ABSTRACT
                As a situational precursor of embarrassment, this
study required college freshmen to answer either innocuous or body
image questions asked by an opposite sex confederate, who was gazing
directly into their eyes. College freshmen were chosen because they
are in the process of assimilating physical changes and new roles
apart from the familiar social milieu of home and because they have
already evidenced concern about their body images and how they
present themselves to the opposite sex. Hypotheses tested were: (1).
the behaviors correlated with embarrassment would indicate an
adjustive coping response; (2) low self-concept subjects would show
more embarrassment than high self-concept subjects; and (3) subjects
would show more embarrassment to questions about those body parts
with which they were dissatisfied and rated as being of subjective
importance. Raters took behavioral measures behind a one-way mirror,
while a third rater measured response time. Ratings indicated that
response latency, response time, fidgeting, eye contact, redness, and
laughter were embarrassment-producing measures and were the most
reliable assessors of the emotion. Hypotheses (2) and (3) were not
supported. (Author/LAA)

Embarrassment and Its Relationship to the Body

Image and Self-Concept of the College Freshman

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(Paper presented at the annual meeting of the Midwestern Psychological Associa-
tion, Cleveland, Ohio, May, 1972)

Theoretical explanations of embarrassment have been proposed from four

schools of psychology. Compelling arguments regarding the situational determi-

nants of embarrassment, its etiology, and its effect on the individual have been

presented from these four schools. However, few of these ideas have been pre-

sented as testable hypotheses. Because the existential and interpersonal ap-

proaches present more compelling arguments, the following definition of em-

barrassment has been derived from these two theories.

During a social interaction each individual attempts to act in accordance

with the roles and expectations defined by that situation and also in accordance

with his self-concept, the manner in which he perceives himself. Each individual

also defines for himself certain attributes which he feels are desirable to

possess, his ego-ideal. The discrepancy the individual perceives between his

self-concept and ego-ideal is called self-concept discrepancy or level of self-

concept. Embarrassment occurs during a social interaction when the individual

perceives that the self he wishes to present is discrepant from the self he

actually does present. A less desirable aspect of his self is exposed and embar-

rassment occurs.

The above account is a portrayal of the situational precursor of embarrass-

ment, and its effect upon the individual's self-perception. However,

embarrassment is an emotion and as such elicits feelings and observable signs. Table 1 displays the behaviors which are used to define embarrassment.

For the situational precursor of embarrassment college freshmen were required to answer either innocuous or body image questions asked by an opposite sex confederate, who was gazing directly into their eyes. Because the body image is an integral part of one's identity, a situation where an undesirable aspect is exposed is optimal for eliciting embarrassment. College freshmen were chosen because they are in the process of assimilating physical changes and new roles apart from the familiar social milieu of home. Also, college freshmen have already evidenced concern about their body images and how they present themselves to the opposite sex (Sattler, 1965).

From the preceding definition of embarrassment, the following hypotheses were derived: 1) The behaviors correlated with embarrassment would indicate an adjustive coping response, i.e., they are face-saving maneuvers. 2) Low self-concept subjects would show more embarrassment than high self-concept subjects. 3) Subjects would show more embarrassment to questions about those body parts with which they were dissatisfied and rated as being of subjective importance.

Method

College freshmen, 102 males and 153 females completed both a body image scale, Table 2, and a self-concept scale, Table 3 (Rosen & Ross, 1968). A discrepancy score between where the individual indicated that he perceived himself falling on a dimension of the self-concept scale and where he would like to fall, his ego ideal, was taken to derive a measure of self-concept level.

Twenty males and twenty females falling at the highest and lowest ends of the self-concept scale were telephoned and asked to participate in a study

researching interpersonal interaction between opposite-sex freshmen. Because
some subjects refused to come, the final N equaled 60, 15 in each group.

