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Effects of level of acquaintance and expectations for social approval upon a person's visual behaviour in a triad.

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EFFECTS OF LEVEL OF ACQUAINTANCE AND EXPECTATIONS FOR SOCIAL APPROVAL UPON A PERSON'S VISUAL BEHAVIOUR IN A TRIAD

BY

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To Terri

ABSTRACT

Argyle and Dean's (1965) affiliative-conflict theory is conceived as consisting of two separate, yet related, parts, both of which focus on their concept of an intimacy equilibrum point. The intimacy equilibrum point is a comfortable level of nonverbal intimacy which interactants seek to establish. The first part of Argyle and Dean's theory involves the establishment of an intimacy equilibrum point, and the second part deals with changes in behaviour once an intimacy equilibrum point has been established and then disrupted. This study represented an attempt to investigate how two factors, level of acquaintance and expectations for social approval, affect the establishment of the intimacy equilibrium point between members of a triad.

Undergraduate males were recruited for an experiment on the "acquaintance process". Their task was to speak in turn with one another in a monologue fashion. Two separate experiments were conducted. Forty-two subjects participated in Experiment A. Experiment A involved the interaction of three naive subjects and the manipulation of their level of acquaintance. Level of acquaintance was manipulated by varying the order in which the subjects spoke. One subject (target A) always spoke first, followed by another subject (subject B); the third person (target C) was not given a chance to speak. Thus, when it was subject B's turn to speak, he was better acquainted with target A than target C, because of the greater amount of information he had about target A relative to target C.

Thirty-six subjects participated in Experiment B. Experiment B involved the interaction of one subject and two confederates and the manipulation of both level of acquaintance and expectations for social approval. The two confederates played the roles of target A and target C. As in Experiment A, the level of acquaintance was manipulated by the order in which the participants spoke. Expectations for social approval were manipulated by having target A direct either a high, medium, or low level of gaze toward subject B while target A was speaking. In both experiments, an observer recorded the frequency, total duration, and mean duration of subject B's gaze.

The major hypothesis that increased level of acquaintance would result in more gazing was confirmed by the results of both experiments. While subject B was speaking he directed significantly more gaze towards the person who had previously spoken (target A) than toward the person who had not spoken (target C). However, the hypothesis (for Experiment B only) that while subject B was speaking he would reciprocate the gaze level previously directed towards him by target A was not confirmed. Likewise, the results of Experiment B failed to support the prediction that while listening subject B would reciprocate the gaze level directed at him by target A. In addition, both experiments revealed that total duration and mean duration of gaze was greater while listening than speaking, although the frequency of gaze remained the same. Also, it was found that

gaze decreased as a function of time, with frequency of gaze decreasing while the person was speaking and duration of gaze decreasing while the person was listening. Subject B's ratings of his coactors generally indicated that target A was perceived more favorably than target C. The subjects in Experiment B also viewed the high gaze of target A as being a sign of approval.

The results were discussed in terms of approach-avoidance forces affecting the establishment of an intimacy equilibrium point. Although the results of the level of acquaintance manipulation were in accord with predictions derived from the affiliative-conflict theory, the gaze level manipulation results were not. In light of this finding and the contradictory results obtained by other researchers, the author suggested the need to critically re-examine and possibly expand the affiliative-conflict theory.

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CHAPTER I

INTRODUCTION

"The eye is the pulse of the soul. As physicians judge of the heart by the pulse, so we by the eye." (Adams, 1629, as cited in Bartlett, 1882)

Over the centuries, the one aspect of nonverbal behaviour that has received the greatest amount of attention has been visual behaviour. Various sources refer to the power of the "evil eye," while writers often refer to the "look of love." In current vogue is the idea that lying is accompanied by an inability to look the person to whom one is lying in the eyes.

In spite of the awareness of the importance of visual behaviour, it only has been recently that this particular aspect of behaviour has been subjected to scientific investigation. Visual behaviour usually refers to the gaze of a person's eyes toward the person with whom he is interacting. Two common measures of visual behaviour are mutual gaze and individual gaze. Mutual gaze (also referred to as eye contact) is the simultaneous looking at one another's eyes by two people, whereas individual gaze is the gaze that a person directs at his coactor regardless of whether or not his coactor returns the look. Numerous experiments have sought to relate various factors to subjects' visual behaviours. Among the factors that have been investigated are sex (Exline, 1963; Exline, Gray, & Schuette, 1965), distance (Argyle & Dean, 1965; Goldberg, Kiesler,

& Collins, 1969), topic of conversation (Exline, Gray, & Schutte, 1965; Exline & Winters, 1965), and personality factors (Exline, 1963; Libby & Yaklevich, 1973). Reviews of the literature on visual behaviour have been made by Duncan (1969) and Mehrabian (1972), among others.

In spite of the great number of studies on nonverbal behaviour, only one relatively comprehensive theory has been forwarded to account for the various findings. Argyle and Dean (1965) have proposed what they call the affiliative-conflict theory. The theory begins with the assumption that there are both approach and avoidance forces affecting nonverbal behaviour in social interactions. Furthermore, interacting parties seek to establish a comfortable level of interaction, an equilibrium point, which is a balance between the approach and avoidance tendencies. This level of mutual comfort is referred to as an "intimacy equilibrium" and is considered to be a joint function of such factors as mutual gaze, interpersonal distance, body orientation, smiling, intimacy of topic, and the nature of the relationship between the people. Once an intimacy equilibrium has been reached, a change in one or more of the above factors results in a state of disequilibrium. In order to regain the intimacy equilibrium, a compensatory change in one or more of the factors will occur. This predicted compensatory change as a result of imbalance is referred to as the compensation hypothesis. A recent review of the research by Patterson (1973) has shown that most studies, both correlational and experimental, lend support to the compensation

hypothesis. However, as Schneider and Hansvick (1974) point out, it can be argued that most of the studies purporting to test the hypothesis actually do not test it. Schneider and Hansvick argue that the studies do not deal with changes in the intimacy level of the interactants once an equilibrium point has been established, but rather with the nonverbal behaviours that occur in a static, nonchanging interaction.

The affiliative conflict theory can be conceived as consisting of two separate yet related parts. The first involves the establishment of an equilibrium point, and the second deals with changes in behaviour once an equilibrium point has been established and then disrupted. The establishment of an equilibrium point can be seen as a function of the approach and avoidance forces present in any given situation. According to Mehrabian (1969), people approach things that they like and avoid things that they dislike. The person's feeling of like versus dislike is expressed through what Mehrabian refers to as "immediacy cues," which include various nonverbal intimacy behaviours such as mutual gaze, distance maintenance, and body lean. Thus, if the approach forces are stronger and the avoidance forces weaker in one situation as opposed to another, then the intimacy equilibria, as expressed by the level of immediacy cues, should be different. In other words, there should be more intense immediacy cues (e.g. more mutual gaze, closer distances, and more forward body leans) in the former condition relative to the latter one. Argyle and Dean, however, do not devote much attention to the conditions influencing the

establishment of an intimacy equilibrium point. Instead, they concentrate on the second part of their theory, which deals with the changes in the immediacy behaviours between two interactants once they have established an intimacy equilibrium point. Contrary to Argyle and Dean's emphasis, the present study was primarily concerned with the first part of their theory, namely, the factors influencing the establishment of an intimacy equilibrium point. The author sought to investigate how one type of immediacy behaviour, individual gaze, was affected by two variables: (a) the level of acquaintance of the interactants and (b) the expectations for social approval of the interactants.

Level Of Acquaintance

Most studies of visual behaviour involve having a subject interact with a stranger who is either another subject or a confederate posing as a subject. However, one would expect that a person nonverbally interacts differently with a friend or acquaintance as opposed to a stranger. This differential level of responding could be due to the different levels of approach and avoidance forces present in each situation. Thus, relative to two strangers, two friends should have stronger approach and weaker avoidance forces with respect to each other. As a result, friends should engage in more intense immediacy behaviours than should strangers, resulting in a higher intimacy equilibrium point for the former relative to the latter.

Two recent studies have shown that friends engage in more intense immediacy behaviours than do non-friends. Russo (1975),

using young children as her subjects, found that the percentage of time that two same-sexed friends engaged in mutual gaze was not significantly greater than that of strangers; however, the mean length of mutual gaze was significantly greater for friends. Russo concluded that mean length of mutual gaze is an index of affiliative desires, while total amount of mutual gaze is used solely for feedback. Rubin (1970), who investigated the concept of "romantic love," found that couples who were highly in love (as defined by their responses to a questionnaire) spent more time gazing into each other's eyes than did couples who were less in love, who in turn gazed into each other's eyes more than did strangers; however, high versus low love couples did not differ in the amount of time they spent in individual gaze. Thus, the above two studies indicate that the amount of visual behaviour in which two people engage varies directly with their level of acquaintance.

Based upon the research on mutual gaze, it would appear that the level of acquaintance between two people affects their intimacy equilibrium point, with higher levels of immediacy behaviours being associated with higher levels of acquaintance. However, what remains to be answered concerns the amount of acquaintance that is necessary to yield the differential levels of immediacy behaviours. Another question pertains to what factors contribute to the establishment of a feeling of acquaintance between two people. One possibility is the degree of knowledge that a person has about another person. In other words, if one has some knowledge about one person but no knowledge about another person, then it would be expected that he

would have a higher intimacy equilibrium point with respect to the first person than the second person. In a situation wherein a person (P) is to meet two strangers (X and Y) for the first time, the order in which P becomes acquainted with X and Y may influence toward whom he may feel stronger approach forces. Thus, if P first becomes familiar with X, while knowing relatively little about Y, then P should have stronger approach tendencies toward X relative to Y. The increased approach forces towards X should be manifested by greater amounts of immediacy behaviours being directed by P toward X. Thus, based upon the above interpretation of the affiliative-conflict theory and the evidence that level of acquaintance is related to the amount of visual interaction (Rubin, 1970; Russo, 1975), we would expect that a person would direct more visual behaviour toward the person with whom he is better acquainted.

Social Approval

However, the establishment of an intimacy equilibrium point may be influenced by certain other factors in addition to the level of acquaintance. One such factor is the amount of intimacy that one person directs to the other by means of his nonverbal behaviour. Argyle and Dean (1965) and Mehrabian (1966, as cited in Argyle, Ingham, Alkema, & McCallin, 1972) have shown that increasing attempts at establishing eye contact by a person are viewed by the recipient as being more intimate. Thus, the amount of gaze that X directs toward P relative to Y can also influence the extent to which P feels liked by X, and hence the intimacy equilibrium point between them. In a recent study, Breed (1972) sought to vary the amount

of intimacy that a confederate showed to a subject by having the confederate manipulate his body posture and amount of individual gaze, with forward leans and high levels of gaze being viewed by Breed as more intimate than backward leans and low levels of gaze. Breed found that his subjects' visual behaviour and forward body leans increased as the confederate's expression of these immediacy behaviours increased.

While Breed interpreted the high individual gaze and forward body leans of the confederate as nonverbal expressions of intimacy, he also suggested the possibility that the subject viewed the behaviour of the confederate in terms of approval. In other words, increasing eye contact and forward body leans may be signs not only of intimacy but also of approval. If this is the case, Breed suggests that Rosenfeld's (1967) concept of nonverbal reciprocity can be used to account for his findings. According to Rosenfeld, approving responses are normatively reciprocated in our society. Thus, if the subject viewed the confederate's nonverbal behaviour as a sign of approval, then he would feel obligated to reciprocate the approval.

Several investigators have considered the effects on nonverbal approval upon a subject's visual behaviour. Efran and Broughton (1966) sought to manipulate expectations for social approval by having a subject talk to two confederates (posing as fellow subjects). The subject had a brief, friendly encounter with one of the confederates prior to the experiment, whereas he had no prior acquaintance with the other confederate. During the subject's

speech (the subject always spoke first), the friendly confederate (whom the subject had met prior to the experiment) nodded and smiled in response to statements made by the subject, while the other confederate merely remained neutral. Efran and Broughton's major hypothesis, derived from Rotter's (1954) social learning theory, was that subjects would look more at an individual toward whom they had developed higher expectancies for social approval (i.e. the confederate who nodded and smiled) as opposed to the individual regarding whom they had no expectations for social approval. This hypothesis was confirmed in their research. In a later study, Efran (1968) manipulated the status of the confederate along with expectations for social approval. He found that college freshmen maintained more eye contact with an individual toward whom they had developed higher expectancies for social approval when the individual was portrayed as a senior, but not when he was portrayed as a freshman. Finally, Fugita (1974) used a method similar to the one used by Efran (1968), differing primarily in that Fugita's nonapproving confederates actually disapproved, whereas Efran's nonapproving confederates merely remained neutral. Fugita's results were similar to those found by Efran.

