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  ROLE PLAYING AND AFFECT.

  UNIVERSITY OF HAWAII, PH.D., 1978

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ROLE PLAYING AND AFFECT

A DISSERTATION SUBMITTED TO THE GRADUATE DIVISION OF THE
UNIVERSITY OF HAWAII IN PARTIAL FULFILLMENT
OF THE REQUIREMENTS FOR THE DEGREE OF

DOCTOR OF PHILOSOPHY

IN PSYCHOLOGY

MAY 1978

By

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ABSTRACT

The present work investigated whether untrained people can encode and decode "happiness" and "depression" within a social context by developing a role playing method. It also examined personality variables of the encoders and the effects of encoding on their self-ratings of affect.

Forty-three female students served as role playing subjects (encoders). They were divided into three groups on the basis of their scores on the Zung Self-Rating Depression Scale. Subjects were individually interviewed three times. The first interview served as its own control. The interviewer asked about the subjects' school work, family, and friends for about three minutes. The second and third interviews involved subjects' role playing under "happy" and "depressed" instructions. Subjects were told to remember a time when they felt very "depressed" or "happy" and act as if very "depressed" or "happy" while being interviewed. The order of role playing was counter-balanced. The design of the study was a 3 X 2 X 2 (Zung SDS group, role playing condition, order of role playing) factorial design with repeated measures across role playing conditions.

Immediately after each interview, subjects rated them-selves on the four 5-point affect scales: "happy," "depressed," "pleasant," and "anxious." Scores on these self-rating dependent measures in each role playing condition

were converted to change scores from baseline to each role playing condition and they were entered into four separate analyses of variance.

The results indicated that role playing subjects' self-report on three of the four dependent measures changed significantly (p < .001) according to their role enactment under "happy" and "depressed" instructions. Subsequent tests revealed that the changes were in the predicted directions. There was no significant effect of the Zung group. These results support the hypothesis that untrained people can act "happy" and "depressed" and these enactments have a significant impact on self-reported ratings of affect.

Videotape segments of subjects' baseline and their role playing under "happy" and "depressed" instructions were made and randomized in order. They were subjected to an independent validation by 9 groups of untrained observer-judges (N = 108 females). Observer-judges rated subjects' baseline and their role playing under "happy" and "depressed" instructions on 9 affect scales. For the purpose of the present work the four scales which corresponded to the self-ratings ("happy," "depressed," "anxious," and "pleasant") were examined and the scores were entered into four separate analyses of variance using the same design as that of role playing subjects.

The results indicated that the ratings made by observer-judges of the subjects in the three independent conditions

of baseline, "happy" and "depressed" were significantly different at $p < .001$. Subsequent tests revealed that the differences were in the predicted direction. These results offered a strong validation of the subjects' role playing by observer-judges independent of the subjects' self-report and supported the hypothesis that untrained people can decode "happiness" and "depression."

Personality measures, such as the Zung Scale, Beck Inventory for Measuring Depression, Taylor MAS, and Ullmann Facilitation-Inhibition Scale, were most significantly correlated to subjects' baseline but not to scores in role playing conditions. When the situation changed from base-line to role playing "happy" and "depressed," the personality measures were not consistent.

The present study demonstrated that untrained people can communicate affect via overt behavior within a social context. Role playing has a significant effect upon self-ratings of affect. The results also indicated that within the population sampled there is a social consensus on what behaviors are considered as "happy" and "depressed." It remains to be studied what specific behaviors communicate "happiness" and "depression" among people at large.

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I. INTRODUCTION

The starting point of the present study is the prior work on the communication of affect via overt behavior. The major purpose of this study is to develop an effective research strategy for the investigation of various behaviors which untrained people encode and decode for the communication of affect within a given context. This study is not intended as a theoretical debate or a development of a model.

During the past decade, there has been an increasing interest in those behaviors variously called "nonverbal communication", "nonverbal behavior", "body language", and "expressive movements" (Duncan, 1969). These behaviors have included facial expressions, hand and arm movements, postures, and various acts of body or the legs and feet (e.g., Argyle, 1976; Birdwhistell, 1970; Ekman & Friesen, 1969; Ekman, Friesen, & Ellsworth, 1972; Exline, 1972; Fridja, 1969; Izard, 1971, 1977; Knapp, 1972; Mehrabian, 1972). These behaviors have also included paralinguistic behaviors, such as rate, pause, and tone of voice (Davitz, 1964; Dittman & Llywellyn, 1969; Duncan, 1969; Freedman & Hoffman, 1964; Kanfer, 1969; Kramer, 1963; Levy, 1964; Mahl & Shulze, 1964; Trager, 1958).

Empirical research has indicated that nonverbal behaviors are acts of communication and serve as vehicles for making public one's own experience (Mehrabian, 1972; Wiener, Devoe, Rubinow, & Geller, 1972). It is now clearly

established that one's affect can be communicated to another via overt behavior (Ekman & Friesen, 1975; Fridja, 1969). The communication of affect is established when the observer responds to an actor's behaviors in a socially appropriate or shared manner (Averill, 1976). In this view, one can study affect in the context of "person perception" (Bruner & Tagiuri, 1954) and "behavior influence" (Krasner & Ullmann, 1973) research. One paradigm for studying affect therefore includes an analysis of an actor and an observer within a given social situation.

The above work is within the current context of an interactional model of behavior (Endler & Magnusson, 1976a). In this model, behavior involves a continuous interaction between individuals and the situations they encounter (Argyle & Little, 1972; Bowers, 1972; Endler & Magnusson, 1976a, 1976b; Ekhammar, 1974; Marsella & Higginbotham, 1973; Mischel, 1973). Given the empirical foundation of this model, one can attempt to make a specific assessment of interactional relationship between the person and the situation (e.g., Mariotto & Paul, 1975).

The present study gathered data on the overt behavior of untrained and unbiased people role playing "happy" and "depressed." This study is a step towards developing an effective method for investigating what behaviors people consider "depressed" and "happy" in a social communication framework.

Role Playing and Affect

A number of studies have demonstrated that lay people
can encode specific facial responses that lead other lay
people to accurately identify posed behaviors (e.g., Buck,
Miller, & Caul, 1974; Buck, Savin, Miller, Lipset,
Koivumaki, & Rosenthal, 1972; Thompson & Meltzer, 1964;
Zuckerman, Hall, DeFrank, & Rosenthal, 1976). Typically,
these studies have employed "affect-inducing" stimuli and
instructed subjects to encode their reactions to the stimuli
on the face so that observers may be able to decode what
stimulus material they were shown. These studies have
supplied information on what people consider to be affect
in a social communication framework by the use of overt
behavioral cues.

It is also important to recognize that people differ
in their ability to encode and to decode affect (e.g., Buck,
1975, 1977; Buck, Savin, Miller, & Caul, 1972; Drag & Shaw,
1967; Lanzetta, Cartwright-Smith, & Kleck, 1976; Thompson
& Meltzer, 1964; Zuckerman et al., 1976). People's
expressive movements are not unitary and involve a wide range
of overt behaviors (Duncan & Fiske, 1977; Rippere, 1977).
There is, however, a need to study specific "person
variables" (Mischel, 1973). Buck (1975, 1977) has begun to
investigate the "externalizer-internalizer" dimension of
personality in the communication of affect. One of the
contributions of the present study is to add to Buck's work
by taking into account personality variables which are

regarded as being salient to those behaviors called "depressed."