The subjects were told the purpose of the experiment--to investigate
how college freshmen react to a series of questions about themselves. While
electrodes were attached to their thumbs, the subject and the confederate were
informed that their pulse rates were to be monitored and were given an ex-
planation of how GSR functioned as a lie detector test. However, pulse rates
were never taken as the purpose of this procedure was to allow the confederate
to control a hidden button with which he monitored eye contact.

In order to establish rapport and commonality, the pair was told that
they were brought together because of the manner in which they both answered the
questionnaire and were given a few minutes alone together. Then, the confederate
was given a randomized set of embarrassing or body image questions (Table 4)
and innocuous questions (Table $\overset{5}{4}$).

The raters took behavioral measures behind a one-way mirror, while a
third rater measured response time. The raters were unaware of the subject's
self-concept group and of the question being asked.

The measures (Table 1) except for the last three were responses given
by 200 Introductory Psychology students to the questions of what happens to
oneself when one becomes embarrassed and how one knows when another person is
embarrassed (Kaplan & Marlatt, 1970). Redness of the face was chosen as an
obvious correlate of embarrassment. Face pales was included as an anxiety
response to see if anxiety and embarrassment could be distinguished. The last
three measures, refusal to answer questions, refusal to answer a specific
question, and retraction of previous statement were from a tape recording of
the interview and were included as mechanisms a S might use to negate the

situation. By refusing to answer questions or retracting the truth value of his statement, the S has succeeded in removing himself from the situation or has denied its validity.

While the measures in Table 1 were either rated for their presence or absence during a question interval, three other continuous measures were taken--eye contact, response latency, and the amount of time spent answering a question, response time.

Response latency was predicted to be longer and response time shorter for embarrassing than innocuous questions. Because the responses to embarrassing questions were threatening, the subject was expected to pause as he decided upon the least anxiety-provoking answer, and then give a short response.

The confederate monitored the subject's eye contact. After reading each question, the confederate looked into the S's eyes and pressed the hidden button as long as the subject was looking at him. Between questions the pair was instructed not to speak, and the confederate did not look at the subject.

After the interview the subject was informed of the true purpose of the experiment, was assured that confidentiality would be maintained, and was asked to indicate those questions which he thought were embarrassing as a means of validating the rating scale.

Results

Some of the behaviors occurred so infrequently that their use in separate analyses could not be justified. Face pales, face hides, etc. were combined into the category "other visual behaviors"; and loss of speech, mumbling, etc. were combined into the category "other auditory behavior."

This yielded eight separate measures of embarrassment.

Separate 2 X 3 analyses of variance utilizing the factors sex, self-

concept, and emt·rrassment, meaning the body image versus innocuous questions were performed for each of the eight measures   As indicated in Table 6, the following measures yielded significant differences ($p < .01$) in subjects' responses to the two types of questions: response latency, response time, fidgeting, redness, laughter, and other auditory. Both eye contact and other visual were in the appropriate direction but did not reach significance.

Because a portion of the subjects did not indicate that they ex- perienced embarrassment during all of the body image questions but did rate some of the innocuous questions as embarrassing,another set of 2 X 3 analyses of variance were performed on each of the eight response measures. The em- barrassment factor was divided between the questions the subject rated as em- barrassing and those that he did not rate as embarrassing. Subjects who rated none of the questions embarrassing were dropped from the analysis.

Table 7 indicated that the following measures yielded a significant embarrassment effect ($p < .01$): response latency, eye contact, response time, fidgeting, redness and laughter. Because the findings for eye contact were complex, these results, as well as an interpretation of the findings, appear in Appendix A.

The previous analyses showed that certain behaviors could be used as indices of embarrassment. Because uncertainty remained whether these measures were variable within subjects or general measures of embarrassment, the re- sponse measures were correlated with one another. As can be seen from Table 8, both the behaviors occurring: during the body image questions, the embarrassment analysis, and a change score resulting from the embarrassment manipulation, the difference analysis revealed that the measures indicative of embarrassment also tended to correlate with one another.