Although Fugita maintained that his study was concerned with the effects of social approval on a subject's visual behaviour, Efran and Broughton (1966) and Efran (1968) argued that they had investigated the effect of <u>expectations</u> for social approval on the subject's visual behaviour. However, if one carefully notes

their procedure, it seems that, similar to Fugita, they were actually dealing with the effects of approval itself, rather than with expectations for social approval. In both of Efran's studies and in the study by Fugita, while the subject was speaking, the approving confederate nodded and smiled whenever such behaviour seemed appropriate. In other words, the confederate directly reinforced the speech and visual behaviour of the subject, thus providing a measure of the effects of approval on the subject's visual behaviour rather than the effects of expectations for social approval. Although Efran and Broughton (1966) used a friendly meeting between the subject and the approving confederate to induce an expectation for approval, the confederate's reinforcement of the subject while the subject was speaking made it impossible to separate the effects of expectation for social approval from the effects of approval itself.

As stated earlier, the development of an intimacy equilibrium point between recently introduced people might be affected not only by whom P meets first (X or Y) but also by the amount of visual attention that one person (the speaker X) directs toward P relative to the third person, Y. As indicated by the above studies (Breed, 1972; Efran & Broughton, 1966), while X is speaking to P and Y, the direction of a high degree of nonverbal intimacy (or approval) by X toward P should be reciprocated by P. Moreover, when it is P's turn to speak, the amount of intimacy that he directs toward X should be a function of the expectations for social approval from X that he had developed while listening to X speak.

Thus, a second purpose of this study was to investigate the effects of expectations for social approval upon a subject's subsequent visual behaviour, and to see how it interacted with the level of acquaintance between the subject and his two partners in establishing an intimacy equilibrium point between them.

Summary and Statement of Hypotheses

Research by Rubin (1970) and Russo (1975) has indicated that friends engage in more intense immediacy behaviours with each other than do strangers, a finding that is in line with the predictions derived from Argyle and Dean's (1965) affiliative-conflict theory. A primary objective of the present study was to determine whether the amount of knowledge an individual has about another influences the amount of individual gaze he will direct towards that person. Moreover, research (Breed, 1972; Efran & Broughton, 1966; Efran, 1968; Fugita, 1974) has indicated that the amount of gaze that one person directs toward another can also influence the amount of gaze that the recipient of the gaze subsequently directs at its sender. A second purpose of this study was to investigate the effects of expectations for social approval upon a subject's visual behaviour.

The basic method of the study was to have three strangers (A, B, and C) come together in an experiment ostensibly dealing with the "acquaintance process." Because the person in position B was the only subject whose visual behaviour was recorded, he will henceforth be referred to as subject B. Persons A and C were basically the "targets" of subject B's gaze, and thus will be

referred to as target A and target C, respectively. The people interacted with one another in a monologue fashion. In other words, one person at a time spoke to the others about himself, while the other two merely listened. The order of speaking was target A, then subject B, and finally target C. This particular design was chosen because it allowed for the study of the development of a feeling of acquaintance between the subjects in that once target A had spoken, subject B and target C were better acquainted with him (in that they knew something about the kind of person that he was) than they were with each other (in that they still knew very little about each other). Thus, when it was subject B's turn to speak, it was expected that he would direct more visual behaviour toward A relative to C because he would feel more intimate with A due to his knowledge of him, and hence strive to establish a higher intimacy equilibrium point with A relative to C. However, as noted earlier, the amount of approval that A directs toward B relative to C can also have an effect upon B's subsequent visual behaviour. Thus, it was decided to conduct two separate experiments, the first using three naive subjects and the manipulation of level of acquaintance, and the second using confederates in the roles of targets A and C and the manipulation of both level of acquaintance and gaze level.

Experiment A. Based upon the research findings of Rubin (1970) and Russo (1975) and an understanding of the affiliative-conflict theory, the following major hypothesis was stated:

Hypothesis A-1. While subject B is speaking to two strangers,

he will direct more gaze towards the person who had spoken previously (target A) than toward the person who had not as yet spoken (target C).

As it is customary to look at a person who is speaking, the following related hypothesis was made:

Hypothesis A-2. While listening to a person (target A) speak, subject B will direct more gaze towards that person than towards a third person who also is listening (target C).

Previous research (Exline, Gray, & Schutte, 1965; Kendon, 1967) has indicated that people look more while listening as opposed to speaking. However, the measures of gaze in those studies were taken while the subject was engaged in a conversation. No distinction was made between the gaze occurring during a conversation and the gaze occurring while passively listening to a conversation. In order to more fully investigate the differences in gaze while speaking and listening, the following hypothesis was proposed:

Hypothesis A-3. Subject B will spend more time looking at his two coactors (the gaze directed at target A plus the gaze directed at target C) while listening to target A than while he himself is speaking.

Finally, it might be expected that if indeed subject B feels better acquainted with target A relative to target C after listening to A speak, then subject B would likely differentially rate his two coactors on an evaluative questionnaire, assigning more favorable ratings to the person with whom he is better acquainted

(target A).

Hypothesis A-4. Subject B will rate the person who had previously spoken (target A) more favorably than the person who had not spoken (target C).

Experiment B. The procedure employed in this experiment differed from that employed in Experiment A in that two confederates played the roles of targets A and C. Furthermore, in order to determine the effects of varying degrees of expectations for approval upon subject B's subsequent visual behaviour, the degree of approval that confederate A directed toward subject B while confederate A was speaking was varied. With greater amounts of gaze by confederate A directed at subject B (relative to confederate C) being an index of greater approval towards B, the amount of individual gaze which B directs at A relative to C while B is speaking will vary as a function of (a) who spoke first and (b) the amount of individual gaze that the first speaker, A, had directed at B. Because of the similarity of the two experiments, the hypotheses of Experiment B essentially paralleled those of Experiment A. The major difference was that hypotheses of Experiment B were expanded to also include predictions based on the gaze level manipulation.

Hypothesis B-1. While subject B is speaking to two strangers, he will direct more gaze toward the person who had previously spoken (target A) than toward the person who had not as yet spoken (target C); however, the amount of gaze that subject B directs toward target A will vary directly with the amount of gaze that target A previously

had directed towards him.

As mentioned with respect to Hypothesis A-2, when a person is listening to another person, he should direct most of his visual attention towards the speaker, as it is customary to look at the person who is speaking. However, the amount of visual attention that he directs towards the speaker should vary directly with the amount of visual behaviour that the speaker is directing towards him.

Hypothesis B-2. While listening to a person (target A) speak, subject B will direct more gaze towards that person than towards a third person who is also listening (target C); however, the amount of gaze that subject B directs toward target A will vary directly with the amount of gaze that target A is presently directing towards him.

As for Experiment A, it was hypothesized that the subject would exhibit more gaze while listening than while speaking. Because this hypothesis involved the sum of the subject's gaze directed at both of the targets, no predictions as to the effects of the gaze level manipulations were made.

Hypothesis B-3. Subject B will spend more time looking at his two coactors (the gaze directed at target A plus the gaze directed at target C) while listening to target A than while he himself is speaking.

Previous research (Kleinke, Staneski, & Berger, 1975; Mehrabian, 1966, as cited in Argyle, et al, 1972) also has

shown that the amount of gaze that a person directs at a subject is positively correlated with favorable ratings by the subjects of him. Thus, the following hypothesis was included to determine if the amount of visual attention that target A directed at the subject was related to the subject's evaluation of him.

Hypothesis B-4. Subject B will rate the person who had previously spoken (target A) more favorably than the person who had not spoken (target C); however, the more individual gaze that is directed by target A towards subject B while target A is speaking, the more favorably subject B will rate target A relative to target C.

CHAPTER II

METHOD

Subjects

Seventy-eight male students from introductory courses at the University of Windsor were recruited for the experiment. Forty-two of the subjects participated in Experiment A. They served as members of triads which were composed entirely of naive subjects. The remaining 36 subjects participated in Experiment B as members of triads consisting of one naive subject and two confederates. In Experiment A, 14 subjects were randomly assigned to each of the three roles of target A, subject B, and target C. In Experiment B, the subject always played the role of subject B, with 12 subjects being randomly assigned to each of the three levels of confederate gaze (high, medium, or low).

Confederates and Observers

Four male students from a third year psychology course served as confederates. Their ages ranged from 19 to 25 years. Two females, also recruited from the same course, acted as observers.

Setting and Apparatus

The experiment was conducted in a 17 X 33 foot room which contained a one-way mirror on one of its walls. Near the one-way mirror was a triangular table with three chairs placed around it. A letter designating the seating position of each participant (A, B, or C) was taped on the surface of the table. The table was arranged so that the face of subject B was clearly visible

to an observer located in the observation room on the other side of the one-way mirror. The table also was positioned at a slight angle to the mirror so that subject B would not be able to see his reflection in it. The room contained a microphone and two television cameras which were arranged so that one of the cameras could always record the looking behaviour of the person occupying seating position A.[1] The observation room contained the following pieces of equipment: an Esterline-Angus pen recorder, a video-tape recorder and monitor, a cassette recorder (which was used as a timing device by the placement of "beeps" at certain intervals), two Lafayette 60-second timers, a counter having multiple registers, a 12-volt transformer for the operation of the timers and counter, and an intercom for communicating with the experimental room.

In order to record the visual behaviour of a subject, an observer held a switch in each hand. One switch was pressed if the subject looked at target A and the other was pressed if the subject looked at target C. The pressing of a switch activated one of the pens on the pen-recorder. In addition to this, the frequency and duration of individual gaze were recorded on the counter and timer, respectively. The use of the counter and timer allowed for the scoring of the data instantaneously. The data from the pen-recorder served as a check on the reliability of the counter and timer and also was used for the measurement

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1. During the experiment, the seating positions of A and C were counterbalanced, thus necessitating the use of two cameras.

of inter-observer reliability.

Procedure

Experiment A. The subjects were told at the time of their solicitation that the study dealt with the "acquaintance process." A given trial involved three naive subjects. Each subject was assigned to arrive at the same time but in different waiting rooms. The subject who was designated target C was assigned to the waiting area nearest the experimental room. The waiting areas for the remaining two subjects were on another floor.

Once the experimenter was sure that all three subjects had arrived, he went to the waiting area where target C was and greeted him as follows:

> Hello! You must be _____. My name is Wayne Lesko and we are conducting this experiment. There are two other students who will be participating in this experiment with you. As you may recall, we are studying the acquaintance process. Because of this we wanted people who did not know each other prior to the experiment. As it is important that you did not meet prior to the experiment, each of you has been assigned to a separate meeting area. If you will follow me into this room, my assistant and I will go to get the other two subjects. Why don't you take a seat; we'll only be gone a second.

The experimenter took target C into the experimental room and gestured to him to have a seat. The experimenter and the observer then went to the next floor and greeted their respective subjects. The subject that the experimenter greeted was designated as subject B, and the subject that the observer met was designated as target A. The experimenter and the observer greeted their respective subjects with an introduction similar to the one that the experimenter gave to target C. The experimenter and observer timed their actions

so that the experimenter and subject B entered the experimental room just a few seconds before the observer and target A arrived. Thus, all three subjects were equally unacquainted. Once the three subjects were in the experimental room, the observer left the room, closing the door behind her. The experimenter then addressed the subjects as follows:

> The three of you will be interacting in this experiment together. So that you'll know who your fellow subjects are, this is ____, ____, and ____.[2] As you were already told when we recruited you for this experiment, this study deals with the acquaintance process. Essentially, we are interested in how people react to one another when they meet each other for the first time. Although this area is of practical importance, surprisingly little research has been done on it. Although there are many situations in which people can meet, we are interested in one particular kind: the structured setting. This situation involves each of you telling the others about yourself for a certain period of time while the other two listen to you. As the experimental design involves a particular arrangement of presentation, I have already randomly assigned each of you to a certain seat. ____, could you please sit here at A? ____, could you please sit here at B? ____, could you please sit here at C?

Once the subjects had been seated, the experimenter continued:

> Now, the specific nature of this experiment involves each of you talking about yourself to the others for four minutes. While the other person is speaking the other two are just to listen; they are not to interrupt or say anything. The order of speaking will be as follows: A, you will go first, followed by B, with C going last. Now, what each of you is to talk about is something that gives the other people an idea of the kind of person that you are. In other words, you can talk about anything that tells the others something about you, such as your hobbies, your past, some interesting experiences you have had, or your hopes and goals for the future. The only thing that I ask is that while talking, you talk for the entire four minutes and while listening, you pay careful

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2. Subjects were introduced in the order in which they were standing, from left to right. Only first names were used.

attention to what the other person is saying.