When we investigate affect in a social situation, it is necessary to encourage the spontaneous enactment of behaviors. Tagiuri (1969) argued, for example, that when a person poses behaviors, "he may use more stereotyped expressions than he would exhibit under natural conditions" (p. 404). While a review of research into facial expressions has indicated that untrained people can identify people's facial behavior quite accurately across cultures (Ekman, 1974; Tanaka-Matsumi & Boucher, 1978), these studies have used highly selected and posed facial photographs which were developed in the laboratories without context (e.g., Boucher, 1973; Ekman & Friesen, 1971; Ekman, Sorenson, & Friesen, 1969; Izard, 1968, 1971). To enhance external validity of these studies on communication of affect, we need to develop methods to facilitate the spontaneous enactments of behaviors to maximize the range of behaviors that untrained people encode and decode in socially relevant contexts (Lanzetta & Kleck, 1970). An adequate study of affect within a social communication framework should then include the encoder of affect, the decoder of affect, and the situation (Brown, 1965). The present work did this.

In the past few years, role playing has received increased attention as a means of studying communication and the person's experience (Holmes & Bennett, 1974; Houston & Holmes, 1975; Kopel & Arkowitz, 1974; Lanzetta et al., 1976).

These studies have offered a research paradigm in which
untrained and unbiased people were asked to encode specific
overt facial responses with the anticipation and reception
of aversive stimuli. All these studies found that the
subjects' self-reports were consistently modified according
to their overt behaviors.

Further, Lanzetta et al. (1976) found that the subjects'
overt behaviors served a "social communicative" function.
That is, untrained observers were able to judge those
behaviors by using "global indices" (Gage & Cronbach, 1955).
Given this research paradigm, we may now attempt to specify
the social communication function of affect by investigating
the social context in which affect is displayed (Boucher,
1974; Tagiuri & Petrullo, 1958).

Role playing as a research method is rather well
established (Krupat, 1977). Social psychologists have
argued about role playing as an alternative to deception in
experiments (Cooper, 1976; Hamilton, 1976; Miller, 1972;
Mixon, 1972) or to serve as "quasi-controls" (Orne, 1969).
Role playing has also been used for studies on group dynamics
and interpersonal social skills training (e.g., Borgatta,
1961; Brody, Noel, & Snyder, 1963; Flowers, 1975; Sheftel
& Sheftel, 1967). Further, the concept of role has been
investigated intensively during the past 30 years in
psychology and sociology (Coutou, 1951; Neiman & Hughes,
1951; Sarbin & Allen, 1968; Thomas & Biddle, 1966).
Particularly relevant to this study is an assessment of

people who play specific roles in social situations (Burke, 1969; Goffman, 1959; Mead, 1934). All of these points converge in emphasizing the social character of the act (Dewey, 1922; Ullmann & Krasner, 1975).

In sum, there are three major points to be noted from the literature review in the preceding sections. First, it is valuable to investigate people's ability to encode and to decode affect as social communication. Second, role playing or the spontaneous enactment of role behaviors influences the person's experience. It serves as a source of self-observation (Bem, 1967) and facilitates behavior change (Kelly, 1955; Kopel & Arkowitz, 1975). That is, actively engaging in certain behaviors influences the self-appraisal of the person (Jones & Nisbett, 1971). Third, role playing approximates social situations (Rosenfeld, 1966a, 1966b) and therefore it enhances external validity of the research method (Mann, 1956). Fourth, it is easier to generalize from the behaviors of untrained people than from posed, professional or trained people (Brunswik, 1956). The focus of this study is on whether or not untrained people, when instructed to do so, can encode and decode affect, and the effects this encoding may have on them.

Use of Untrained Observers as Judges to Validate Role Playing

When affect is defined within the social communication context, it is necessary to study the judging behavior of

observers to validate subjects' role enactment under
"depressed" and "happy" instructions. The question is
whether or not untrained people can encode "happiness" and
"depression" and whether or not naive observers are able
to discriminate those behaviors. Although validation has
received attention among researchers in this area, they have
typically asked judges to "infer" the nature of "affect-
producing stimuli" on the basis of facial expressions of
the people watching those stimulus materials. For example,
those stimuli have included slides, electric shocks, or
stress film (Buck et al., 1972, 1974; Gubar, 1966; Laird,
1976; Lanzetta et al., 1976). Those stimulus materials
were validated via the use of facial expressions. It is,
however, an indirect and "inferential" method. Generality
of those affect-producing stimuli may be limited when we
consider people's real life experiences of affect in social
situations. There is room for a methodological improvement
in those validation procedures, and the present work
provides it. It accomplishes this by emphasizing direct
ratings by observer-judges rather than "inferences." Such
direct rating by observer-judges provides a validation
beyond the self-report of the role playing subjects.

Purpose of Research

The present study was designed to investigate: (1) if
there are differences in self-reports of role behaviors
under "depressed" and "happy" instructions by role playing

subjects who scored high, medium, or low on the Zung Self-Rating Depression Scale (SDS) (Zung, 1965, 1972); (2) if there are differences in observer-judges' ratings of role behaviors of the subjects under "happy" and "depressed" instructions; and (3) if there is a significant association between personality variables and the person's self-report of role playing of "happiness" and "depression."

Experimental Hypotheses

1. Subjects' self-report of role playing under "depressed" instructions will be significantly different from their self-report under "happy" instructions. Specifically, subjects will rate themselves significantly more "depressed" under "depressed" instructions than under "happy" instructions, and they will rate themselves significantly "happier" under "happy" instructions than under "depressed" instructions.

2. There will be significant differences among the self-reports of the subjects who scored high, medium, or low on the Zung SDS in role playing under "happy" instructions and under "depressed" instructions.

3. There will be significant differences among the three groups of subjects (Zung Low, Zung Mid, Zung High) in their self-ratings of acting ability under "depressed" and under "happy" instructions respectively.

4. There will be significant differences between observer-judges' ratings of subjects role playing under

"happy" instructions and their ratings of subjects role
playing under "depressed" instructions. Specifically, the
observer-judge ratings will have significantly higher scores
on "depression" scale (dependent measure) when rating sub-
jects who are role playing "depressed" than when observer-
judges are rating subjects who are role playing "happy,"
and vice versa when observer-judges are rating subjects who
are role playing "happy."

5. Observer-judges' ratings of subjects' role playing
under both "happy" and "depressed" instructions will be
significantly different from their ratings of subjects'
baseline.

6. Observer-judges' ratings of subjects' role playing
under "happy" instructions will be significantly different
among the three groups of role playing subjects who are
high, medium, or low on the Zung SDS.

7. Observer-judges' ratings of role playing subjects
under "depressed" instructions will be significantly
different among the three groups of role playing subjects
who are high, medium, or low on the Zung SDS.

Exploratory Hypotheses

Personality variables as measured by the Zung SDS,
Beck Inventory for Measuring Depression, Taylor Manifest
Anxiety Scale (MAS), and Ullmann Facilitation-Inhibition
Scale will be significantly associated with self-report

of role playing subjects in baseline and "depressed" and "happy" role playing conditions.

Methodological Improvement of the Present Study over Prior Work

Based upon the previous literature review, the present study was designed with the following modifications and improvements in methodology.

1. Subjects were not trained to encode behavior under specific role instructions to study affect. This will enhance generalizability of the findings.

2. Enactment of spontaneous as opposed to posed acts were encouraged in the present study.

3. The present study was designed with a context in which subjects encode "depression" and "happiness." The context in this study is a dyadic interview situation.

4. Both face and body were included as sources of communication of affect when subjects encode "depression" and "happiness." This extends prior work which used only the face.

5. All three communication channels were examined as subjects encoded "happiness" and "depression." These channels included verbal, nonverbal, and paralingual behaviors. This enhanced the social communication function of subjects' role playing.

6. The same subject was asked to encode both "happiness" and "depression" in a repeated measures design. Also, the

subjects' own baseline was assessed so that their behavior change and self-report of role playing could be assessed with stringent criteria by using change scores from baseline to role playing conditions.