Low self-concept subjects were expected to show more embarrassment than high self-concept subjects. The previous analyses of variance did not support this hypothesis.

Subjects were expected to become more embarrassed about those aspects of their body image with which they were dissatisfied and rated as being important. To test for the presence of a relation between body image and embarrassment, male and female subjects were separately divided into high and low body image groups. A t-test revealed no relation between body image and embarrassment.

Discussion

The measures response latency, response time, fidgeting, eye contact, redness, and laughter indicated that embarrassment was produced and were
the most reliable assessors of the emotion. For both embarrassment as experimentally defined by the questions and for the subjects' ratings of their experience, these measures produced significant results, with response time, response latency, and eye contact appearing to function together, i.e., their correlations were significant. These three measures might indicate an adjustive coping response to embarrassment.

Subjects had longer response latencies and shorter response times for embarrassing than innocuous questions. When confronted with an embarrassing question, the subject may have spent time deciding upon a response which enabled him to avoid discussing the body part by giving a short answer. Perhaps, the subject found himself in a situation where he was in danger of exposing his feelings of inadequacy regarding that body part and wanted to avoid abdicating his role as someone who sustains encounters (Goffman, 1956). Therefore, he structured the encounter in such a way that he could expose

the least amount of discrepancy between himself as a self-confident person who
easily accepts inadequacies of body image and a person who feels embarrassed
discussing that body dimension.

Subjects fidgeted more during innocuous than embarrassing questions. When
asked a threatening body image question, the subject froze, caught by the
immobility of embarrassment (Lynd, 1961).

Blushing, an involuntary response, occurred significantly more often during
embarrassing than the innocuous questions and was supportive evidence that
the interview conditions generated embarrassment.

Laughter was more difficult to interpret. People emit nervous giggles
when embarrassed, but they also laugh when experiencing something as funny.
Conceivably, both factors were operative in the present experiment. The
questions were-not the kind that often appear in a "scientific laboratory";
and thus they were rather humorous in context. On the other hand, Ss were
most certainly threatened when they found themselves describing their
legs, penis, or breast to a person of the opposite sex who was looking directly
into their eyes.

Although eye contact was correlated with the other measures, the inter-
actions were complex. A discussion of these results appears in Appendix A.

The non-significant relationship between subjects' ratings of embarrass-
ment and measures of embarrassment may be indicative of a lack of validity for
the body image scale.

During the interview condition, the subjects were told that their GSR was
being monitored. Since it was described in terms of a lie detector test, the
Ss may have truthfully rated the questions on which they were embarrassed. No
such demands were present during the completion of the body image scale, and
because subjects were embarrassed, they probably denied some of their true

feelings regarding specific body parts. Modigliana (1966) found that embarrassment occurred as a result of situational loss of self-esteem, even when others were not present. Another possible explanation is the subjects were reacting to societal demands against verbalizing too much emphasis on physical beauty, e.g., many subjects rated all body dimensions as not important. However, during the interview condition, the subjects thought that their physiological reactions were being monitored and may have complied with the experimental demand to express their "true feelings."

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Embarrassment in Relation to the Body Image and Self-Concept

of the College Freshman

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MPA, 1972

Table 1

Behavioral Rating Scale

Please check appropriate items _____

Real Question Number ·   1 2 3 4 5 6 7 8 9 10 11 12 13 14

Sequence Number   _____

<u>Behavior Ratings</u>

Face
    pale
    redness
    hides

Bites fingers or nails

Bites lips

Fidgeting

Shifts weight

<u>Tape Ratings</u>

Speech changes
    loss of speech
    mumbling
    incoherence
    stuttering
    swearing

Laughter

Refusal to answer questions

Refusal to answer specific questions

Retraction of previous statement

Reliability of behavioral ratings:

a) $\dfrac{\#\text{same responses}}{\#\text{same} + \text{different responses}} = .592$

b) $1.00 - \dfrac{\#\text{diff. resps.}}{\#\text{possible responses}} = .968$

Reliability of Tape Ratings = 1.00

Table ?

