. 2.1
22. The kinds of things I don't like people watching me do. 3.3
23. Whether I am a listener or a talker in social situations. 5.2
24. My feelings about the place of religion in everyday life. 3.31
25. My dating habits. 7.1
- \*26. Feelings about my adequacy in sexual behavior - my ability to perform adequately in sexual relationships. 10.11
- \*27. Things I liked about my home life. 5.7
28. My opinion on marrying for money. 5.3
29. My feelings about people who are not of the same race that I am. 5.17
30. Things or situations that embarrass me. 7.39

\* Indicate ten sample topics used in verbal analysis



## APPENDIX 4

Rating scale

Rating scale used for analysis of nonverbal behavior from tapes  
(Derlega, 1971)

I. Body Posture

- 2: leans forward in chair
- 1: sits straight up in chair
- 0: leans back in chair

II. Arm Openness

- 2: doesn't cross arms and hands do not touch
- 1: doesn't cross arms but hands are either touching or clasped
- 0: crosses arms either above or at wrists

III. Leg Openness

- 2: does not cross legs
- 1: crosses feet at ankles
- 0: crosses legs either at or above knees

IV. Expressive Hand Motion

- 1: uses motion of fingers or hands to communicate some feeling or meaning to the other person
- 0: absence of motion in hands or fingers

V. Nervous Hand Motion

- 1: uses motions of fingers or hands to bring them in contact with other parts of the body or with some object such as the chair
- 0: absence of motion in hands or fingers

VI. Smiling

- 1: upward curving of corners of the mouth, as if to indicate pleasure
- 0: neutral or displeased facial expression

VII. Eye Gaze

- 1: looks directly at the face of the other person
- 0: looks away from the face of the other person

VIII. Leg Motion

- 1: voluntary motion of the feet or legs
- 0: absence of motion of the feet or legs or an involuntary leg motion

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Note: Larger weights represent higher openness scores.

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