7.   The two roles were counterbalanced.

8.   Instead of using artifical "affect-producing" stimuli, such as aversive stimuli or stress slides, the present work used the subjects' own experience for facilitating the role playing under "happy" and "depressed" instructions.

9.   Personality variables, as measured by the Zung SDS, Beck Scale, Taylor MAS, and Facilitation-Inhibition Scale were taken into account to examine their potential association with the dependent measures employed in this study.

10.   The present study advanced the prior research by subjecting all the role playing of the subjects for a judge validation.   It went beyond the sole use of self-report measures and included observer-judges' report of the subjects' overt behavior.

11.   Instead of using "inferential" judgments of the stimulus material, observer-judges were asked to specify overt cues to clarify their judgment of role playing.

12.   In validation, stimulus materials of the subjects' role playing were completely randomized and the same judge never viewed the same role player more than once.   This

enhanced the independency of the stimulus materials and approximated a social judgment condition.

II. METHODS

<u>Subjects</u>

Forty-three Caucasian-American females participated in this study. They were recruited from undergraduate psychology courses at the University of Hawaii and were given bonus course credit for their participation. Their ages ranged from 18 to 46 with a mean of 24.3 (SD = 6.3).

Upon arriving at the experiment, all the subjects took the Zung Self-Rating Depression Scale (SDS) (Zung, 1965, 1972) with a battery of other tests. The subjects were divided into three groups on the basis of their scores on the SDS.

The three groups were operationally called Low Zung, Mid Zung, and High Zung. The Low Zung group consisted of subjects who scored 39 or below on the SDS, the Mid Zung group consisted of subjects who scored between 40 and 49, and the High Zung group consisted of subjects who scored 50 or above the the SDS. The Low Zung group consisted of 17 subjects. The Mid Zung group consisted of 14 subjects. The High Zung group consisted of 12 subjects.

In this study, the SDS was used to operationally divide the subjects into three quasi-experimental groups regarding levels of "depression" in order to add information to the study on affect encoding and decoding. Although there has been a considerable debate as to what the SDS really measures (e.g., Pehm, 1976), the current author used it as a measure of "depression." According to Zung (1965), the

SDS index of 50 is a cut-off point to discriminate "clinically significant" levels of "depressive" symptomatology. Therefore, including the High Zung group should enhance clinical implications of the present study.

The Mid Zung group was included in the present study for methodological reasons on the basis of a pilot study which examined a distribution of the SDS scores. By including the mid-range subjects on the SDS, one can conduct statistical comparisons, while comparing only High Zungs and Low Zungs faces the problem of statistical effect of regression to the means (Campbell & Stanley, 1963). Furthermore, by including the entire distribution, one can enhance the generalizability of the present findings. This is important, because the present study focused on a general population and not on a psychiatric population from which the SDS was originally developed (Zung, 1973).

Only females were used in this study to minimize variance due to sex differences in encoding and decoding of affect that have been noted in prior research (Davitz, 1964; Drag & Show, 1967; Gouaux & Gouaux, 1971; Thompson & Meltzer, 1964; Zaidel & Mehrabian, 1969). Caucasians were used as encoders of role behaviors because the role playing methodology has not yet been validated across cultures. There is a need to test the usefulness of the method with one cultural group first.

<u>Materials</u>

<u>Pretask measures</u>. To add salient information to the present study on role playing, three other scales were administered prior to the experimental task (see Appendix A for general instruction). They were: (1) Beck Inventory for Measuring Depression (Beck, Ward, Mendelson, Mock, & Erbaugh, 1961); (2) The Manifest Anxiety Scale (MAS) (Taylor, 1953); (3) the Facilitation-Inhibition Scale (Ullmann, 1962). These scales were selected in order to examine person variables which may contribute to an interaction effect between experimental treatments and people's aptitudes (Cronbach, 1975).

<u>Affect rating scales</u>. To measure the effect of experimental manipulation for role playing, four 5-point affect rating scales were developed. Each scale asked the degree to which the person felt: (1) "Happy"; (2) "Depressed"; (3) "Pleasant"; and (4) "Anxious" (1 indicating "Not at All or Very Slightly", 2 indicating "Slightly", 3 indicating "Moderately", 4 indicating "Considerably" and 5 indicating "Very Strongly") (see Appendix B). These scales served as dependent measures for the subjects in role playing conditions.

<u>Acting scale</u>. To measure self-rated ability to role play, a 5-point acting scale was developed. Subjects were asked to rate the degree to which they felt they were able to act what they had felt when they were actually "depressed" or "happy" with 1 indicating "Very Poor", 2 indicating

"Poor," 3 indicating "Fair," 4 indicating "Good" and 5 indicating "Very Good." Operational definitions were provided for each of the five scale points (see Appendix B).

Interviewer. All the interviews in role playing situations and baseline condition were conducted by a female advanced-undergraduate student in psychology. She held a B.A. in mathematics and had considerable work experience. She was also a Caucasian and received research credit for her contribution to the present study as interviewer. She was trained for approximately three hours prior to the experiment about specific questions to ask of the subjects and about procedures for interviewing. She was told that the present study was about affect and role playing but was not informed of specific role playing instructions which were given to the subjects. She was not informed of the specific experimental hypotheses or the design of the present study.

Procedure

Subjects were met individually by the experimenter in a video studio of the Instructional Resources Service Center of the University of Hawaii. This studio is staffed by a number of technical operators and is equipped with videotape recording devices and monitors.

Immediately after taking the pretask measures, the subject participated in role playing. The task for the subject in this studio consisted of three consecutive

interviews. The first interview served the subject's own control and no manipulation was made. The second and third interviews involved role playing, as will be described in detail. All the interviews were done individually. It took about 45 minutes for one subject to complete her participation including pretask measures.

Prior to the interviews, permissions were obtained from the subjects for the use of videotapes in the present study (see Appendix C).

Interview Part 1 (baseline). After taking the pretask measures, the subject was given the following instruction individually:

> The purpose of the present study is to investi-
> gate various feelings and behaviors of people
> in interpersonal situations. First, you will
> be interviewed by one of us and she will ask
> you three questions. You have approximately
> one minute to answer each question. The inter-
> viewer is interested in what you have to say,
> so please answer her questions in the way that
> suits you most. Later, we will be asking you
> to fill in a brief questionnaire and then there
> will be two more interviews.

Then the subject was led to the interviewer in the same studio. This interview served as the subject's own baseline.

The subject-interviewee was seated across from the interviewer. Videotapes were made of individual interviews with 43 subjects involving a full body view of the seated interviewee only. All the interviews were conducted by the same interviewer in the same physical setting.

Interview sessions were semi-structured (e.g., Ullmann, Bower, Greenberg, et al., 1968). A time keeper stood

unobtrusively behind the subject and made nonverbal signals
to the interviewer to keep the procedure standard. The
interviewer asked three standard open-ended questions about
the subject's educational and vocational goals, family
relationships, and about friends. The questions were:

Question 1. Can you tell me a little bit about
             your work, what you are studying
             and how are you doing?
             What do you want to do after college?
Question 2. Can you tell me a little bit about
             your family? And how are you getting
             along with them?
Question 3. Tell me a little bit about your
             friends, what sort of things you do
             with them. How are you getting
             along with them?

After each question, 45 seconds were timed and the time
keeper signaled to the interviewer to wind up and proceed to
the next question.

Two cameras were available for videotaping the inter-
view sessions. At the outset of the experiment, the
technical operator adjusted appropriate position and
distance of the two cameras for the present study. Once the
interview started, recordings were made from a remote control
terminal, located in the same studio. Nobody was standing
behind the two cameras and no manipulation of the cameras
was made once the interview started. However, the subjects
were aware of being recorded.