> As we do not want to interfere with this interaction, we will be watching it from the next room (the experimenter points to the one-way mirror). As you can tell from the microphone and cameras, we will also be videotaping the conversation. When I go into the next room, I will tell you, A, over the intercom to begin. When you hear me say, "Begin," start to talk about yourself and continue to do so until you hear me say "Stop." When you have finished, I will tell you, B, to begin and you are likewise to talk until I tell you to stop, and so on. Do you have any questions?

At this point, the experimenter answered any questions that the subjects may have asked. The experimenter then continued:

> Now remember, you will be speaking in order, and only one person will be speaking at a time. While you are listening, pay careful attention to what the other person is saying and do not say anything yourself. Also, please do not talk to one another until I tell A to begin. Do you have any other questions?

The experimenter then left the room and entered the observation room. After turning on all the equipment, the experimenter announced over the intercom, "A, please begin."

The recording of subject B's visual behaviour was divided into three 45-second periods. The observer began to record subject B's visual behaviour once she heard the tape recorder "beep," which occurred approximately 20 seconds after the experimenter left the experimental room. The observer depressed the left switch whenever subject B looked at the face region of the target on the observer's left, and the right switch whenever subject B looked at the face region of the target on the observer's right. After the 45-second period ended (indicated by

another "beep"), the experimenter recorded the data from the instruments and then reset them. Approximately 15 seconds elapsed before the beginning of the next timing period. The same procedure was used for the second and third periods. After the end of the third period, the experimenter announced over the intercom: "A, you can stop now. B, would you please begin."

The above recording procedure was repeated while subject B was speaking. Then the experimenter turned off all of the equipment and entered the experimental room. He said to the subjects:

> B, you can stop now. Before we continue with the rest of the experiment by letting C speak, we would first like you to answer a few questions. In order to give you more room to work with the questionnaire, could you please follow me to the large tables at the back of the room?

The experimenter led the subjects to the rear of the room and seated them apart from each other so that they could not see one another's responses. He then passed out the questionnaire (see Appendix B-1) and gave the following instructions.

> We would like you to rate both of your fellow participants, whether or not you have spoken yourself and whether or not you have heard both of the others speak. In other words, for each item, you should have two responses, one for the person who was seated on your right and one for the person who was seated on your left. If you have any questions about the questionnaire, please don't hesitate to ask.

Once all the subjects had finished, the experimenter said:

> We were interested in how strangers get to know one another for the first time. The experiment is actually over at this point. I would like to apologize to you, C, for not giving you an opportunity to speak. Before

> I tell you any more about the experiment, I would first like you to answer a few more questions.

The experimenter then passed out a questionnaire designed to ascertain the subject's foreknowledge or suspicions about the experiment (see Appendix B-2). After collecting the completed questionnaires, the experimenter looked over the answers. If any of the subjects indicated a knowledge of the actual purpose of the experiment, the experimenter questioned him further to determine exactly what he did suspect. After this, the experimenter continued with the debriefing.

> As I mentioned, we are interested in studying how you interacted with one another. In particular, we were interested in studying your nonverbal behaviours. In any given human interaction, people are communicating with each other via various nonverbal cues. In other words, we were more interested in studying what you did rather than what you said. Previous research has shown that certain nonverbal behaviours such as posture, smiling, etc. are characteristic of particular types of interactions. We were interested in finding out how these behaviours occurred between recently introduced people. I hope you will forgive the slight deception on our part, but it was necessary for our purpose. Do you have any questions?
>
> As we will be conducting this research for a few more weeks, we'd really appreciate it if you wouldn't discuss this experiment with any of your fellow students. This is necessary because we can only use them if they have not heard about the experiment, for if they were aware that we were measuring their nonverbal behaviours, we would not be able to use their data. If you are interested in the results of this study, I will gladly send you a copy once the analysis is completed, which will be in about four months. If you want a copy, just put your name and address on this envelope and we will mail it to you just as soon as it is ready. Again, thank you very much for having helped us out.

The experimenter then passed out envelopes to those students

interested in receiving a copy of the results. As the subjects left, the experimenter again thanked them individually for their cooperation.

Experiment B. The procedure used in this experiment was basically the same as the one used in Experiment A. The major difference was that Experiment B involved two confederates and only one subject (who was always B). All four confederates were paired in all possible combinations, and each spent an equal amount of time as targets A and C. Each of the confederates prepared a speech based upon his own life. Although the specifics of each story varied, the themes and amount of self-disclosure were basically the same.

The confederates were instructed to maintain comfortable postures throughout the interaction. They sat fairly erect and maintained their body orientation equi-distant between the two other participants.

Depending upon the gaze level condition, the confederate, when playing the role of A and speaking, was instructed to manipulate his gaze as follows: In the high gaze condition, the confederate directed almost all of his gaze at subject B, while glancing at target C only five times.[3] This resulted in a minimum of 80% of the confederate's gaze being directed at subject B. In the low gaze condition, the amount of gazing at each target was reversed. In the medium gaze condition, an

3. The confederates found this relatively easy to accomplish simply by counting the number of glances directed at target C on their fingers.

equal amount of gaze was directed at subject B and target C. Considerable pre-training was undertaken to insure that the confederates could actually meet these requirements.

While listening to subject B speak, the confederate in role A was instructed to direct almost all of his gaze towards the speaker. He was allowed to look away, but not at target C. The confederates also were instructed not to smile, nod, or otherwise reinforce any of the speaker's comments. However, if the speaker did make a very funny remark, they were allowed to laugh.

The instructions for the confederate in the role of target C were identical to those mentioned above for a confederate in the role of target A while listening. He was instructed to direct almost all of his gaze at the speaker and not to look at the other listener.

Although the procedure for Experiment B was virtually identical to that of Experiment A, there was an additional questionnaire which the participants were asked to complete. In order to ascertain how cognizant subject B was of the manipulation of the confederate's visual behaviour, it was necessary to interview the subject out of hearing distance of the two confederates. After all of the participants had completed the questionnaire regarding their suspicions about the experiment, the experimenter announced:

> In addition to this, there are a few questions that I would like to ask each of you individually. As you were the last one to speak, (subject B's name), could you please follow me in here. I'll be back with you (referring to the confederates) in a few minutes;

> would you mind waiting here? You can take your books and coat (referring to the subject) as we won't be coming back here.

The experimenter then took the subject into an adjoining room. After looking over his responses to the suspicion questionnaire, the experimenter asked the subject questions designed to determine his specific awareness of the confederate's behaviour (see Appendix B-3). Once that was completed, the experimenter proceeded with the same debriefing discussed for Experiment A. The subject was thanked and sent on his way.

CHAPTER III

RESULTS

Preliminary Analysis

In order to insure that the subjects were unacquainted with one another prior to the experiment, all subjects were asked to rate their familiarity with each of their co-actors on a post-test questionnaire (Appendix B-1). None of the subjects indicated any previous acquaintance with any of their fellow participants. On a second questionnaire (Appendix B-2), the subjects were asked whether they had heard of the experiment prior to their participation in it and what they thought was the purpose of the experiment. None of the subjects indicated possessing foreknowledge of the experiment. A few subjects believed that their nonverbal behaviours were being measured, but none of them was aware that his visual behaviour was the variable of interest.

Subjects in Experiment B were administered an additional post-test questionnaire (Appendix B-3) to determine if they were aware of the confederate's gaze level. Thirty-three percent of the subjects indicated they were aware of the confederate's gaze directed towards them in the high and low gaze level conditions. However, none was suspicious that the confederates were actually cohorts of the experimenter. When asked to comment on why the confederate behaved as he did, most subjects who were aware of his gaze level simply attributed it either to an idiosyncrasy on the confederate's part or as an indication of whom the confederate liked most.

The inter-reliability of the observers' judgements was tabulated by calculating the percentage of agreement between their recordings according to the procedure suggested by Exline (1963). Both observers recorded subject B's visual behaviour simultaneously during three experimental trials. The mean percentage of agreement for duration of gaze was 86.7%, while the agreement for frequency was 94.2%.

Although the confederates underwent considerable pretraining to insure that they were able to manipulate their gaze correctly, video-recordings of their visual behaviour while speaking were made in order to permit a check on the manipulation. In the high gaze condition, the confederates were to direct no less than 80% of their gaze at subject B, while no more than 20% of their gaze was to be directed at subject B in the low gaze condition. In the medium gaze condition, the confederate's gaze was to be divided evenly between subject B and target C. As the means and percentages of confederate gaze found in Appendix A indicate, the confederates were able to meet the criteria for amount and direction of gaze. Although the absolute amounts of gaze for the confederates do vary somewhat, reflecting individual differences, the percentages of gaze directed at subject B were very similar.

Experiment A

Hypothesis A-1 predicted that while speaking subject B would direct most of his individual gaze toward the person who had previously spoken (target A). In order to test this hypothesis, three separate 2 X 3 (target x time) analyses of variance with

repeated measures on both factors were carried out. Time was included as a factor in this analysis and subsequent analyses in an attempt to replicate previous research which indicated that the amount of gaze decreased as a function of time (Argyle & Dean, 1965; Breed, 1972; Coutts & Schneider, 1975). One analysis was performed on the frequency of individual gaze (i.e. the rate at which it occurred), another on the total duration of individual gaze (i.e. the overall length of time that it occurred), and the last analysis on the mean duration of individual gaze (i.e. the total duration divided by the frequency). The raw data for all of the analyses of Experiment A are presented in Appendix C. The mean scores are presented in Table 1, and the summaries of the analyses of variance are presented in Table 2.

As Table 2 indicates, the effect of target was significant for total duration and mean duration of gaze and marginally significant for frequency of individual gaze. Inspection of the means in Table 1 reveals that in all cases subject B directed more of his gaze towards target A than towards target C. These results thus lend support to Hypothesis A-1, that is, to the notion that people look more at a person with whom they are better acquainted.

Also it was expected that subject B's visual behaviour might decline as a function of time. However, none of the main effects of time was significant, although there was a significant target x time interaction for the frequency of gaze. An analysis of the simple effects of the interaction reveals that time was a significant factor only in relation to target A (F=7.63; df=1,52;

TABLE I

Mean Frequency, Total Duration, and Mean Duration of Individual Gaze While Speaking for Target and Time: Experiment A

	Frequency		Duration[a]		Mean Duration[a]	
	Target A	Target C	Target A	Target C	Target A	Target C
1st Period	5.857	2.429	5.989	2.086	0.792	0.435
2nd Period	4.071	2.857	4.486	2.275	0.871	0.409
3rd Period	3.929	3.000	4.614	2.271	0.791	0.368

[a]Figures designate duration in seconds.

TABLE 2

Analyses of Variance of Frequency, Total Duration, and Mean Duration of Individual Gaze while Speaking for Target and Time: Experiment A

Source		Frequency		Duration		Mean Duration	
	df	MS	F	MS	F	MS	F
Within Subjects	70						
Target (A)	1	72.4286	4.388*	166.8876	5.391**	3.6001	8.407**
A X Subjects within groups	13	16.5055		30.9549		0.4282	
Time (B)	2	4.2976	0.848	3.6836	0.939	0.0256	0.278
B X Subjects within groups	26	5.0668		3.9218		0.0922	
A X B	2	13.1071	3.838**	6.2056	1.286	0.0195	0.244
A X B X Subjects within groups	26	3.4148		4.8237		0.0799	

*$p < .10$
**$p < .05$

$p < .01$). Newman-Keuls tests show that the time effect for target A was a result of a significant decrease in gaze from the first to the second time period ($p < .05$). There was no significant decrease in gaze over time from the second to the third period. The analysis of the interaction also revealed that the marginally significant effect of target for frequency of gaze was due to subject B directing more frequent gaze toward target A than toward target C only during the first time period.

Hypothesis A-2 stated that subject B, while listening to target A speak, will direct more individual gaze at target A than at target C. Three 2 X 3 (target x time) analyses of variance with repeated measures on both factors were carried out. The means and the results of the analyses of variance are presented in Tables 3 and 4, respectively. As Table 4 indicates, target was significant for all three measures of gaze. As predicted, more gaze was directed at target A than at target C.