Body-Image Items

Facial complexion
Ears
Chest
Profile
Distribution of weight
Eyes
Height
Ankles
Waist
Arms
Shape of legs
General appearance

Hips
Width of shoulders
Arms
Feet
Mouth
Neck
Chin
Hair texture
Body build
Hair color
Thighs
Knees
Breast (female)
Penis size (male)

Table ?

Self-Concept Items

Mature-Immature
Masculine-Feminine
Independent-Dependent
Intolerant-Tolerant
Inhibited-Uninhibited
Successful-Unsuccessful
Secure-Insecure
Intelligent-Not Intelligent
Range of Interests Wide-Range of
    Interests Narrow

Self Confident-Doubtful
Anti-social
Unfriendly-Friendly
Submissive-Dominant
Capable-Not Capable
Individualistic-Conforming
Withdrawn-Outgoing
Timid-Aggressive

APPENDIX C

Questionnaire - Female

Issues

1. What do you think of the university's new president?

2. What are the differences between the Democratic and Republican parties?

3. How would you describe your home town?

4. How large was your high school?

5. What do you think of midiskirts?

6. Do you think that Nixon is responsible for the rioting on campuses?

7. Do you think that a college education should be available to everyone who wants one? Please explain your answer.

Body Image

1. How would you describe your car? [?]

2. How often did your face have pimples on it and how do you feel about your complexion?

3. Describe your legs.

4. Do you think that you have a fat stomach?

5. At what age did you begin to menstruate?

6. Describe your teeth.

7. How would you characterize your breasts?

Table 6

Questionnaire - Male

Innocuous

1. What do you think of the university's new president?

2. What are the differences between the Democratic and Republican parties?

3. How would you describe your home town?

4. How large was your high school?

5. What do you think of midiskirts?

6. Do you think that Nixon is responsible for the rioting on campuses?

7. Do you think that a college education should be available to everyone who wants one? Please explain your answer.

Body Image

1. How would you describe your nose?

2. How often does your face have pimples on it and how do you feel about your complexion?

3. How would you characterize the amount of body hair you have in relation to other college freshmen?

4. Do you think you have fat lips?

5. At what age did you have your first ejaculation?

6. Describe your teeth.

7. How would you characterize your penis?

Table 61

Embarrassment vs. Innocuous Analysis

mean Values of Frequency

.85
.80
.75
.70
.65
.60
.55
.50
.65
.60
.35
.30
.25
.20
.15
.10

Resp.   Eye   Fidget-   Resp.   Redness   Other   Laugh-   Other
Lat.   Contact   ing   Time   Visual   ter   Auditory

1Resp. time and resp. latency means have been adjusted to conform to scale values.