The first camera focused on the full body view of the
seated interviewee only. The second camera focused more
closely on the interviewee's upper body and face. Prior to
the interview, it was determined which camera operated first

by a random selection of the two cameras across subjects. At every 45 second interval, the cameras automatically shifted to either a full body view (camera No. 1) or an upper body and face (camera No. 2). These intervals were indicated to the technical operator by the time keeper as he/she made signals to the interviewer. This way the selection and use of the two cameras were standardized.

Immediately after the interview was over, the four 5-point affect rating scales were administered: (1) "Happy"; (2) "Depressed"; (3) "Pleasant"; (4) "Anxious". The subject was asked to rate the degree to which she felt during the interview on these scales. No definition was given for any of these four affect labels. At this point, the subjects were not informed that their next task was role playing.

The next two interviews involved role playing by the subject. One interview involved role playing under "happy" instructions and the other interview involved role playing under "depressed" instructions. All the subjects role played under both instructions. The order of role playing was counterbalanced. That is, half the subjects (N = 21) role played, first, under "happy" instructions and, secondly, under "depressed" instructions. The other half of the subjects (N = 22) role played, first, under "depressed" instructions and, secondly, under "happy" instructions.

Interview Part 2 (Role playing under "depressed" instructions). Following the completion of the affect rating scales as in Part 1, the subject was told that the

experimenter was interested in how people act when they are

very depressed during the next interview session. The

following instruction was given:

> We are interested in how people act when they are
> very depressed. Have you ever felt very depressed
> at all? (pause) What was it like when you were
> feeling down? (pause) Do you remember how you
> felt and how you acted when you were very depressed?
> (pause) Can you give me one example of a situa-
> tion in which you felt very low? (pause) When
> you are depressed, your behaviors are probably
> different than when you are happy or feeling good.
>   People may differ how they act when they are
> very depressed. We are interested in your behaviors
> when you are depressed. You may very well not
> feel depressed today, so we want you to role play
> as if you are very depressed. That is, present
> yourself as a very depressed person to the inter-
> viewer and try to express depressed feelings in
> your speech and in your movements. The inter-
> viewer will ask you the same questions, but this
> time you are going to act depressed.
>   Depressive behaviors include verbal acts, such
> as speech, paralingual acts, such as tone of voice,
> pitch, and speed, body motion, such as movements
> of the body, legs and feet, and facial expressions.
> There is no one way to act depressed, and we want
> you to act in the way you feel when you are
> actually depressed.
>   You can try to visualize a time when you were
> really depressed by closing your eyes and recall
> those feelings and thoughts you had . . . What
> was it like when you were depressed? . . . How
> did you act? . . . Recall the time . . . When was
> it? . . . The place. . . . Where were you? . . .
> People. Who were you with? Or were you alone
> by yourself? Try to imagine the situation as
> clearly as you can. Recall those feelings and
> thoughts you had and visualize your actions, how
> you moved and how you talked. You can take your
> time and please let me know when you are ready.
>   Of course, you are not a professional actor
> but we are interested in the way you role play a
> depressed person in your own case.

The same interviewer asked the same three standard and

open-ended questions about school, family, and friends, as

in interview Part 1. Procedures were also the same as in interview Part 1. The entire interview was videotaped.

Immediately after the interview was over, the subject took the four affect rating scales as in interview Part 1: (1) "Happy"; (2) "Depressed"; (3) "Pleasant"; and (4) "Anxious".

In order to assess individual differences in the ability to role play, the 5-point Acting Scale was administered.

Interview Part 3 (Role playing under "happy" instructions). After the completion of the affect rating scales and the Acting Scale in interview Part 2, the subject was told that the experimenter was interested in how people act when they are very happy and that their task was to act as if very happy during the next interview session. The following instruction was given:

> We are interested in how people act when they are very happy. Have you ever felt very happy at all? (pause) Do you remember how you felt and how you acted when you were very happy? (pause) Can you give me one example of a situation in which you felt very happy? (pause) And how did you act? (pause) When you are happy, your behaviors are probably different than when you are not happy or feeling bad.
> People may differ how they act when they are very happy. We are interested in your behaviors when you are very happy. You may very well not feel very happy today, so we want you to role play as if very happy. That is, present yourself as a very happy person to the interviewer and try to express happiness in your speech and in your movements. The interviewer will ask you the same questions, but this time you are going to act happy.
> Happy behaviors include verbal acts, such as speech, paralingual acts, such as tone of voice, pitch, and speed, body motion, such as movements of the body, legs, and feet, and

<u>facial</u> <u>expressions</u>. There is no one way to act
<u>happy</u>, and we want you to act in the way you feel
when you are actually happy.
You can try to visualize a time when you
were really happy by closing your eyes and recall
those feelings and thoughts you had. . . . What
was it like when you were happy? . . . How did
you act? . . . Recall the time . . . . When was
it? . . . The place . . . . Where were you?
. . . People. . . . Who were you with or were you
alone by yourself? . . . Try to imagine the situa-
tion as clearly as you can. Recall those feelings
and thoughts you had and visualize your actions,
how you moved and how you talked. You can take
your time and please let me know when you are
ready.
Of course, you are not a professional actor
but we <u>are</u> interested in the way you role play
a very happy person in your own case.

The same interviewer asked the same three standard and

open-ended questions about school, family, and friends, as

in interviews Part 1 and 2. The entire interview was

videotaped and the procedures were the same as in the

preceding two interviews.

Immediately after the interview was over, the four

5-point affect rating scales were administered: (1) "Happy";

(2) "Depressed"; (3) "Pleasant"; (4) "Anxious". Also, the

5-point Acting Scale was administered to examine how well

the subject felt that she had role played under "happy"

instructions.

After the experiment, they were asked to sign a consent

form No. 2 (see Appendix D) and to complete a post-task

questionnaire (see Appendix B). This time the consent form

stated that the tapes will be viewed and rated by student-

judges for the purpose of scientific research. They were

also informed that the use of the videotapes would contribute

to the validation of role playing. If they had any questions regarding this experiment, they were debriefed thoroughly.

Design and Dependent Measures

The experimental design for this study is presented in Figure 1.

The present study was a 3 (group of subject: Low Zung, Mid Zung, High Zung) X 2 (role playing condition: "Depressed" instruction, "happy" instruction) X 2 (order of role playing: "Happy"-"depressed", "Depressed"-"happy") factorial design with repeated measures across role playing conditions. The subjects' scores in the baseline interview condition were used as their own control and the change scores from baseline to role playing conditions were used in the analyses.

Statistical Analyses

Analyses of the data were done by 3 X 2 X 2 analyses of variance with repeated measures across role playing conditions or 2 trial factors (Dixon, 1977). Subsequent tests after analyses of variance were done by Newman-Keuls tests (Kirk, 1968). All the correlational analyses were done by Pearson product moment correlational methods (Nie, Hull, Jenkins, Steinbrenner, & Bent, 1975).

Validation of Role Playing

Of the 43 subjects who participated in the role playing sessions, 40 subjects signed the second consent form

Figure 1

Design of the Experiment

<u>Role Playing Condition</u> (Repeated)

<u>Group</u>	Baseline	<u>Order</u>	
Low Zung X ≤ 39	Baseline (N = 17)	"Happy" N = 7	"Depressed"
		"Depressed" N = 10	"Happy"
Mid Zung 40 ≤ X ≤ 49	Baseline (N = 14)	"Happy" N = 8	"Depressed"
		"Depressed" N = 6	"Happy"
High Zung X ≥ 50	Baseline (N = 12)	"Happy" N = 6	"Depressed"
		"Depressed" N = 6	"Happy"

permitting the use of their videotapes for validation. Of the three subjects who withdrew, one subject was originally in Zung Low group and the two subjects were in Mid Zung group.