The effect of time was significant only for the total duration of individual gaze. A significant target x time interaction for the total duration of gaze was also detected. Tests of simple effects reveal that the interaction was due to a decrease in gaze over time directed at target A ($F = 14.62$; $df = 1,52$; $p < .001$). The gaze directed at target C did not significantly decrease over time. Newman-Keuls tests indicate that the significant decrement in gaze over time directed at target A occurred only between the second and third time periods. ($p < .01$). Furthermore, a marginally significant interaction

TABLE 3

Mean Frequency, Total Duration, and Mean Duration of Individual Gaze while Listening for Target and Time: Experiment A

	Frequency		Duration[a]		Mean Duration[a]	
	Target A	Target C	Target A	Target C	Target A	Target C
1st Period	7.571	1.071	27.536	0.425	4.429	0.201
2nd Period	8.357	0.929	26.418	0.486	4.689	0.251
3rd Period	8.571	1.071	21.725	0.661	2.961	0.299

[a]Figures designate duration in seconds.

TABLE 4

Analyses of Variance of Frequency, Total Duration, and Mean Duration of Individual Gaze while Listening for Target and Time: Experiment A

Source		Frequency		Duration		Mean Duration	
	df	MS	F	MS	F	MS	F
Within Subjects	70						
Target (A)	1	1071.4286	68.986****	12814.3601	72.447****	299.3764	15.537***
A X Subjects within groups	13	15.5311		176.8801		19.2689	
Time (B)	2	1.7976	0.601	61.3774	3.561**	5.5964	2.419
B X Subjects within groups	26	2.9899		17.2358		2.3137	
A X B	2	2.1786	1.126	71.9184	3.748**	6.5879	2.703*
A X B X Subjects within groups	26	1.9350		19.1877		2.4371	

*$p < .10$
**$p < .05$
***$p < .01$
****$p < .001$

between target and time for mean duration of individual gaze suggested the same pattern of results as indicated by the target x time interaction for total duration of individual gaze.

Hypothesis A-3 predicted that subject B would exhibit more individual gaze while listening than while speaking. The data were analyzed by means of three 3 X 2 analyses of variance. The independent variables, both repeated measures factors, were time and activity (speaking and listening). The mean scores can be found in Table 5, and the results of the analyses of variance are presented in Table 6. As Table 6 indicates, the activity factor was significant, but only for total duration and mean duration. An inspection of the means indicates that in both cases, subject B exhibited more gaze while listening than while speaking. Although the same pattern of means exists for the frequency measure, the differences were not large enough to yield significance. These results reveal that although a subject exhibits nearly the same number of glances while listening as while speaking, the mean duration of each glance is noticeably longer while listening.

Table 6 also reveals that for total duration of gaze there was a significant time effect, as well as a marginally significant interaction between time and activity. An analysis of simple effects indicated that time significantly affected the amount of gaze only in the listening mode ($F=11.59$; $df=1,52$; $p<.001$). Newman-Keuls tests on this time effect reveal that the greatest decrement occurred from the second to the third periods of time

TABLE 5

Mean Frequency, Total Duration, and Mean Duration of Individual Gaze for Activity and Time: Experiment A

	Frequency		Duration[a]		Mean Duration[a]	
	Listening	Speaking	Listening	Speaking	Listening	Speaking
1st Period	8.643	8.286	27.961	8.075	4.036	0.759
2nd Period	9.286	6.929	26.904	6.761	4.345	0.773
3rd Period	9.643	6.929	22.386	6.886	2.769	0.696

[a] Figures designate duration in seconds.

TABLE 6

Analyses of Variance of Frequency, Duration, and Mean Duration of Individual Gaze for Activity and Time: Experiment A

Source		Frequency		Duration		Mean Duration	
	df	MS	F	MS	F	MS	F
Within Subjects	70						
Time (A)	2	0.8929	0.116	82.4558	3.480**	5.3709	2.090
A X Subjects within groups	26	7.7262		23.6929		2.5695	
Activity (B)	1	68.7619	0.900	7194.6519	36.036****	185.7739	11.536***
B X Subjects within groups	13	76.4286		199.6544		16.1037	
A X B	2	11.2976	1.347	47.6662	2.560*	4.4115	2.129
A X B X Subjects within groups	26	8.3874		18.6224		2.0726	

* $p < .10$
** $p < .05$
*** $p < .01$
**** $p < .001$

($p < .01$), although there was also a significant decrease in gaze from the first to the second time periods ($p < .05$). It should be noted that the analyses of time for Hypothesis A-3 actually provide little new information because most of the data used in the analyses were the same data used in the time factor analyses of Hypotheses A-1 and A-2.

Hypothesis A-4 predicted that subject B would rate the person who had spoken previously (target A) more favorably than the person who had not spoken (target C). The questionnaire consisted of nine items on which the subject was to rate both target A and C. The items were analyzed by means of nine separate t-tests for related samples. The means and results of the t-tests are presented in Table 7. Only the t-test for item 4 was significant, although the test for item 9 was marginally significant. Subject B found target A to be more interesting than target C (item 4). However, contrary to expectations, there was a marginally significant tendency for subject B to believe that target C felt closer (or more intimate) to him than did target A (item 9).

In summary, the results of Experiment A support the notion that more gaze is directed towards a person with whom one is better acquainted. In addition to this, a person exhibits a greater duration of gaze while listening as opposed to speaking whereas the number of glances is the same. Time has an effect on the frequency of gaze while speaking and on the duration of gaze while listening. This effect of time only occurs for the

TABLE 7

Mean Ratings and t-tests for Target:
Experiment A

Item	Description[a]	Target A	Target C	t-values[b]
1	I believe that this person is very much above average in intelligence.	3.286	3.500	-0.90
2	I feel that I would probably like this person very much.	2.643	2.786	-0.62
3	I believe that I would very much enjoy working with this person in an experiment.	2.357	2.214	0.46
4	I thought that this person was very interesting.	2.357	3.429	-3.32**
5	I very much approved of this person.	2.143	2.429	-0.89
6	I feel that I would probably be very close to this person.	3.857	3.643	1.38
7	He thought that I was very interesting.	3.071	3.071	0.00

TABLE 7, cont.

Item	Description[a]	Target A	Target C	t-values[b]
8	He very much approved of me.	2.857	2.786	0.56
9	He probably felt very close to me.	4.143	3.929	1.88*

Note. The most positive description of each item is presented. The ratings on the third item, which had a negative description for the first statement, were reversed for ease in interpretation.

[a] Items 1 through 6 refer to the subject's feelings towards the targets; items 7 through 9 refer to how the subject believed the targets felt about him.

[b] Degrees of freedom = 13.

*$p < .10$
**$p < .01$

gaze that is directed at target A. Analyses of the ratings indicated that subject B felt that target A was more interesting than target C.

Experiment B.

Experiment B was similar to Experiment A except that the roles of targets A and C were played by trained confederates who manipulated the amount of gaze they directed at subject B. Thus, all of the hypotheses related to Experiment B are similar to their counterparts in Experiment A, except they have been extended to include a consideration of the additional factor, confederate gaze level.

Hypothesis B-1 predicted that subject B, while speaking, would direct most of his individual gaze towards target A and that the amount of gaze directed at target A would vary directly with the amount of gaze that target A had previously directed towards him. This hypothesis was tested by means of three 3 X 2 X 3 (gaze level x target x time) analyses of variance with repeated measures on the last two factors. The raw data for the analyses of Experiment B can be found in Appendix D. The means are presented in Table 8, and the results of the analyses of variance are summarized in Table 9.

The analyses reveal a significant target effect for all three measures of individual gaze. Inspection of the means presented in Table 8 indicates that the greatest amount of gaze was directed at target A rather than target C, a finding which is consistent with the results of Experiment A. Thus, the

TABLE 8

Mean Frequency, Total Duration, and Mean Duration of Individual Gaze while Speaking for Gaze Level, Target, and Time: Experiment B

		Frequency		Duration[a]		Mean Duration[a]	
		Target A	Target C	Target A	Target C	Target A	Target C
High Gaze Level	1st Period	3.833	2.333	3.637	1.579	0.737	0.503
	2nd Period	4.333	2.167	3.975	2.212	0.844	0.524
	3rd Period	3.833	2.917	4.092	2.846	0.906	0.572
Medium Gaze Level	1st Period	5.417	3.250	6.317	3.562	1.104	0.798
	2nd Period	4.917	2.833	5.604	2.454	1.061	0.657
	3rd Period	5.000	4.000	5.504	3.808	1.082	0.812
Low Gaze Level	1st Period	5.167	3.833	6.417	3.354	0.995	0.742
	2nd Period	5.417	2.667	6.537	3.342	1.000	0.704
	3rd Period	5.000	2.583	7.875	3.650	1.755	0.912

[a]Figures designate duration in seconds.

TABLE 9

Analyses of Variance of Frequency, Duration, and Mean Duration of Individual Gaze while Speaking for Gaze Level, Target, and Time: Experiment B

Source	df	Frequency MS	Frequency F	Duration MS	Duration F	Mean Duration MS	Mean Duration F
Between Subjects	35						
Gaze Level (A)	2	21.3750	0.840	86.4862	1.478	2.1598	1.600
A X Subjects within groups	33	25.4369		58.5032		1.3500	
Within Subjects	180						
Target (B)	1	177.8519	13.358***	357.2817	8.070***	7.0778	12.179***
A X B	2	1.8935	0.142	14.6906	0.332	0.1441	0.248
B X Subjects within groups	33	13.3140		44.2706		0.5812	
Time (C)	2	1.1667	0.323	7.4437	1.354	0.9681	2.477*
A X C	4	2.4792	0.686	4.0149	0.730	0.4860	1.243
C X Subjects within groups	66	3.6124		5.4988		0.3908	
B X C	2	3.8519	1.018	0.4810	0.071	0.2207	0.617
A X B X C	4	2.1644	0.572	3.1767	0.472	0.2382	0.666
B X C X Subjects within groups	66	3.7824		6.7320		0.3576	

*$p < .10$
**$p < .05$
***$p < .01$

results of both experiments indicate that while speaking a person directs more of his gaze toward a person who had previously spoken than towards a person who has not yet spoken.

The gaze level that target A directed at subject B did not have a significant effect upon the amount of gaze that subject B subsequently directed towards him relative to target C, thus failing to lend support to the second part of Hypothesis B-1. In fact, an inspection of the means reveals a trend for subject B to direct the most gaze toward both of the targets in the low gaze condition followed by less gaze in the medium condition, with the least amount of gaze occurring in the high gaze condition.

There were no significant effects for time. This is somewhat discrepant with the results of Experiment A which indicated that the frequency of looking at target A declined with time.

Hypothesis B-2 predicted that subject B, while listening to target A speak, would direct more individual gaze at target A than at target C, and the amount of gaze directed at target A would vary directly with the amount of gaze target A directed towards him. The hypothesis was analyzed by three 3 X 2 X 3 (gaze level x target x time) analyses of variance. The means and the results of the analyses of variance may be found in Tables 10 and 11, respectively. As Table 11 indicates, the present analyses detected the presence of a significant target effect for all three measures of individual gaze. In all cases, almost all of subject B's gaze was directed at target A, while target C virtually was ignored. This finding lends support to the first half of Hypothesis B-2 and is also consistent with results of

TABLE 10

Mean Frequency, Total Duration, and Mean Duration of Individual Gaze while Listening for Gaze Level, Target, and Time: Experiment B

		Frequency		Duration[a]		Mean Duration[a]	
		Target A	Target C	Target A	Target C	Target A	Target C
High Gaze Level	1st Period	7.750	0.917	26.050	0.779	4.194	0.262
	2nd Period	5.500	0.167	24.335	0.204	5.867	0.204
	3rd Period	5.250	0.167	25.137	0.188	6.167	0.188
Medium Gaze Level	1st Period	6.917	0.583	28.254	0.279	7.772	0.110
	2nd Period	5.500	0.417	25.396	0.204	6.393	0.162
	3rd Period	7.000	0.417	23.675	0.267	5.403	0.127
Low Gaze Level	1st Period	5.833	0.250	30.529	0.308	6.922	0.308
	2nd Period	6.083	0.417	26.187	0.400	8.614	0.178
	3rd Period	5.667	0.167	28.300	0.075	9.802	0.037

[a]Figures designate duration in seconds.