▨ Embarrassing Questions

☐ Innocuous Questions
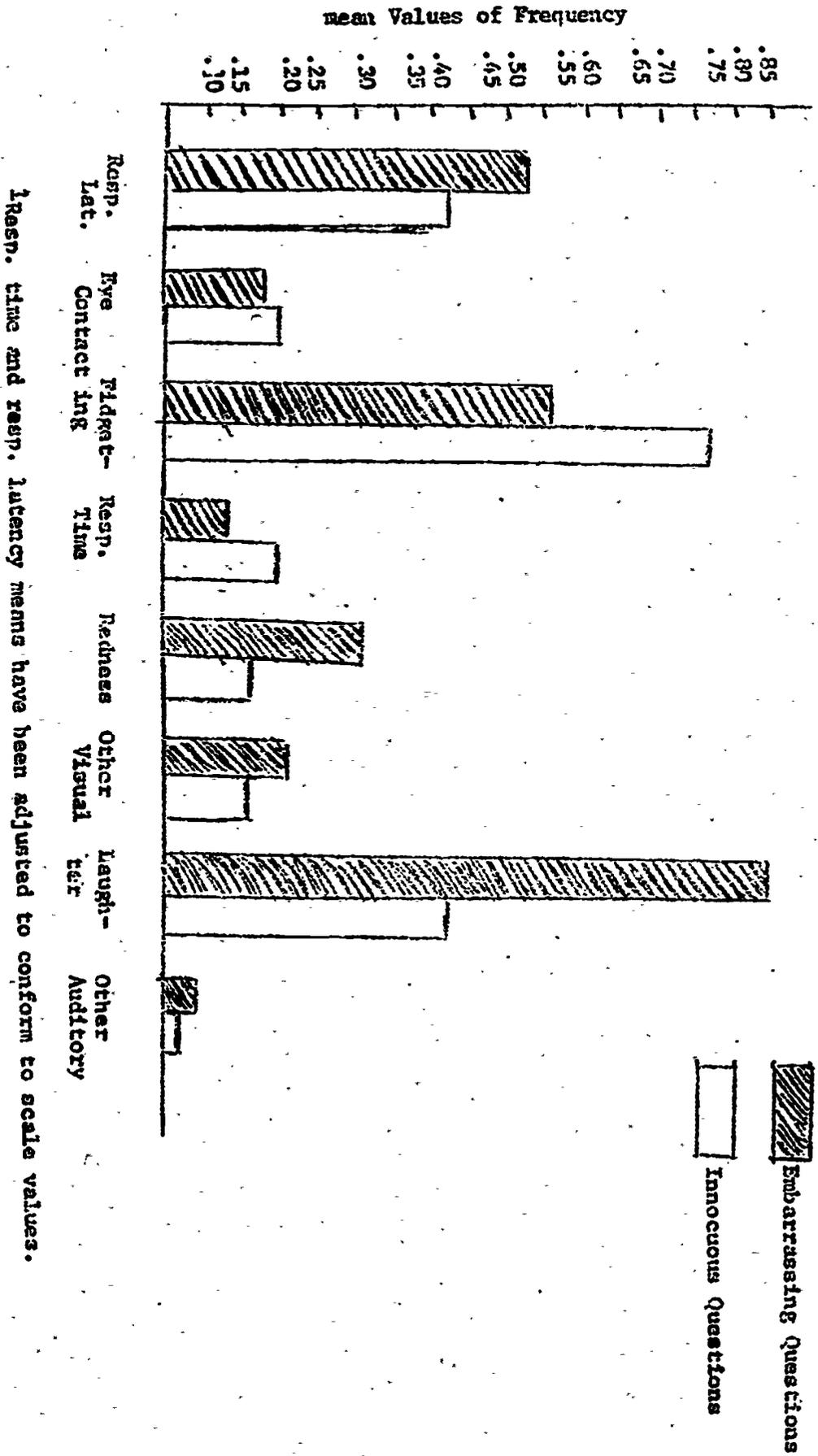
Table 7.

Ss' Ratings—Embarrassing vs. Innocuous Analysis

Mean Values of _____

0 15 20 25 30 35 40 45 50 55 60

Resp. Lat.   Eye Contact Time   Resp. Time   Pleasant-ness Ratings   Other Vcs.   Laugh-ter   Other Aud.