With 40 subjects (role players) whose tapes were made available for validation, there were 120 videotape segments of the interviews across three conditions (baseline-"depressed"-"happy"). Because of the large number of stimulus material, the validation was done in 9 separate sessions. That is, the entire tape material was divided into 9 groups and these 9 groups of judges viewed and rated the tapes.

Observer-Judges

The observer-judges were 108 English speaking American females of various ethnic background drawn from under-graduate psychology courses. They were 58 Japanese-Americans, 13 Caucasian-Americans, 14 Chinese-Americans, 8 Filipino-Americans, 3 Korean-Americans, and 12 Americans of mixed ethnic groups. Their mean age was 19.9. They received course credit for their participation.

While cultural variables in the judgment of affect are important, the present study focused on role-player subjects' affect encoding and thus the observer-judges were regarded as validating instruments (Campbell & Stanley, 1963). Once the stimulus material is validated, one can

investigate cultural variables by developing methods which would be sensitive to potential differences.

The judges were randomly assigned to one of the nine groups.

Validation Procedure

All 120 videotape segments were divided into 9 sets. The first 6 sets contained 13 segments and the last 3 sets contained 14 segments each. These 120 videotape segments were edited to randomize the order of presentation but were blocked for group of subjects, order of role playing and role playing condition of the subjects. Each set contained equal proportion of the number of tape segments according to group, order, and role playing condition.

Tape segments in each set were edited in such a way that one person (role player) appeared only once in any stimulus material. That is, judges never saw the same person more than once within the same judging session. This way, the videotape segments within the same set were made completely independent. Thus, the judges cannot employ an evaluation strategy that is based upon comparisons of shifts from the subject's (role player) baseline behavior, as tended to be the case in prior research (e.g., Lanzetta et al., 1976).

The first 2-minute segment of all the interviews was edited to serve as stimulus material for decoding. Each stimulus tape segment was followed by a 30-second interval

of blank tape. During and after the stimulus material,
that is, 2 minute of stimulus tape segment and 30 seconds of
blank tape, the judges were asked to rate one interview. In
this way, all the video segments were shown in a standard-
ized manner.

Judging was done in 9 separate group sessions. A
judging session took approximately 50 minutes. Judges were
seated before a large videotape monitor (25 inches) and
were told that the purpose of the study was to investigate
how people judge other people's affect and that their task
was to act as observer-judges of various tape segments of
people whom we had recently interviewed at the University
of Hawaii (see Appendix E). They were not informed that
people in the videotapes were role playing until after the
experiment was completed.

The judges were asked to rate each interviewee on 9
5-point affect scales: (1) "Happy"; (2) "Depressed";
(3) "Pleasant"; (4) "Anxious"; (5) "Sad"; (6) "Disgusted";
(7) "Surprised"; (8) "Fearful"; and (9) "Angry" (see
Appendix F). The scale points indicated: 1. "Not At All"
or "No Evidence"; 2. "Slightly'; 3. "Moderately";
4. "Considerably"; and 5. "Very Strongly".

In order to familiarize the judges with the rating
forms, they were given two randomly selected videotape
segments for practice. After the practice session, which
took 5 minutes, the judges were allowed to ask questions
about the use of the rating forms.

In order to facilitate the observer-judges' attention to the specific stimulus material, that is, role player subject in the tapes, they were asked to specify the cues that they used in making ratings for each of the interviewees on each of the nine scales. Cues were defined as any behavior of the interviewee that influenced the judgment on nine affect rating scales.

No definition of any of the nine affect labels was provided.

After the judging session was over, the experimenter told the judges about the nature of the videotapes. The judges were told that people in the videotapes were role playing and the study they participated in was a validation study (see Appendix G). This information was also sent to the role playing subjects (see Appendix H).

Dependent Measures in Validation

The nine 5-point affect rating scales served as dependent measures for validating role playing: (1) "Happy"; (2) "Depressed"; (3) "Pleasant"; (4) "Anxious"; (5) "Sad"; (6) "Disgusted"; (7) "Fearful"; (8) "Surprised"; and (9) "Angry".

Since this judging procedure was conducted specifically to validate role playing of the subjects, the design of validation was a replicate of the design for role playing subjects as in Figure 1 (see Figure 1). This means that each role player received a set of 9 scores: "Happy",

"Depressed", "Pleasant", "Anxious", "Sad", "Disgusted", "Fearful", "Surprised", and "Angry".

Statistical Analyses for Validation

Analyses of the observer-judges' data were done by 3 (group of role playing subjects: High Zung, Mid Zung, Low Zung) X 3 (role playing condition: baseline, "happy", "depressed") X 2 (order: "happy"-"depressed", "depressed"-"happy") analyses of variance with repeated measures across role playing conditions (Dixon, 1977). Subsequent tests were done by Newman-Keuls tests (Kirk, 1968). All the correlational analyses were done by computing Pearson product moment correlation coefficients (Nie, Bent, Hull et al., 1975). Reliability checks of the observer-judges were done by applying the Spearman-Brown prediction formula (Ebel, 1972).

III. RESULTS

The results of the present study were analyzed according to experimental hypotheses 1 through 7.

Analysis of Subjects' Self-Reports of Role Playing

To test hypotheses 1 and 2 of the present study, subjects' scores on the four dependent measures ("Happy", "Depressed", "Pleasant", and "Anxious") were examined. The most stringent analysis of treatment effects can be done by using change scores from baseline to the two role playing conditions of "happy" and "depressed".

First, subjects' scores in the two role playing conditions were converted to change scores from baseline and they were entered into four separate analyses of variance for each of the four dependent measures.

Hypothesis 1 stated that subjects' self-report of role playing under "depressed" instructions would be significantly different from their self-report under "happy" instructions. In terms of the present data analyses, this means that there would be a significant main effect of role playing condition in 3 (Zung SDS group of role playing subject) X 2 (role playing condition) X 2 (order of role playing) analyses of variance.

Hypothesis 2 stated that there will be significant differences among the self-reports of the role playing subjects who scored high, medium, or low on the Zung SDS in role playing under "happy" instructions and under

"depressed" instructions. In terms of the present data analyses, this means that there would be a significant main effect of group in the analyses of variance.

1. Dependent measure: "Happy". Table 1 presents cell means using raw score for the dependent measure "happy".

Table 2 presents cell means using change scores for the dependent measure "happy".

Table 3 presents an analysis of variance of change scores on the dependent measure "happy".

Inspection of Table 3, a summary of ANOVA with change scores, strongly demonstrates a significant main effect of role playing condition on the role playing subjects' self-report of "happiness" ($F(1,37) = 95.74$, $p < .001$). This indicates that the role playing subjects' scores on the "Happiness" scale were significantly different in acting the "happy" condition and acting the "depressed" condition. Specifically, as Table 2 indicates, under acting the "happy" condition, the role playing subjects' self-report of "happiness" changed $\bar{X} = .76$ from their baseline ratings of "happiness" ($\bar{X} = 2.930$), while under acting "depressed" condition, the role playing subjects' self-report of "happiness" changed $\bar{X} = -1.23$ from their baseline. These changes were significantly different from each other at $p < .001$. Thus, the results demonstrate that the subjects rated themselves significantly "happier" in acting the "happy" condition than in acting the "depressed" condition.