TABLE II

Analyses of Variance of Frequency, Duration, and Mean Duration of Individual Gaze while Listening for Gaze Level, Target, and Time: Experiment B

Source		Frequency		Total Duration		Mean Duration	
	df	MS	F	MS	F	MS	F
Between Subjects	35						
Gaze Level (A)	2	2.9306	0.198	48.1720	0.241	41.6382	0.484
A X Subjects within groups	33	14.8022		200.0856		85.9483	
Within Subjects	180						
Target (B)	1	1802.6667	172.221****	3686.8171	184.460****	2364.6644	26.577****
A X B	2	0.7917	0.076	53.7469	0.269	43.3809	0.488
B X Subjects within groups	33	10.4672		199.8638		88.9744	
Time (C)	2	10.1806	3.029*	54.6088	4.837**	2.7221	0.267
A X C	4	7.4444	2.215*	6.6374	0.588	11.1279	1.093
C X Subjects within groups	66	3.3615		11.2893		10.1816	
B X C	2	3.5972	1.359	39.7950	3.162**	4.2916	0.407
A X B X C	4	2.8472	1.075	11.8197	0.939	13.3310	1.265
B X C X Subjects within groups	66	2.6477		12.5841		10.5417	

*$p < .10$

**$p < .05$

***$p < .01$

****$p < .001$

Experiment A.

The analyses failed to show a significant effect of gaze level. Thus, contrary to the second half of Hypothesis B-2, a person does not seem to reciprocate the amount of gaze that is directed towards him by another person.

However, a significant time effect was found for total duration, as well as a significant target x time interaction for total duration. Analyses of the simple effects of the interaction reveal that time was a significant factor only with regard to target A ($F=47.08$; $df=1,132$; $p<.001$). Newman-Keuls tests of this effect indicated that the decrease in gaze directed at target A was significant only between the first and second time periods ($p<.01$) and not between the second and third periods. The results of this analysis may be related to those obtained for Experiment A, which also revealed the presence of a significant time x target interaction for total duration attributable to a decrease in gaze over time only for target A. However, the results for the two experiments did differ in that with regard to Experiment A the significant decrease in gaze came between the second and third periods, whereas in Experiment B the decrease came between periods one and two.

Hypothesis B-3 predicted that subject B would exhibit more individual gaze while listening than while speaking, and that his gaze level during both of these activities would vary directly with the gaze level directed at him by target A. This

hypothesis was analyzed by means of three 3 X 2 X 3 (gaze level x activity x time) analyses of variance with repeated measures on the last two factors. The means are presented in Table 12, and the results of the analyses of variance are presented in Table 13. As Table 13 indicates, there was a significant activity effect for total duration and mean duration. Inspection of the means in Table 12 indicates that a greater duration of indidividual gaze was exhibited while subject B was listening than while he was speaking, findings which are consistent with Hypothesis B-3. These findings, in conjunction with the nonsignificant effect of activity with respect to frequency of gaze, indicate that a person looks approximately the same number of times both while listening and while speaking, but his glances are considerably longer while he is listening. These results are consistent with those obtained for Experiment A, which also found that a subject exhibits significantly greater individual gaze while listening, but only for total duration and mean duration.

The analyses failed to detect any significant effects of gaze level. However, as noted earlier, the analyses of the data for Hypothesis B-3 involved the summation of the subject's gaze directed at both of the targets. The results of the analyses are confounded, since the sum of the subject's gaze does not reveal the direction of his visual attention.

TABLE 12

Mean Frequency, Total Duration, and Mean Duration of Individual Gaze for Gaze Level, Activity, and Time: Experiment B

		Frequency		Duration[a]		Mean Duration[a]	
		Listening	Speaking	Listening	Speaking	Listening	Speaking
High Gaze Level	1st Period	8.667	6.167	26.829	5.217	3.967	0.760
	2nd Period	5.667	6.500	24.539	6.187	5.711	0.931
	3rd Period	5.417	6.750	25.325	6.937	6.154	0.892
Medium Gaze Level	1st Period	7.500	8.667	28.533	9.879	7.631	1.058
	2nd Period	5.917	7.750	25.600	8.058	6.225	0.996
	3rd Period	7.417	9.000	23.942	9.312	5.331	0.960
Low Gaze Level	1st Period	6.083	9.000	30.837	9.771	6.864	0.999
	2nd Period	6.500	8.083	26.587	9.879	8.490	1.023
	3rd Period	5.833	7.583	28.375	11.525	9.749	0.365

[a]Figures designate duration in seconds.

TABLE 13

Analyses of Variance of Frequency, Duration, and Mean Duration of Individual Gaze for Gaze Level, Activity, and Time: Experiment B

Source		Frequency		Duration		Mean Duration	
	df	MS	F	MS	F	MS	F
Between Subjects	35						
Gaze Level (A)	2	25.1806	0.461	240.9901	0.770	51.8064	0.573
A X Subjects within groups	33	54.6709		312.8577		90.3995	
Within Subjects	180						
Time (B)	2	17.0972	2.528*	52.3693	2.745*	5.2008	0.496
A X B	4	7.6944	1.138	15.2967	0.802	14.3136	1.365
B X Subjects within groups	66	6.7630		19.0748		10.4852	
Mode (C)	1	73.5000	2.848	17887.3240	87.546****	1743.4194	20.146****
A X C	2	23.4306	0.908	28.3198	0.139	36.9800	0.427
C X Subjects within groups	33	25.8072		204.3198		86.5383	
B X C	2	5.5972	0.779	71.7356	4.947**	3.0914	0.303
A X B X C	4	12.1528	1.691	6.0079	0.414	10.4896	1.027
B X C X Subjects within groups	66	7.1848		14.5014		10.2174	

*$p < .10$

**$p < .05$

***$p < .01$

****$p < .001$

The present analyses also revealed the presence of a significant time x activity interaction for total duration. Simple effects analyses of the interaction indicated that the effect of time was more pronounced for the listening mode (F=39.03; df=1,132; $p < .001$) than for the speaking mode (F=3.7; df=2,132; $p < .05$). Newman-Keuls tests on the time effect for the listening mode revealed that total duration significantly decreased from the first period to the second ($p < .01$) but not from the second to the third periods. All Newman-Keuls tests on the time effect for the speaking mode were nonsignificant. The results of this analysis were similar to the results obtained in Experiment A. Both experiments found a significant time x activity interaction with time having its greatest effect while listening. However, the time effect of Experiment A was attributed to a decrease in gaze between the second and third periods whereas the present time effect was due to a decrease between the first and second periods. It should be noted that the analyses of gaze level and time for Hypothesis B-3 actually provided little new information, as the analyses involved the use of much of the same data employed in the analyses of Hypotheses B-1 and B-2.

Hypothesis B-4 stated that subject B would rate target A more favorably than target C and that target A would be rated more favorably with increasing amounts of gaze that he directed towards subject B. The data were analyzed by nine 3 X 2 (gaze level x target) analyses of variance with repeated measures on

the last factor. The means and the results of the analyses of variance are presented in Tables 14 and 15, respectively. As Table 15 indicates, the ratings given to target A significantly differed from the ratings given to target C on items 2, 3, 4, and 9. The subject indicated that he would probably like target A more than target C; that he would enjoy working more with target A; that he found target A more interesting; and that he believed that target A felt closer (or more intimate) to him than did target C. All of the ratings that were significant tend to indicate that subject B perceived target A more favorably than target C, a finding which is consistent with the first half of the present hypothesis. It will be recalled that the analyses of Experiment A yielded significance on one item, item 4. The present results for item 4 directly correspond to those of item 4 in Experiment A, showing that subject B found target A to be more interesting than target C.

Additionally, subjects were asked to rate how they felt during the interaction on four dimensions of feeling (disgusted, anxious, bored, and uneasy). Only one item, bored, reached significance ($F=5.44$; df-2,33; $p<.01$), with subjects indicating that they felt more bored in the low gaze condition than in either of the other gaze conditions ($p<.01$).

Confederate gaze level significantly affected the ratings only on item 8 and marginally affected the ratings on item 2. Newman-Keuls tests on item 8 indicated that the ratings in the high gaze condition were significantly lower than those given in the medium

TABLE 14

Mean Ratings for Gaze Level and Target:
Experiment B

Item	Description[a]	Gaze Level	Target A	Target C
1	I believe that this person is very much above average in intelligence.	High	2.833	3.167
		Medium	3.417	3.333
		Low	3.167	2.917
2	I feel that I would probably like this person very much.	High	2.167	2.500
		Medium	2.333	3.250
		Low	1.917	2.333
3	I believe that I would very much enjoy working with this person in an experiment.	High	5.500	4.417
		Medium	5.167	4.500
		Low	5.083	5.167
4	I thought that this person was very interesting.	High	1.833	2.583
		Medium	2.333	2.833
		Low	2.000	2.833
5	I very much approved of this person.	High	2.333	2.833
		Medium	2.167	2.333
		Low	1.750	2.250
6	I feel that I would probably be very close to this person.	High	2.917	3.333
		Medium	3.583	3.667
		Low	3.417	4.250
7	He thought that I was very interesting.	High	2.750	2.833
		Medium	3.333	3.333
		Low	3.167	3.333

TABLE 14, cont.

Item	Description[a]	Gaze Level	Target A	Target C
8	He very much approved of me.	High	2.250	2.333
		Medium	3.500	3.500
		Low	2.750	3.083
9	He probably felt very close to me.	High	3.667	4.000
		Medium	3.917	4.083
		Low.	3.250	4.167

Note. The most positive description of each item is presented. The ratings on the third item, which had a negative description for the first statement, were reversed for ease in interpretation.

[a]Items 1 through 6 refer to the subject's feelings towards the targets; items 7 through 9 refer to how the subject believed the targets felt about him.

TABLE 15

Analyses of Variance of Ratings for Gaze Level and Target: Experiment B

Source		Item 1		Item 2		Item 3		Item 4		Item 5	
	df	MS	F	MS	F	MS	F	MS	F	MS	F
Within Subjects	35										
Gaze Level (A)	2	1.01	0.68	2.79	2.98*	0.51	0.15	0.85	0.47	2.06	1.27
Subjects within groups	33	1.50		0.94		3.39		1.79		1.61	
Between Subjects	36										
Target (B)	1	0.00	0.00	5.55	6.49**	5.55	7.26**	8.68	7.26**	2.72	2.82
A X B	2	0.54	0.75	0.60	0.70	2.10	2.74*	0.18	0.15	-0.22	0.23
B X Subjects within groups	33	0.72		0.86		0.77		1.20		0.96	

TABLE 15, cont.

Source		Item 6		Item 7		Item 8		Item 9	
	df	MS	F	MS	F	MS	F	MS	F
Within Subjects	35								
Gaze Level (A)	2	3.18	1.41	2.04	1.34	8.76	4.30**	0.51	0.23
Subjects within groups	33	2.26		1.52		2.04		2.27	
Between Subjects	36								
Target (B)	1	3.56	2.81	0.13	0.27	0.35	1.30	4.01	6.75**
A X B	2	0.85	0.67	0.04	0.09	0.18	0.68	0.93	1.57
B X Subjects within groups	33	1.27		0.46		0.27		0.59	

*$p < .10$

**$p < .05$

and low gaze condition ($p < .01$), although the difference between the medium and low gaze conditions was not significant. Subject B felt that target A approved of him more in the high gaze condition than in either of the other two conditions, thus providing a little support for the first half of the present hypothesis. Newman-Keuls tests on item 2 failed to reveal any significant differences between the means.

In summary, the analyses of Experiment B clearly support the hypothesis that more gaze would be directed by the subject towards the person with whom he is better acquainted. However, the hypothesis that the gaze level of the confederate would affect the subject's visual behaviour was not supported. The results did indicate that the subjects exhibited more gaze while listening as opposed to speaking, but frequency of gaze was the same whether listening or speaking. Time mainly seemed to have an effect upon the duration of gaze directed at target A, and primarily when the subject was listening. Finally, analyses of the ratings indicated that the subject more favorably perceived the person with whom he was better acquainted (target A) rather than target C, and felt target A was more approving in the high gaze condition. In general, the results obtained for Experiment B are similar to the corresponding results obtained for Experiment A. Thus, Experiment B can be viewed as a successful replication of the findings of Experiment A.

CHAPTER IV

DISCUSSION

Experiments A and B were similar to one another, except Experiment B involved the use of trained confederates who manipulated the amount of their gaze towards the subject. Thus, Experiment B may be viewed as a replication and extension of Experiment A. First, the findings that were common to both experiments will be discussed, followed by a consideration of the results unique to Experiment B.