▨ Embarrassing Questions

☐ Innocuous Questions

Resp. time and resp. lat. have been adjusted to conform to scale values.
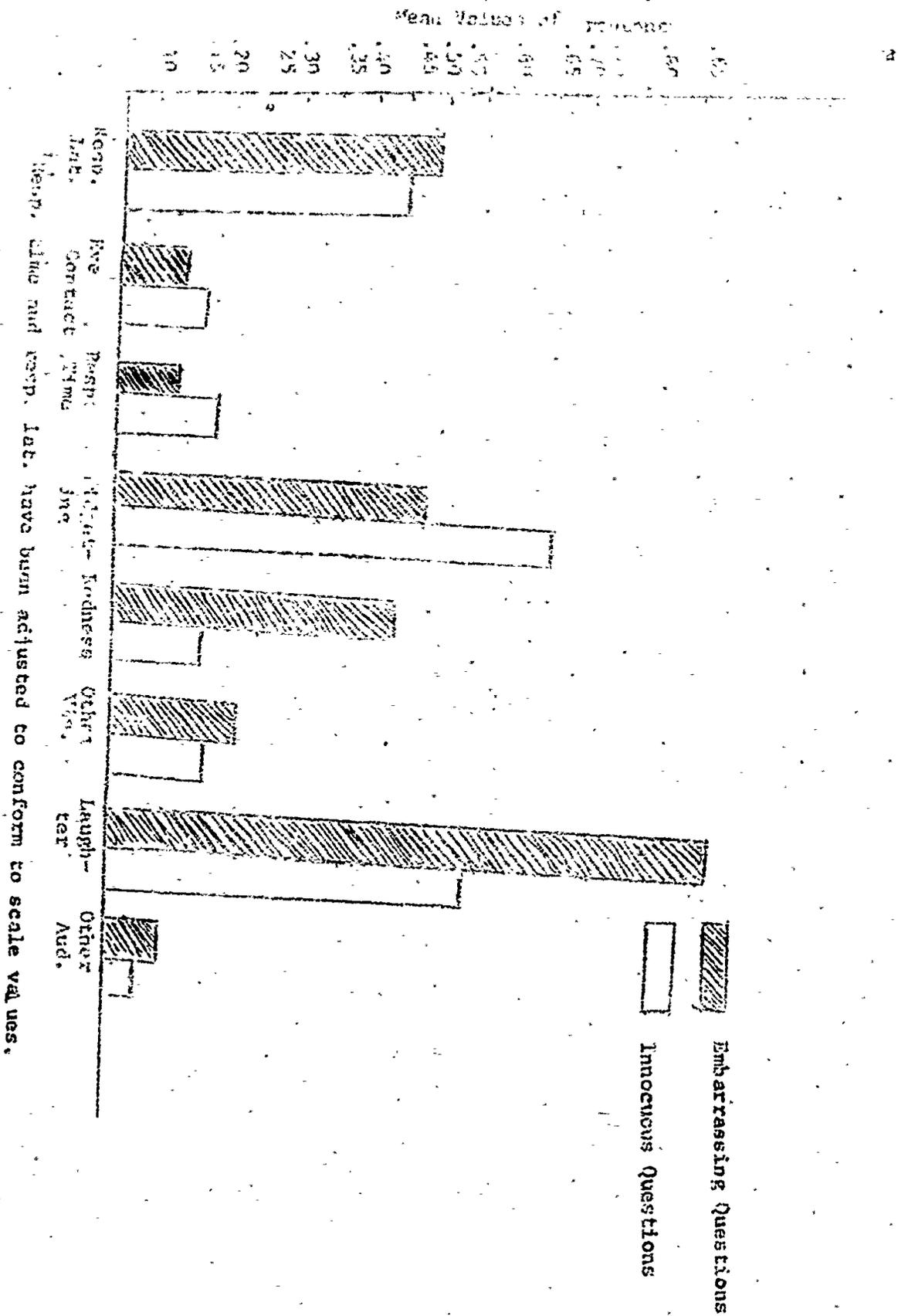
Table 8

Correlation of Response Measures

Embarrassment Analysis

	Res. Lat	Eye Contact	Resp Time	Fidg- eting	Red ness	Vis- ual	Laugh- ter	Audi- tory
Resp. Lat								
Eye Contact	.083							
Res. Time	.273**	.316**						
Fidgeting	.084	.099	.215*					
Redness	.050	.139	.155	- .099				
Visual	.295**	.022	.058	.132	.132			
Laughter	-.074	- .177	.023	.002	.010	- .050		
Auditory	.036	.033	.213	- .034	.311**	.021	- .403	