Table 1

Mean Scores of Role Playing Subjects' Ratings
on "Happiness" Scale

Role Playing Condition

Group	Order	Baseline Mean	SD	"Happy" Mean	SD	"Depressed" Mean	SD
Low	1[a]	3.714	(.487)	4.235	(.755)	2.428	(1.133)
Zung	2[b]	2.900	(1.100)	4.200	(.918)	1.500	(.707)
Mid	1	2.500	(.534)	2.759	(1.164)	1.750	(1.035)
Zung	2	3.666	(.516)	4.166	(.752)	1.833	(.983)
High	1	1.666	(.816)	3.166	(1.169)	1.500	(.547)
Zung	2	3.166	(1.329)	3.500	(1.378)	1.166	(.408)
Mean		2.930		3.697		1.697	

[a]Order 1: Baseline-"Happy"-"Depressed"

[b]Order 2: Baseline-"Depressed"-"Happy"

Table 2

Mean Change Scores of Role Playing Subjects'
Ratings on "Happiness" Scale

		Role Playing Condition			
		"Happy"		"Depressed"	
Group	Order	Mean	SD	Mean	SD
Low Zung	1[a]	.57	(.96)	-1.29	(1.38)
	2[b]	1.30	(.82)	-1.40	(1.07)
Mid Zung	1	.25	(.89)	- .75	(.89)
	2	.50	(.56)	-1.83	(1.17)
High Zung	1	1.50	(1.05)	- .17	(.41)
	2	.33	(.82)	-2.00	(1.41)
Mean		.76		-1.23	

[a]Order 1: "Happy"-"Depressed"

[b]Order 2: "Depressed"-"Happy"

Table 3

Analysis of Variance for Role Playing Subjects' Ratings
on "Happiness" Scale

Source	DF	MS	F	P
Group (G)	2	.9638	.87	.429
Order (O)	1	5.9700	5.3[7]	.026*
G x O	2	5.6711	5.10	.011*
Error	37	1.1125		
Role (R)	1	81.4541	95.74	.000***
R x G	2	.7004	.82	.447
R x O	1	4.6561	5.47	.025*
R x G x O	2	.1979	.23	.794
Error	37	.8507		

*p < .05

**p < .01

***p < .001

This confirms hypothesis 1. That is, role playing influenced the subjects' self-report of "happiness".

There was no significant main effect of Zung SDS group on the role playing subjects' self-report of "happiness" (F(2,37) = .87, p = .429). This means that group of the role playing subjects (i.e., High Zung, Mid Zung, Low Zung) did not differ among themselves in their self-report of "happiness" under acting "happy" condition and under acting "depressed" condition. The result indicates that regardless of the subject's score on the Zung SDS, she was able to encode both "happiness" and "depression". Hypothesis 2 was not confirmed on the role player subjects' self-report of "happiness".

2. Dependent measure: "Depressed". Table 4 presents cell means using raw scores for the dependent measure "depressed".

Table 5 presents cell means using change scores from the role player subjects' baseline to the role playing conditions on the dependent measure "depressed".

Table 6 presents an analysis of variance of change scores on the dependent measure "depressed".

Inspection of Table 6, a summary of ANOVA with change scores, strongly indicates a significant main effect of role playing condition on the role playing subject's self-report of "depression" (F(1,37) = 83.59, p < .001). This indicates that role playing influenced the subjects'

Table 4

Mean Scores of Role Playing Subjects' Ratings
on "Depression" Scale

		Role Playing Condition					
		Baseline		"Happy"		"Depressed"	
Group	Order	Mean	SD	Mean	SD	Mean	SD
Low	1[a]	1.000	(.00)	1.000	(.00)	2.714	(.951)
Zung	2[b]	1.000	(.00)	1.000	(.00)	3.300	(1.059)
Mid	1	1.125	(.353)	1.375	(1.060)	2.759	(1.164)
Zung	2	1.333	(.816)	1.000	(.000)	3.500	(.836)
High	1	2.166	(1.602)	1.833	(1.602)	2.833	(.983)
Zung	2	1.666	(1.632)	1.166	(.408)	3.500	(.547)
Mean		1.325		1.209		3.093	

[a]Order 1: Baseline-"Happy"-"Depressed"

[b]Order 2: Baseline-"Depressed"-"Happy"

Table 5

Mean Change Scores of Role Playing Subjects'
Ratings on "Depression" Scale

| | | Role Playing Condition | | | |
| | | "Happy" | | "Depressed" | |
Group	Order	Mean	SD	Mean	SD
Low Zung	1[a]	.00	(.00)	1.71	(.95)
	2[b]	.00	(.00)	2.30	(1.06)
Mid Zung	1	.25	(.71)	1.63	(1.41)
	2	-.33	(.82)	2.17	(1.33)
High Zung	1	-.33	(.81)	.67	(2.16)
	2	-.50	(1.22)	1.83	(1.47)
Mean		-.12	(.59)	1.77	(1.39)

[a]Order 1: "Happy"-"Depressed"

[b]Order 2: "Depressed"-"Happy"

Table 6

Analysis of Variance for Role Playing Subjects' Ratings
on "Depression" Scale

Source	DF	MS	F	P
Group (G)	2	2.6615	1.70	.197
Order (O)	1	1.3735	.88	.355
G x O	2	.4465	.29	.754
Error	37	1.5662		
Role (R)	1	72.5609	83.59	.000***
R x G	2	.2138	.25	.783
R x O	1	5.3385	6.15	.018*
R x G x O	2	.2715	.31	.733
Error	37	.8680		

*p < .05
**p < .01
***p < .001

self-report of "depression". It confirms hypothesis 1 on
the dependent measure of "depression".

Specifically, as Table 5 shows, under acting the
"depressed" condition, the role playing subject's self-
report of "depression" changed $\bar{X}$ = 1.77 from their baseline
ratings of "depression" ($\bar{X}$ = 1.325), while under acting the
"happy" condition, their self-report of "depression" changed
$\bar{X}$ = -.12 from their baseline ratings. These changes were
significantly different from each other at $\underline{p}$ < .001. Thus,
these results demonstrate that the subjects rated themselves
significantly more "depressed" in acting the "depressed"
condition than in acting the "happy" condition and it
confirms hypothesis 1.

Testing of hypothesis 2 regarding the effect of the
Zung SDS grouping on role playing was conducted by looking
for a main effect of group on the role playing subjects'
scores of "depression". As table 6 shows, there was no
significant effect of the Zung SDS group: $F(2,37)$ = 1.70,
$\underline{p}$ = .197. This indicates that the subjects' scores were
not significantly different among the three Zung SDS groups
either in acting the "happy" condition or in acting the
"depressed" condition. Regardless of the subjects' scores
on the Zung SDS, she was able to encode both "happiness" and
"depression". Hypothesis 2 was not confirmed on the role
playing subjects' self-report of "depression".

3. Dependent measure: "Pleasant". Table 7 presents cell means using raw scores for the dependent measure "pleasant".

Table 8 presents cell means using change scores from the role player subjects' baseline ratings to the role playing conditions on the dependent measure "pleasant".

Table 9 presents an analysis of variance of change scores on the dependent measure "pleasant".

An examination of Table 9, a summary of ANOVA with change scores, shows a significant main effect of role playing condition on the role playing subjects' self-report of "pleasantness" ($F(1,37) = 98.45$, $\underline{p} < .001$). This indicates that role playing influenced the subjects' self-report of "pleasantness". It confirms hypothesis 1 on the dependent measure of "pleasantness".

Specifically, as Table 8 shows, under acting the "happy" condition, the role playing subject's self-report of "pleasantness" changed $\bar{X} = .12$ from their baseline ratings of "pleasantness" ($\bar{X} = 3.627$) (Table 7), while under acting the "depressed" condition, their self-report of "pleasant-ness" changed $\bar{X} = -1.79$. These changes were significantly different from each other at $\underline{p} < .001$. Thus, the results show that the subjects rated themselves significantly more "pleasant" in acting the "happy" condition than in acting the "depressed" condition. This confirms hypothesis 1.