Both experiments provided evidence in support of the hypothesis that while speaking an individual will direct more of his gaze (as measured in terms of frequency, total duration, and mean duration) toward a stranger who has previously spoken than toward a person who has not spoken. This prediction was derived from Argyle and Dean's (1965) affiliative-conflict theory. According to the theory, there are both approach and avoidance forces affecting the establishment of an intimacy equilibrium point. One factor that may affect the strength of the approach-avoidance forces is the level of acquaintance between the interactants, with high levels of acquaintance being associated with stronger approach forces and consequently with efforts to establish a higher intimacy equilibrium point. One manifestation of this attempt to achieve a higher intimacy equilibrium point would be an increase in various non-verbal "immediacy cues" (Mehrabian, 1969) including individual gaze. In the present case, the level of acquaintance of the interactants

was manipulated by varying the order in which they spoke. At the time when subject B was speaking, he had already heard target A speak, but he had not heard target C speak. Subject B was in essence better acquainted with target A than target C in that he knew more about target A than target C. Thus, as a consequence of subject B's better acquaintance with target C, subject B had greater approach forces towards target A, resulting in an effort (i.e. increasing his gaze) to establish a higher intimacy equilibrium point with target A than target C.

Other research (Rubin, 1970; Russo, 1975) indicates that friends engage in more visual interaction than do strangers, findings which are also in accord with the above interpretation of the affiliative-conflict theory. Although it is unlikely that subject B's feelings about target A approximated those which he has about a friend, his familiarity with target A apparently was sufficient to yield results similar to those found in friend-stranger comparisons. Thus, it appears that the short amount of time which subject B listened to target A was sufficient to induce some feeling of acquaintance (or intimacy) which was manifested directly in his visual behaviour.

The results of Experiments A and B also reveals that while listening to someone speak, the subject directed considerably more of his gaze towards that person than towards another listener. This finding confirms Hypothesis A-2 and the first part of Hypothesis B-2, which were based upon the observation that it is customary to look at a speaker while listening to

him speak. This prediction was based upon common sense and the results certainly were anything but surprising. As the reader may recall, the hypothesis was included primarily as a basis upon which to test the effect of gaze level while subject B was listening, the findings about which will be discussed shortly.

A comparison of subject B's visual behaviour while listening and while speaking was undertaken, with the hypothesis that the subject would exhibit more gaze while listening than while speaking (Hypothesis A-3 and the first half of Hypothesis B-3). The results of both experiments showed that, as predicted, the total duration and mean duration of subject B's gaze was greatest while listening. However, unexpectedly there was no difference in the frequency of gaze while listening and speaking. Thus, the subject looked at his two coactors approximately the same number of times while speaking as while listening, but the length of his gazes were longer while listening. Although previous researchers (Exline, Gray, & Schutte, 1965; Kendon, 1967) have found that people tend to gaze more while listening than while speaking, they typically have not employed all measures of gaze (frequency, total duration, and mean duration) in comparing gaze while listening and while speaking. Thus, the measures used did not provide for the possibility that a person's visual behaviour while speaking and while listening may be similar regarding duration and mean duration but not with regard to frequency. Moreover, several differences between the present and earlier experiments may account for the different patterns

of visual behaviour. The subjects in the earlier studies were engaged in an active conversation, whereas in the present study the activities of speaking and listening were separated. Additionally, this study involved the interaction of three people, whereas earlier studies involved dyadic interactions. As the present study indicates, frequency of gaze seems to remain the same whether speaking or listening. It would be of interest to ascertain if the same pattern of findings pertains to the more common situation involving two (or more) people who are engaged in conversation.

The finding that there were no significant differences between the frequency of gaze while listening and speaking, whereas duration was greater while the subject was listening than while he was speaking, may signify that frequency and duration of gaze serve different functions. While speaking, a person needs a certain amount of feedback about his performance. This feedback may be obtained by looking at the reactions of his coactor. However, gazing into someone's eyes also may be distracting, in that is presents another set of stimuli to which he must attend. As a result, the speaker may look away to concentrate on his thoughts. The dual purpose of obtaining feedback and avoiding distraction may be accomplished by maintaining a relatively high frequency but low duration of gaze. On the other hand, while listening a person also tries to gain information but is less likely to be distracted by the experience of mutual gaze. Hence, compared with speaking, the frequency of gaze while listening is

approximately the same, but the mean duration of gaze is considerably longer.

Based on the findings of some other researchers (Argyle & Dean, 1965; Breed, 1972; Coutts & Schneider, 1975), it was expected that subject B's gaze might decrease as a function of time. However, gaze did not decrease uniformly as a function of time, nor was there a decrease in gaze level for all of the situations or dependent measures. In both experiments, subject B's gaze while speaking did not decrease appreciably during the interaction. The only exception to this stems from the target by time interaction for frequency in Experiment A which revealed that the frequency of subject B's gaze decreased as a function of time only for the gaze directed at target A. Time was found to be a highly significant factor in both experiments for the total duration of subject B's gaze while listening. In both experiments the time effect was attributable only to a decrease in gaze directed at target A. Although several investigators have found a decrease in subjects' visual behaviour during an interaction, none has discussed the findings in terms of whether the subjects were speaking or listening. The present results indicate that gaze, particularly its duration, is more likely to decrease over time while listening than while speaking.

Hypothesis A-4 and the first part of Hypothesis B-4 predicted that a subject would rate a person with whom he was better acquainted (target A) more positively than a person who he knew less well (target C). The ratings assigned by subject B

to his fellow participants tended to reveal that he did perceive target A more favorably than target C although this finding was much more pronounced in Experiment B than in Experiment A. In Experiment B, subject B felt that target A was more interesting, that he liked target A more, and that he would enjoy working more with target A. The analyses also indicated that subject B believed target A felt closer (or more intimate) to him than did target C, a finding which suggests that the experimental manipulation did result in a different level of intimacy between the interactants. In Experiment A, while subject B felt that target A was more interesting than target C, none of the other items was significant. In all, these results indicate that subject B perceived target A more favorably than target C. If we assume that a higher intimacy equilibrium point existed between subject B and target A than between subject B and target C, then it is not surprising that subject B rated target A more favorably than target C.

Experiment B involved the use of confederates who manipulated their gaze level toward subject B. Based upon an understanding of the affiliative-conflict theory and the findings of Efran and Broughton (1966), Efran (1968), and Fugita (1974), it was hypothesized that a speaker would reciprocate the approval (as defined in terms of gaze level) which previously had been directed at him by another person (the second half of Hypothesis B-1). Likewise, based upon Breed's (1972) research, it was expected that a person would reciprocate the gaze directed at him

by a person who is speaking to him (the second half of Hypothesis B-2). However, contrary to the predictions, none of the effects of gaze level was significant. Moreover, there was a nonsignificant trend for subject B to exhibit the inverse of the level of gaze directed towards him by target A. The results of these analyses would seem to cast doubt upon the assumption that greater amounts of gaze directed by target A at subject B is interpreted by B as being a sign of approval. However, when considering the ratings assigned by the subjects to the confederates, only one item was highly significant for the gaze level factor. Subjects felt that target A approved of them more in the high gaze level condition than in either of the two other conditions. Thus, it seems that the confederates' high gaze level was interpreted by the subject as a sign of approval.

The reason why the confederate's gaze level was not reciprocated is not exactly clear. One reason for the failure to confirm the hypothesis may be the status of the confederate. The reader will recall that Efran (1968) and Fugita (1974) manipulated both approval and confederate status, with the finding that freshman subjects directed more gaze at the approving confederate only when the confederate was portrayed as a high-status person (a senior) rather than as their peer. Thus, the present experiment might have yielded different results had the confederates been poctrayed as high-status persons. Another possible explanation may be that the high gaze condition was very uncomfortable for the subject. For

example, one subject who was the recipient of the high gaze did state during the debriefing that he was worried that target A was homosexual and had designs on him. An extended gaze from a virtual stranger can be anxiety producing (Ellsworth, Carlsmith, & Henson, 1972). The anxiety caused by target A's high gaze level may have increased subject B's avoidance forces, offsetting the approach forces due to approval, and thereby resulting in a lower intimacy equilibrium point. On the other hand, when the subject was the recipient of a low level of gaze, he may have felt rejected. In this case, the avoidance forces resulting from rejection may have been overshadowed by subject B's desire to elicit more approval from target A, thereby resulting in increased gaze directed at target A by subject B.

The results of the gaze level manipulation also may be explained by Argyle and Dean's (1965) compensation hypothesis. According to the hypothesis, once an intimacy equilibrium point has been established and then disrupted, the interactants will seek to re-establish it by modifying their behaviour accordingly. With regard to the present experiment, too much intimacy on one person's part may have been compensated for by the other person exhibiting less intimacy. Thus, the subject may have directed the least amount of gaze in the high gaze condition and the most amount of gaze in the low gaze condition. The compensation hypothesis predicts that this change would occur only once an intimacy equilibrium point has been established and then disrupted. However, the present study did not involve a change in an

established equilibrium point, but rather investigated the establishment of an intimacy equilibrium. The reader may recall that Schneider and Hansvick (1974) argue that previous studies purporting to test the compensation hypothesis actually failed to do so because they did not deal with changes in an established intimacy equilibrium point. Nonetheless, the results of those experiments generally tend to lend support to the predictions of the compensation hypothesis. One possible explanation for this is that the compensation hypothesis may be more general than Argyle and Dean (1965) have suggested. Perhaps instead of dealing exclusively with changes in an established equilibrium point, the hypothesis should be expanded to deal with changes in a "normative" equilibrium point. It is suggested that norms regarding the optimum degree of intimacy that people should show one another via various nonverbal cues may exist (see for example Goffman, 1963). In Experiment B, target A manipulated his gaze towards subject B at the onset of the interaction when all interactants were still unacquainted. In our culture, it is most appropriate to direct moderate gaze at one's coactors when they are basically strangers. Thus, the subjects may have viewed the very high or very low gaze of target A as violating those norms. Consequently, they may have adjusted their gaze in order to bring the intimacy equilibrium point between themselves and target A to a more acceptable level.

With regard to the viability of the affiliative-conflict theory, the results of the present study are in accord with

previous research; namely, some of the findings lend support to the theory, while others cast doubt upon it. Although the results of the level of acquaintance manipulation were in accord with predictions derived from the affiliative-conflict theory, the gaze level manipulation results were not. This finding, in conjunction with the contradictory results of other experiments, calls into question the generalizability of the affiliative-conflict theory. The theory in its present form tends to be too vague and all encompassing to adequately explain the complex factors influencing nonverbal behaviour. What is needed is a critical rethinking of the theory, with particular emphasis placed upon an elaboration of the various factors that may influence the situations in which the theory is a valid predictor of behaviour.

APPENDIX A

CONFEDERATE GAZE DATA

APPENDIX A

Percentage and Mean Frequency, Total Duration, and Mean Duration of Confederates' Gaze for Gaze Level, Confederate, and Target

			Frequency		Duration[a]		Mean Duration[a]	
			Subject B	Target C	Subject B	Target C	Subject B	Target C
High Gaze Level	Confederate	1	24.667 (85.1)[b]	4.333	95.250 (98.1)	1.867	3.833 (89.6)	0.443
	Confederate	2	24.667 (81.3)	5.667	149.400 (98.8)	1.767	8.723 (96.4)	0.327
	Confederate	3	18.333 (82.1)	4.000	137.833 (99.1)	1.233	9.607 (96.9)	0.310
	Confederate	4	25.500 (86.4)	4.000	111.275 (98.4)	1.800	5.730 (92.6)	0.455
Medium Gaze Level	Confederate	1	38.000 (52.1)	35.000	18.383 (51.6)	17.233	0.487 (49.5)	0.497
	Confederate	2	31.667 (54.3)	26.667	48.317 (44.2)	60.883	1.557 (40.0)	2.337
	Confederate	3	24.000 (60.0)	16.000	36.917 (58.7)	25.933	1.593 (49.0)	1.660
	Confederate	4	24.667 (52.1)	22.667	68.967 (50.5)	67.667	2.803 (47.8)	3.063
Low Gaze Level	Confederate	1	4.333 (13.0)	29.000	1.600 (1.8)	87.450	0.350 (10.2)	3.093
	Confederate	2	4.667 (19.7)	19.000	1.100 (0.8)	132.283	0.243 (2.9)	8.210
	Confederate	3	3.000 (10.7)	25.000	2.100 (3.5)	57.133	0.750 (23.9)	2.383
	Confederate	4	5.333 (12.1)	38.667	3.250 (2.8)	111.550	0.597 (16.8)	2.953

[a]Figures designate duration and mean duration in seconds.

[b]Figures in parentheses represent percentage of gaze directed at subject B.

APPENDIX B

POST-EXPERIMENTAL QUESTIONNAIRES

APPENDIX B-1

Evaluative Questionnaire [a]

1. Place an X next to the answer that best describes how you felt about each of your fellow participants for each of the following questions. Place an X in the left column for the person on your left and in the right column for the person on your right. Be sure to answer every question.