Difference analysis

	Res. Lat	Eye Contact	Resp Time	Fidg- eting	Red ness	Vis- ual	Laugh- ter	Audi- tory
Resp. Lat								
Eye Contact	.021							
Resp. Time	.352**	-.146						
Fidgeting	.010	- .027	.244**					
Redness	.053	.118	- .143	- .208				
Visual	.016	.030	.001	.135	- .061			
Laughter	.189	.037	.059	.001	.059	- .025		
Auditory	- .058	-.050	.130	- .097	.304**	- .076	- .151	

APPENDIX A

The analysis of variance which analyzed the body image versus innocuous questions yielded a significant sex by embarrassment effect for eye contact ($p < .05$). Females and low self-concept males looked at the confederate more during the innocuous questions than during the body image questions, while high self-concept males responded in the opposite direction.

When another analysis of variance was performed on the eye contact measure for those questions the subject rated as embarrassing versus those that he did not rate as embarrassing, a significant sex effect was found ($p < .01$). Males engaged in more eye contact than females. Although the confederates' eye contact was controlled, the male confederate wore eye glasses, which may have differentially affected the male and female subjects.

The sex by embarrassment interaction is more difficult to interpret. Consistent with predictions, males had less eye contact during the embarrassing than during the innocuous questions; for females the reverse was true. Exline et al. (1965) found that subjects given a personal interview looked at the interviewer less than those subjects given a recreational interview. In a later study (Exline & Winters, 1965), cognitive complexity was shown to be an important determinant of eye contact. Males who had been given Schroeder and Steufert's (1961) measure of cognitive style were divided equally into three groups varying along the dimensions of cognitive concreteness-abstractness. They were given a verbal report task of three levels of cognitive difficulty. Subjects looked at the E less when discussing the more difficult items, and "abstract" Ss exhibited more EC than Ss of more concrete cognitive style. Exline and Winters proposed that difficulties arose when an S tried to process complex material, and at the same time integrate

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the E's reactions. A person with an abstract cognitive style was better able
to process the cognitive task, could readily integrate the reactions of others
into his own thinking, and could maintaineye contact.

The above results raised doubts aboutthe earlier finding (Exline et al.
1965) that EC diminished during the personal interview. Perhaps, the Ss
avoided mutual gazing because the personal interview was more complex and in-
volved abstract thought. In the present experiment with cognitive complexity
controlled, the avoidance hypothesisstill holds for male subjects, i.e.,
EC was greater for embarrassing than innocuous questions. The mechanisms affecting
female subjects are more complex.

Argyle and Dean (1965) attempted to classify eye contact in terms of
function: (1) establishment and recognition of social relationships, (2) informa-
tion seeking, (3) signaling that the channel is open, and (4) concealment and
avoidance. Perhaps all of the latter three mechanisms were operating for
female subjects.

Females are reported to have more eye contact than males, presumably
because of their higher need for affiliation (Exline,1963; Exline et al., 1965).
Males in the present investigation were found to have more eye contact than
females for both embarrassing and innocuous questions. Perhaps the females
disliked the male confederate and were communicating a desire not to affiliate
or "closing the channels." Mehrabian and Friar (1969] reported that, whereas with
the males EC was a direct function of liking, with females only those addressing
a disliked male had significantly less EC than in the other conditions.

The above hypothesis does not explain why females decreased their EC on
the innocuous rather than on the embarrassing questions. Perhaps the females
found themselves in a threatening situation and wanted to leave the scene,

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producing an overall diminished eye contact. Because they felt threatened

during the embarrassing questions, the females looked to the confederate for

reassurance, Argyle's category of information seeking. Modigliana (1966)

found a similar result. Subjects who rated themselves as less embarrassed

(defined by a loss of public self-esteem) decreased their eye contact less than

the more embarrassed subjects. He interpreted the decreases in eye contact

as the result of the $\underline{Ss}$' not liking a confederate who maintained mutual regard

while criticising them. Obviously, more research is needed to fully account

for this effect.