Testing of hypothesis 2 regarding the effect of the Zung SDS group on role playing was done by looking for a

Table 7

Mean Scores of Role Playing Subjects' Ratings
on "Pleasantness" Scale

		Role Playing Condition					
		Baseline		"Happy"		"Depressed"	
Group	Order	Mean	SD	Mean	SD	Mean	SD
Low	1[a]	4.142	(.690)	4.000	(1.000)	2.142	(.690)
Zung	2[b]	3.700	(.674)	4.200	(.634)	1.600	(.699)
Mid	1	3.500	(.925)	3.250	(1.281)	2.125	(1.125)
Zung	2	4.00	(1.095)	3.833	(1.329)	1.833	(.752)
High	1	3.000	(.894)	3.166	(1.169)	1.833	(.752)
Zung	2	3.333	(1.211)	3.833	(1.169)	1.500	(.836)
Mean		3.627		3.744		1.837	

[a]Order 1: Baseline-"Happy"-"Depressed"

[b]Order 2: Baseline-"Depressed"-"Happy"

Table 8

Mean Change Scores of Role Playing Subjects'
Ratings on "Pleasantness" Scale

		Role Playing Condition			
		"Happy"		"Depressed"	
Group	Order	Mean	SD	Mean	SD
Low Zung	1[a]	-.14	(.69)	-2.00	(1.00)
	2[b]	.50	(.70)	-2.10	(.57)
Mid Zung	1	-.25	(.89)	-1.37	(.74)
	2	-.17	(1.20)	-2.17	(1.20)
High Zung	1	.17	(1.33)	-1.17	(.75)
	2	.50	(.55)	-1.83	(1.47)
Mean		.12	(.89)	-1.79	(.95)

[a]Order 1: "Happy"-"Depressed"

[b]Order 2: "Depressed"-"Happy"

Table 9

Analysis of Variance for Role Playing Subjects' Ratings
on "Pleasantness" Scale

Source	DF	MS	F	P
Group (G)	2	1.2411	1.28	.290
Order (O)	1	.1433	.15	.703
G x O	2	.7830	.81	.454
Error	37	.9702		
Role (R)	1	72.9001	98.45	.000***
R x G	2	.8484	1.15	.329
R x O	1	3.9483	5.33	.027*
R x G x O	2	.0290	.04	.962
Error	37	.7405		

*p < .05
**p < .01
***p < .001

main effect of group on the role playing subjects' self-report of "pleasantness". As Table 9 shows, there was no significant effect of group (Zung SDS) $(F(2,37) = 1.28,$ $p = .290)$. This indicates that the three groups of role playing subjects (Zung Low, Zung Mid., Zung High) did not differ among themselves in their self-report of "pleasant-ness" either in acting the "happy" condition or in the "depressed" condition. That is, regardless of the subject's score on the Zung SDS, she was able to encode both "happiness" and "depression". Hypothesis 2 was not confirmed on the role player subjects' self-report of "pleasantness".

4. Dependent measure: "Anxious". Table 10 presents cell means using raw scores for the dependent measure "anxious".

Table 11 presents cell means using change scores from the role player subjects' baseline ratings to the role playing conditions on the dependent measure "anxious".

Table 12 presents an analysis of variance of change scores on the dependent measure "anxious".

Inspection of Table 12 indicates that there was no significant effect of either the role playing condition $(F(1,37) = .10, p = .751)$ or the Zung SDS group $(F(2,37) =$ .37, $p = .696)$. These results indicate that the role playing subjects' self-report of "anxiousness" was not influenced by either acting the "happy" condition or acting the "depressed" condition. These results also indicate that the role playing subjects' self-report of "anxiousness" was

Table 10

Mean Scores of Role Playing Subjects' Ratings
on "Anxiousness" Scale

Role Playing Condition

		Baseline		"Happy"		"Depressed"	
Group	Order	Mean	SD	Mean	SD	Mean	SD
Low	1[a]	2.142	(1.069)	2.285	(.951)	1.857	(.899)
Zung	2	2.400	(1.429)	2.200	(1.032)	2.100	(.875)
Mid	1	2.500	(1.195)	3.235	(1.356)	2.750	(.886)
Zung	2	2.833	(1.169)	2.500	(1.224)	3.000	(1.095)
High	1	2.833	(1.329)	3.166	(1.471)	2.166	(1.834)
Zung	2	3.500	(1.378)	3.000	(1.673)	4.000	(1.264)
Mean		2.651		2.674		2.581	

[a]Order 1: Baseline-"Happy"-"Depressed"

[b]Order 2: Baseline-"Depressed"-"Happy"

Table 11

Mean Change Scores of Role Playing Subjects'
Ratings on "Anxiousness" Scale

		Role Playing Condition			
		"Happy"		"Depressed"	
Group	Order	Mean	SD	Mean	SD
Low Zung	1[a]	.14	(.69)	-.29	(.95)
	2[b]	-.20	(1.55)	-.30	(1.77)
Mid Zung	1	.62	(1.06)	.25	(o.04)
	2	-.33	(1.63)	.16	(1.94)
High Zung	1	.33	(1.03)	-.67	(1.21)
	2	-.50	(1.55)	.50	(1.77)
Mean		.02	(1.25)	-.07	(1.44)

[a]Order 1: "Happy"-"Depressed"

[b]Order 2: "Depressed"-"Happy"

Table 12

Analysis of Variance for Role Playing Subjects' Ratings
on "Anxiousness" Scale

Source	DF	MS	F	P
Group (G)	2	.9036	.37	.696
Order (O)	1	.6540	.27	.610
G x O	2	.7573	.31	.737
Error	37	2.4648		
Role (R)	1	.0938	.10	.751
R x G	2	.2285	.25	.781
R x O	1	5.9127	6.44	.016*
R x G x O	2	1.2265	1.34	.276
Error	37	.9187		

*p < .05
**p < .01
***p < .001

not influenced whether the subject was in Zung Low, Zung Mid., or Zung High group. Thus, neither hypothesis 1 nor hypothesis 2 was confirmed on the subjects' self-ratings of "anxiousness".

Subsequent analyses. A further inspection of the four ANOVA tables (see Tables 3, 6, 9, and 12) shows a significant interaction effect of order and role playing condition on all four dependent measures (p < .05). These results suggest that the role playing subjects' self-report is influenced not only by what role they played ("happy" vs. "depressed") but also by the order in which they played these two roles. Newman-Keuls tests (Kirk, 1968) revealed that the effect of role on order was significant in acting the "depressed" condition on the target dependent measures of "happiness" (X = -.76 for order 1 vs. X = -1.68 for order 2, p < .05) and "depression" (X = 1.38 for order 1 vs. X = 2.14 for order 2, p < .05). However, the effect of role on order was not significant in acting the "happy" condition on these two dependent measures. This means that in acting the "depressed" condition the subjects' scores on the "depression" scale were significantly higher if they role played "depressed" first than if they role played "happy" first. However, in acting the "happy" condition the subjects' self-ratings of "happiness" and "depression" were not influenced by what role they played first. Hence there was a significant interaction effect of order and role.

These results are informative because they are due largely to the methodology of the present study. That is, the present work employed a repeated measures design with a counterbalanced order and it made possible an assessment of order and role playing condition as independent factors. Since this finding was not predicted a priori according to the experimental manipulation of the present study, one may assess the effect of the antecedent condition on role playing via systematic replication in the future.

Summary of analysis of the role playing subjects' self report. Hypotheses 1 and 2 of the present study were examined by subjecting the role players' self-report on the four dependent measures to four separate analyses of variance: (1) "happiness"; (2) "depression"; (3) "pleasantness"; and (4) "anxiousness". To measure the effect of the experimental manipulation, that is, role instructions for "depression" and "happiness", change scores from baseline to role playing conditions were used for the analyses.

Hypothesis 1 was strongly confirmed on the role playing subjects' self-report of "happiness", "depression", and "pleasantness" but not "anxiousness". The results indicated that the subjects were able to encode "happiness" and "depression" and role playing influenced their self-report of affect.