Person on Left	Person On Right	
		1. Intelligence (check one)
____	____	I believe that this person is very much above average in intelligence.
____	____	I believe that this person is above average in intelligence.
____	____	I believe that this person is slightly above average in intelligence.
____	____	I believe that this person is average in intelligence.
____	____	I believe that this person is slightly below average in intelligence.
____	____	I believe that this person is below average in intelligence.
____	____	I believe that this person is very much below average in intelligence.
		2. Personal Feelings (check one)
____	____	I feel that I would probably like this person very much.
____	____	I feel that I would probably like this person.
____	____	I feel that I would probably like this person to a slight degree.
____	____	I feel that I would probably neither particularly like nor particularly dislike this person.
____	____	I feel that I would probably dislike this person to a slight degree.
____	____	I feel that I would probably dislike this person.
____	____	I feel that I would probably dislike this person very much.

[a] Items were derived from parts of the Interpersonal Judge Scale developed by Byrne (1971).

Person on Left	Person on Right	
		3. Working Together in an Experiment (check one)
____	____	I believe that I would very much dislike working with this person in an experiment.
____	____	I believe that I would dislike working with this person in an experiment.
____	____	I believe that I would dislike working with this person to a slight degree.
____	____	I believe that I would neither particularly like nor particularly dislike working with this person in an experiment.
____	____	I believe that I would enjoy working with this person in an experiment to a slight degree.
____	____	I believe that I would enjoy working with this person in an experiment.
____	____	I believe that I would very much enjoy working with this person in an experiment.
		4. Interest (check one)
____	____	I thought that this person was very interesting.
____	____	I thought that this person was interesting.
____	____	I thought that this person was interesting to a slight degree.
____	____	I thought that this person was neither particularly interesting nor particularly boring.
____	____	I thought that this person was boring to a slight degree.
____	____	I thought that this person was boring.
____	____	I though that this person was very boring.
		5. Approval (check one)
____	____	I very much approved of this person.
____	____	I approved of this person.
____	____	I approved of this person to a slight degree.
____	____	I neither particularly approved nor particularly disapproved of this person.
____	____	I disapproved of this person to a slight degree.
____	____	I disapproved of this person.
____	____	I very much disapproved of this person.
		6. Intimacy (check one)
____	____	I feel that I would probably be very close to this person.
____	____	I feel that I would probably be close to this person.
____	____	I feel that I would be slightly close to this person.
____	____	I feel that I would be neither particularly close nor particularly distant to this person.
____	____	I feel that I would be slightly distant to this person.
____	____	I feel that I would be very distant to this person.

II. Place an X next to the answer that best describes how you feel each of your fellow participants felt about you.

Person on Left	Person on Right	
		7. Interest (check one)
____	____	He thought that I was very interesting.
____	____	He thought that I was interesting.
____	____	He thought that I was interesting to a slight degree.
____	____	He thought that I was neither particularly interesting nor particularly boring.
____	____	He thought that I was boring to a slight degree.
____	____	He thought that I was boring.
____	____	He thought that I was very boring.
		8. Approval (check one)
____	____	He very much approved of me.
____	____	He approved of me.
____	____	He approved of me to a slight degree.
____	____	He neither particularly approved nor particularly disapproved of me.
____	____	He disapproved of me to a slight degree.
____	____	He disapproved of me.
____	____	He very much disapproved of me.
		9. Intimacy (check one)
____	____	He probably felt very close to me.
____	____	He probably felt close to me.
____	____	He probably felt slightly close to me.
____	____	He probably felt neither particularly close nor particularly distant to me.
____	____	He probably felt slightly distant to me.
____	____	He probably felt distant to me.
____	____	He probably felt very distant to me.

III. For each question, place an X next to the answer that best describes how you felt during the interaction.

1. Disgusted (check one)

____ Not at all disgusted.
____ Slightly disgusted.
____ Moderately disgusted.
____ Disgusted.
____ Extremely disgusted.

2. Anxious (check one)

_____ Not at all anxious.
_____ Slightly anxious.
_____ Moderately anxious.
_____ Anxious.
_____ Extremely anxious.

3. Bored (check one)

_____ Extremely bored.
_____ Bored.
_____ Moderately bored.
_____ Slighty bored.
_____ Not at all bored.

4. Uneasy (check one)

_____ Not at all uneasy.
_____ Slightly uneasy.
_____ Moderately uneasy.
_____ Uneasy.
_____ Quite uneasy.

IV. Please answer the following additional questions.

1. How well did you know the person on your left prior to the experiment?

_____ A close friend.
_____ A casual acquaintance.
_____ Have seen him around but have never spoken to him.
_____ Never saw him before.

2. How well did you know the person on your right prior to the experiment?

_____ A close friend.
_____ A casual acquaintance.
_____ Have seen him around but have never spoken to him.
_____ Never saw him before.

APPENDIX B-2

Suspicions about Experiment Questionnaire

Did you hear anything about this experiment from anyone prior to your participation in the experiment?

Yes_____ No_____. If yes, what have you heard?

What do you think we were measuring in this experiment?

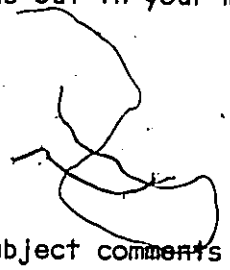
APPENDIX B-3

Awareness of Confederate's Gaze Level Questionnaire

What were your reactions to what went on during the interaction?

While speaking and while listening, was there anything in particular about their behaviour that you noticed?

During the interaction, what is the one thing about each one that most stands out in your mind? Is there anything else?



(If the subject comments specifically about one of the confederate's visual behaviour, respond:)

Oh, really! That's interesting. I didn't notice it while I was watching. How do you interpret that? Do you think it had any effect upon what you did during the interaction?

APPENDIX C

RAW DATA FOR

EXPERIMENT A

APPENDIX C-I

Frequency and Total Duration of Individual Gaze While Speaking and Listening for Target and Time

SPEAKING

	Frequency						Duration[a]					
	1st Period		2nd Period		3rd Period		1st Period		2nd Period		3rd Period	
Subject	Tar. A	Tar. C	Tar. A	Tar. C	Tar. A	Tar. C	Tar. A	Tar. C	Tar. A	Tar. C	Tar. A	Tar. C
1	10	7	7	14	6	10	15.00	12.75	13.00	18.20	11.15	17.55
2	6	0	4	1	8	2	8.70	0.00	10.20	0.25	15.80	0.40
3	18	12	15	8	14	6	18.40	7.65	17.00	4.10	18.15	3.75
4	5	0	10	1	5	3	2.40	0.00	6.25	0.30	2.50	1.20
5	11	0	4	1	2	0	9.00	0.00	3.50	0.10	2.50	0.00
6	3	0	1	0	0	0	1.50	0.00	0.15	0.00	0.00	0.00
7	1	2	0	1	0	0	0.60	0.60	0.00	1.10	0.00	0.00
8	2	7	2	3	3	10	1.30	3.60	0.80	1.30	1.00	3.35
9	0	0	1	1	0	0	0.00	0.00	0.40	0.35	0.00	0.00
10	2	1	1	2	7	5	0.50	0.35	0.40	0.30	5.75	1.50
11	7	1	1	0	1	1	5.80	0.70	0.55	0.00	1.05	0.30
12	1	0	1	0	1	0	0.45	0.00	0.40	0.00	0.40	0.00
13	8	2	7	2	5	1	3.70	1.70	2.85	0.80	3.75	0.40
14	8	2	3	6	3	4	16.45	1.85	7.30	5.05	2.55	3.35

LISTENING

Subject	Frequency						Duration [a]					
	1st Period		2nd Period		3rd Period		1st Period		2nd Period		3rd Period	
	Tar. A	Tar. C	Tar. A	Tar. C	Tar. A	Tar. C	Tar. A	Tar. C	Tar. A	Tar. C	Tar. A	Tar. C
1	15	0	12	0	11	0	21.80	0.00	24.20	0.00	19.50	0.00
2	4	0	2	0	4	0	44.55	0.00	44.70	0.00	41.95	0.00
3	5	2	7	3	8	3	40.60	1.60	41.00	2.10	39.70	1.80
4	4	0	7	0	10	0	4.20	0.00	17.50	0.00	23.90	0.00
5	10	10	13	1	6	0	33.55	0.35	23.00	0.20	27.60	0.00
6	6	0	9	3	9	1	28.10	0.00	19.90	1.70	14.80	0.65
7	9	4	11	1	14	3	35.80	1.20	33.45	0.70	22.30	1.65
8	6	0	7	1	7	1	25.70	0.00	36.70	0.60	27.80	0.55
9	10	0	10	0	10	0	15.40	0.00	15.55	0.00	8.55	0.00
10	5	4	5	0	4	1	4.00	1.30	4.55	0.00	4.05	0.45
11	4	0	4	0	8	0	36.40	0.00	32.00	0.00	25.70	0.00
12	6	1	8	2	8	3	39.30	0.20	30.05	0.65	8.40	1.90
13	14	1	16	0	11	0	19.60	0.40	14.00	0.00	7.90	0.00
14	8	2	6	2	10	3	36.50	0.90	33.30	0.85	31.70	2.25

[a]Figures designate duration in seconds.

APPENDIX C-2

Ratings by Item and Target

Subject	Item 1[a] Tar. AA	Item 1[a] Tar. C	Item 2 Tar. A	Item 2 Tar. C	Item 3 Tar. A	Item 3 Tar. C	Item 4 Tar. A	Item 4 Tar. C	Item 5 Tar. A	Item 5 Tar. C	Item 6 Tar. A	Item 6 Tar. C	Item 7 Tar. A	Item 7 Tar. C	Item 8 Tar. A	Item 8 Tar. C	Item 9 Tar. A	Item 9 Tar. C
1	4	3	3	2	4	5	5	4	2	2	4	3	2	2	4	4	7	6
2	2	4	2	4	7	4	2	4	2	4	3	4	1	2	2	2	2	2
3	4	3	4	3	4	5	-[b]	2	4	2	4	4	3	3	3	3	4	4
4	4	4	2	2	4	4	3	3	2	2	4	4	3	3	2	2	4	4
5	4	4	2	3	5	5	3	4	2	2	4	4	3	3	2	3	4	4
6	4	4	4	4	5	4	3	4	3	4	4	4	4	4	4	4	5	5
7	4	4	2	2	4	4	1	3	2	2	4	3	2	3	2	2	4	4
8	2	3	3	2	5	6	2	2	2	1	3	2	5	4	3	2	4	4
9	2	4	2	3	4	6	1	3	1	2	3	3	4	3	3	2	4	3
10	4	4	3	3	4	4	3	4	2	2	6	6	2	2	2	2	4	4
11	2	2	2	2	6	6	4	3	2	2	4	3	4	4	3	3	4	3
12	3	3	2	2	6	6	1	4	2	4	2	2	2	2	2	2	4	4
13	3	3	3	3	3	4	2	4	2	1	4	4	5	5	4	4	4	4
14	4	4	3	4	4	4	3	4	2	4	5	5	3	3	4	4	4	4

[a]The specific item content can be found in Appendix B-1.

[b]Indicates item left blank by the respondent.

APPENDIX D

RAW DATA FOR

EXPERIMENT B

APPENDIX D-1

Frequency and Total Duration of Individual Gaze
While Speaking and Listening for Gaze Level, Target, and Time

SPEAKING

High Gaze Level

Subject	Frequency						Duration[a]					
	1st Period		2nd Period		3rd Period		1st Period		2nd Period		3rd Period	
	Tar. A	Tar. C	Tar. A	Tar. C	Tar. A	Tar. C	Tar. A	Tar. C	Tar. A	Tar. C	Tar. A	Tar. C
1	4	6	3	2	2	2	2.20	3.95	1.30	1.50	1.50	0.60
2	5	1	1	4	1	2	7.90	0.50	0.60	8.00	0.70	2.30
3	5	0	4	0	2	1	2.10	0.00	4.05	0.00	0.95	0.60
4	5	1	6	1	6	3	3.00	0.30	6.50	0.50	7.05	1.20
5	5	2	3	1	3	2	2.00	0.55	3.50	0.70	1.60	0.65
6	0	0	7	0	2	0	0.00	0.00	6.40	0.00	1.90	0.00
7	5	0	5	0	1	0	4.00	0.00	3.85	0.00	0.70	0.00
8	5	2	5	3	5	2	4.80	2.45	3.70	1.25	6.55	2.30
9	6	6	10	6	10	6	14.00	5.45	11.70	5.40	16.20	7.80
10	0	1	2	0	2	0	0.00	1.25	2.25	0.00	2.75	0.00
11	3	7	5	9	11	16	1.90	3.70	3.25	9.20	8.70	18.20
12	3	2	1	0	1	1	1.75	0.80	0.40	0.00	0.50	0.50

Medium Gaze Level

	Frequency						Duration[a]					
	1st Period		2nd Period		3rd Period		1st Period		2nd Period		3rd Period	
Subject	Tar. A	Tar. C	Tar. A	Tar. C	Tar. A	Tar. C	Tar. A	Tar. C	Tar. A	Tar. C	Tar. A	Tar. C
1	11	5	4	4	8	8	3.45	0.20	1.90	1.65	6.00	3.75
2	9	0	7	3	5	7	7.50	0.00	4.80	2.00	5.10	5.90
3	8	2	9	1	9	2	8.35	2.90	7.15	0.80	6.15	2.20
4	5	2	5	1	6	2	2.50	0.70	2.80	0.50	2.95	0.70
5	0	0	1	0	0	0	0.00	0.00	0.90	0.00	0.00	0.00
6	6	2	6	1	3	2	19.10	0.75	12.10	0.20	8.70	1.80
7	7	4	6	5	6	6	16.90	6.20	13.15	4.65	9.30	7.60
8	4	4	2	3	5	4	2.70	3.50	1.65	2.45	3.45	2.50
9	5	3	5	3	6	5	6.90	3.90	9.20	3.70	11.20	5.25
10	3	1	3	2	2	2	1.65	0.40	1.55	1.10	0.95	1.00
11	5	12	3	10	4	8	3.30	16.35	2.05	11.80	6.15	12.95
12	2	4	8	1	6	2	3.45	6.05	10.00	0.60	6.10	2.05

Low Gaze Level

Subject	Frequency						Duration[a]					
	1st Period		2nd Period		3rd Period		1st Period		2nd Period		3rd Period	
	Tar. A	Tar. C	Tar. A	Tar. C	Tar. A	Tar. C	Tar. A	Tar. C	Tar. A	Tar. C	Tar. A	Tar. C
1	6	3	6	0	5	1	4.35	1.45	2.65	0.00	3.85	0.50
2	1	1	3	0	7	0	0.50	2.30	2.35	0.00	8.90	0.00
3	6	2	2	0	1	0	3.75	0.70	0.75	0.00	0.35	0.00
4	10	0	9	1	7	1	19.45	0.00	23.50	0.60	19.90	1.10
5	6	2	1	8	5	5	10.40	1.00	0.90	12.40	4.90	11.40
6	3	5	9	3	7	5	1.15	0.16	6.10	6.00	5.60	6.15
7	0	0	0	0	2	1	0.00	0.00	0.00	0.00	0.80	0.40
8	9	6	7	5	10	6	11.40	5.50	13.80	4.20	23.20	5.65
9	5	6	14	0	9	0	11.20	6.40	12.95	0.00	12.00	0.00
10	9	6	5	4	3	2	9.80	3.65	6.50	5.40	5.50	2.90
11	3	8	4	6	3	4	2.50	8.80	4.55	5.60	2.00	5.10
12	4	7	5	5	1	5	2.45	8.85	4.40	5.90	7.50	10.60

[a]Figures designate duration in seconds.

LISTENING

High Gaze Level

	Frequency						Duration[a]					
	1st Period		2nd Period		3rd Period		1st Period		2nd Period		3rd Period	
Subject	Tar. A	Tar. C	Tar. A	Tar. C	Tar. A	Tar. C	Tar. A	Tar. C	Tar. A	Tar. C	Tar. A	Tar. C
1	11	1	3	1	4	0	33.20	0.20	25.00	1.00	34.10	0.00
2	3	0	3	0	3	0	39.75	0.00	41.20	0.00	43.90	0.00
3	9	1	6	0	8	1	23.00	0.50	31.25	0.00	15.80	1.25
4	9	1	8	1	7	0	31.20	0.40	14.05	1.45	35.35	0.00
5	5	0	6	0	4	0	6.05	0.00	8.30	0.00	3.65	0.00
6	7	0	3	0	2	0	34.00	0.00	43.10	0.00	41.80	0.00
7	6	0	2	0	3	0	5.95	0.00	1.10	0.00	3.25	0.00
8	5	1	3	0	5	0	34.05	0.40	40.30	0.00	37.50	0.00
9	15	6	11	0	6	0	29.70	7.45	32.35	0.00	31.60	0.00
10	3	0	4	0	2	0	14.30	0.00	17.20	0.00	5.30	0.00
11	13	0	8	0	11	1	20.60	0.00	11.15	0.00	19.20	1.00
12	7	1	9	0	8	0	40.80	0.40	27.00	0.00	30.20	0.00

Medium Gaze Level

	Frequency						Duration[a]					
	1st Period		2nd Period		3rd Period		1st Period		2nd Period		3rd Period	
Subject	Tar. A	Tar. C	Tar. A	Tar. C	Tar. A	Tar. C	Tar. A	Tar. C	Tar. A	Tar. C	Tar. A	Tar. C
1	8	0	10	0	12	0	30.40	0.00	25.60	0.00	30.80	0.00
2	15	2	6	1	13	0	20.55	1.20	18.90	0.50	13.40	0.00
3	6	0	3	0	3	0	37.95	0.00	41.80	0.00	39.65	0.00
4	4	1	6	0	8	1	21.10	0.25	13.95	0.00	11.70	0.40
5	4	0	5	1	4	0	28.20	0.00	12.70	0.40	14.10	0.00
6	6	0	7	1	8	0	20.75	0.00	18.00	0.55	20.70	0.00
7	4	0	2	0	5	1	20.50	0.00	14.00	0.00	8.05	0.30
8	5	0	4	0	4	0	35.60	0.00	39.00	0.00	34.30	0.00
9	11	0	2	0	2	0	45.00	0.00	44.80	0.00	44.80	0.00
10	16	0	10	0	9	0	33.50	0.00	30.75	0.00	25.65	0.00
11	8	4	7	2	9	3	35.90	1.90	36.15	1.00	26.35	2.50
12	2	0	4	0	7	0	9.60	0.00	9.10	0.00	14.60	0.00

Low Gaze Level

	Frequency						Duration[a]					
	1st Period		2nd Period		3rd Period		1st Period		2nd Period		3rd Period	
Subject	Tar. A	Tar. C	Tar. A	Tar. C	Tar. A	Tar. C	Tar. A	Tar. C	Tar. A	Tar. C	Tar. A	Tar. C
1	4	0	13	0	13	0	35.25	0.00	21.00	0.00	19.80	0.00
2	9	0	6	0	3	0	37.80	0.00	20.50	0.00	42.40	0.00
3	5	0	4	0	5	0	12.80	0.00	6.90	0.00	6.80	0.00
4	9	1	10	0	7	0	35.40	0.50	26.30	0.00	32.95	0.00
5	9	1	5	4	6	0	25.05	2.80	19.55	3.55	18.85	0.00
6	5	0	2	0	7	0	40.40	0.00	43.05	0.00	42.40	0.00
7	3	0	3	0	5	0	24.65	0.00	25.05	0.00	26.95	0.00
8	2	0	1	0	1	0	45.00	0.00	45.00	0.00	45.00	0.00
9	4	0	10	0	10	0	40.60	0.00	40.15	0.00	38.60	0.00
10	8	1	5	0	7	2	28.15	0.40	20.35	0.00	22.95	0.90
11	4	0	9	1	1	0	25.30	0.00	24.35	1.25	22.30	0.00
12	8	0	5	0	3	0	15.95	0.00	22/05	0.00	20.60	0.00

[a]Figures designate duration in seconds.

APPENDIX D-2

Ratings for Gaze Level Condition, Item, and Target

High Gaze Level

	Item 1[a]		Item 2		Item 3		Item 4		Item 5		Item 6		Item 7		Item 8		Item 9	
Subject	Tar. A	Tar. C	Tar. A	Tar. C	Tar. A	Tar. C	Tar. A	Tar. C	Tar. A	Tar. C	Tar. A	Tar. C	Tar. A	Tar. C	Tar. A	Tar. C	Tar. A	Tar. C
1	4	4	4	4	6	5	5	4	5	4	5	5	4	4	5	4	5	5
2	1	2	2	3	5	4	1	3	2	4	2	4	2	3	2	4	3	4
3	2	4	2	4	6	4	1	4	2	4	3	5	4	4	3	3	4	4
4	4	5	2	2	5	5	2	2	2	2	3	2	2	2	2	2	4	4
5	3	4[b]	1	3	7	3	2	4	2	3	2	4	3	3	2	2	4	4
6	3	-	4	-	4	-	2	-	5	-	5	-	3	4	-	-	5	5
7	3	3	1	2	6	6	1	4	2	4	3	3	3	3	2	2	4	4
8	2	2	2	4	6	4	2	4	2	4	3	4	2	2	2	2	3	4
9	4	4	2	2	6	6	1	1	1	1	2	3	2	2	2	2	2	3
10	1	4	2	2	7	7	1	4	1	4	2	4	4	4	2	2	4	4
11	4	2	2	1	6	7	3	1	2	1	3	2	2	1	2	2	3	3
12	3	4	2	3	2	2	1	3	2	3	2	4	2	2	3	3	3	4

Medium Gaze Level

Subject	Item 1[a]		Item 2		Item 3		Item 4		Item 5		Item 6		Item 7		Item 8		Item 9	
	Tar. A	Tar. C	Tar. A	Tar. C	Tar. A	Tar. C	Tar. A	Tar. C	Tar. A	Tar. C	Tar. A	Tar. C	Tar. A	Tar. C	Tar. A	Tar. C	Tar. A	Tar. C
1	4	4	3	4	6	5	3	4	2	2	4	5	3	3	4	4	4	4
2	4	3	4	4	7	4	2	4	3	4	4	4	4	4	2	4	4	4
3	3	4	2	4	2	3	2	3	2	2	3	3	2	4	4	4	4	5
4	4	4	2	4	6	4	2	4	2	4	3	4	3	4	4	4	4	5
5	3	3	2	2	5	4	2	3	2	2	2	2	3	3	3	3	4	4
6	4	2	4	3	7	7	3	2	2	2	5	4	4	2	4	4	5	3
7	4	4	3	3	5	4	2	4	2	2	4	4	4	4	4	4	4	4
8	2	2	1	2	6	6	2	–[b]	1	–	3	–	3	–	2	–	3	–
9	4	5	1	5	4	4	3	6	4	4	3	5	3	5	4	4	3	6
10	3	3	3	3	3	3	2	2	2	2	5	5	3	3	3	3	5	5
11	3	3	2	3	5	4	4	1	2	2	4	4	4	4	4	4	3	4
12	3	3	1	2	6	6	1	1	2	2	3	4	4	4	4	4	4	5

Low Gaze Level

Subject	Item 1[a] Tar. A	Item 1 Tar. C	Item 2 Tar. A	Item 2 Tar. C	Item 3 Tar. A	Item 3 Tar. C	Item 4 Tar. A	Item 4 Tar. C	Item 5 Tar. A	Item 5 Tar. C	Item 6 Tar. A	Item 6 Tar. C	Item 7 Tar. A	Item 7 Tar. C	Item 8 Tar. A	Item 8 Tar. C	Item 9 Tar. A	Item 9 Tar. C
1	3	4	2	2	6	6	2	2	2	2	6	6	3	3	2	2	7	7
2	4	2	2	3	6	5	3	4	2	4	4	5	3	4	2	4	3	3
3	5	4	2	3	6	6	1	4	1	2	3	6	4	4	2	2	2	5
4	2	2	2	3	6	5	1	2	1	1	1	4	3	2	1	1	2	3
5	3	2	2	2	4	6	2	2	2	2	4	4	4	5	4	4	4	5
6	1	2	1	2	7	7	3	2	1	1	1	1	2	3	2	2	1	1
7	3	3	2	4	6	5	1	3	1	2	2	4	2	2	2	3	2	4
8	4	2	3	2	4	4	2	2	2	2	6	5	3	2	4	4	4	4
9	2	2	1	1	5	5	1	1	1	1	4	4	5	5	4	4	4	6
10	4	4	2	2	4	4	2	4	4	4	4	4	4	4	4	4	4	4
11	3	4	2	2	4	5	3	4	2	4	4	4	3	3	4	4	3	4
12	4	4	2	2	3	4	3	4	2	2	2	4	2	3	2	3	3	4

[a]The specific item content can be found in Appendix B-1.

[b]Indicates item left blank by the respondent.

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