The present study failed to confirm hypothesis 2 on the four dependent measures by using analysis of variance of change scores. This means that all the subjects, regardless

of their scores on the Zung SDS, were able to encode both "happiness" and "depression" and there was no significant effect of group of subjects in their change scores from baseline to the role playing conditions.

There was a significant interaction effect of role playing condition and order. Newman-Keuls tests indicated that whetehr the subjects encoded "depression" first or "happiness" first influenced their self-report on the four dependent measures when she acted "depressed". This finding was a methodological one because the present study used a repeated measures and a counterbalanced order of role playing conditions. It is an advantage of the present design.

Analysis of the Role Playing Subjects' Self-Report of Acting Ability

Hypothesis 3 stated that there would be significant differences among the three groups of subjects, that is, Zung Low, Zung Mid., and Zung High, in their self-report of acting ability under "depressed" and under "happy" instructions for role playing. Testing of this hypothesis can be done by subjecting the subjects' scores on the Acting Scale to a 2 (role playing condition) X 3 (group of subject on the Zung SDS) X 2 (order of role playing) analysis of variance with repeated measures across role playing conditions. Specifically, one would look for a significant effect of group or an interaction effect of role and Zung SDS group. Table 13 presents the result of an analysis of variance.

Table 13

Analysis of Variance for Role Playing Subjects'
Self-Rated Acting Ability

Source	DF	MS	F	P
Group (G)	2	2.5987	1.72	.193
Order (O)	1	3.4548	2.29	.139
G x O	2	1.8991	1.26	.296
Error	37	1.5089		
Role (R)	1	.1286	.16	.696
R x G	2	4.1397	5.00	.012*
R x O	1	2.8035	3.39	.074
R x G x O	2	.0760	.09	.912
Error	37	.8275		

*p < .05
**p < .01
***p < .001

Table 13 shows that there was a significant interaction effect of role playing condition and Zung SDS group ($F(2,37) = 5.00$, $\underline{p} < .05$). In order to locate specific differences, Newman-Keuls tests were applied to role playing condition X Zung SDS group cell means. Table 14 presents cell means of the role playing subjects' self-report of acting ability.

Newman-Keuls tests indicated that the Low Zung subjects' self-report of ability to act "happy" ($\bar{X} = 3.88$) was significantly higher than that of the High Zung subjects ($\bar{X} = 2.50$) at $\underline{p} < .05$. There was no significant difference between the Low Zung group and the Mid Zung group in their self-report of the ability to act "happy". Thus, regarding the role playing subjects' self-report of the ability to act "happy", the High Zung group was significantly lower than either the Low Zung group or the Mid Zung group. This means that the High Zung group assessed their ability to act "happy" poorer than the other two groups.

There was no significant difference, however, among the three Zung SDS groups in their self-report of the ability to act "depressed": Zung Low $\bar{X} = 3.11$, Zung Mid $\bar{X} = 3.38$, and Zung High $\bar{X} = 3.25$.

These results indicate that hypothesis 3 was partly confirmed: Role playing subjects' scores on the Zung SDS significantly influenced their self-report of how well they acted "happy" but not how well they acted "depressed". Specifically, the Low Zung group and the Mid Zung group

Table 14

Mean Score of Role Playing Subjects'
Self-Rated Acting Ability

		Role Playing Condition			
		"Happy"		"Depressed"	
Group	Order	Mean	SD	Mean	SD
Low Zung	1[a]	3.714	(.487)	3.428	(.975)
	2[b]	4.000	(.942)	2.800	(1.316)
Mid Zung	1	2.625	(1.060)	3.250	(1.035)
	2	3.666	(1.211)	3.500	(.547)
High Zung	1	2.000	(1.264)	3.000	(1.095)
	2	3.000	(1.264)	3.500	(1.378)
Mean		3.233		3.209	

[a]Order 1: "Happy"-"Depressed"

[b]Order 2: "Depressed"-"Happy"

reported that they could act "happy" better than the High Zung group.

Analysis of the Relationship Between the Pretask Measures and the Dependent Measures

Exploratory hypothesis of the present study stated that personality variables as measured by the Zung SDS, Beck Scale, Taylor Manifest Anxiety Scale, and the Ullmann Facilitation-Inhibition Scale would be significantly associated with self-report of role playing subjects in baseline and "depressed" and "happy" role playing conditions.

First, role playing subjects' ratings of "happiness", "depression", "pleasantness" and "anxiousness" were corre- lated with each other. Table 15 presents these inter- correlations.

Inspection of Table 15 shows that role playing subjects' self-report of "happiness" is significantly correlated with their self-report of "pleasantness" (r = .6975, p < .001) and "depression" (r = -.2889, p < .05). Similarly, role playing subjects' self-report of "pleasantness" was significantly correlated with their self report of "depression" (r = -.3540, p < .05). These correlations were in the predicted direction as can be seen from hypothesis 1. That is, role playing subjects' self-report indicated that if they acted "happy", they rated themselves "happier" and more "pleasant" than if they acted "depressed".

Table 15

Intercorrelations of Role Playing Subjects' Dependent Measures
in Baseline

	"Happy"	"Depressed"	"Pleasant"	"Anxious"
"Happy"	1.00			
"Depressed"	- .29*	1.00		
"Pleasant"	.70***	- .35*	1.00	
"Anxious"	- .13	.17	- .08	1.00

*p < .05
**p < .01
***p < .001

Next, role playing subjects' scores on the Zung SDS, Beck Scale, Taylor MAS, and the Facilitation-Inhibition Scale were correlated with role playing subjects' scores on the four dependent measures of "happiness", "pleasantness", "depression" and "anxiousness" across baseline, acting the "happy" condition and acting the "depressed" condition. Table 16 presents intercorrelations of these scores.

Of the 48 Pearson product moment correlation coefficients between the pretask measures and the dependent measures (see Table 16), 14 coefficients were significant at p < .05 or better.

As Table 16 shows, the Zung SDS correlated significantly with all of the dependent measures in the baseline. Specifically, the Zung SDS correlated with role playing subjects' baseline self-report of "happiness" (r = -.34, p < .05), "depression" (r = .29, p < .05), "pleasantness" (r = -.29, p < .05), and "anxiousness" (r = .36, p < .05). These significant correlations indicate that the Zung SDS is effective in baseline condition of the role playing subjects. In acting the "happy" condition, the Zung SDS correlated significantly with the role playing subjects' self-report of "happiness" (r = -.31, p < .05) and "anxiousness" (r = .28, p < .05). In acting the "depressed" condition, the Zung SDS correlated significantly with the role playing subjects' self-report of "anxiousness" (r = .30, p < .05). These results indicate that the Zung SDS was most significantly correlated to role playing

Table 16

Intercorrelations of Pretask Measures and Dependent Measures
Using Raw Scores

Role Playing Condition

	Baseline				Acting "happy"				Acting "depressed"			
	HAP[a]	DEP[b]	PLT[c]	ANX[d]	HAP2	DEP2	PLTZ	ANX2	HAP3	DEP3	PLT3	ANX3
Zung[e]	-.34*	.29*	-.29*	.36*	-.31*	.22	-.17	.28*	-.13	.01	.01	.30*
Beck[f]	-.23	.52***	-.25	.47**	-.24	.37**	-.16	.30*	-.13	.05	.01	.24
MAS[g]	-.25	.21	-.16	.39**	-.18	.18	-.14	.21	.14	.15	.01	.29*
F-I[h]	.22	-.26	.22	-.36*	.30*	-.23	.25	-.16	.05	-1.5	-.04	-.03

[a]HAP = HAPPY
[b]DEP = DEPRESSED
[c]PLT = PLEASANT
[d]ANX = ANXIOUS

[e]Zung: The Zung Self-Rating Depression Scale
[f]Beck: Beck Inventory for Measuring Depression
[g]MAS: Taylor Manifest Anxiety Scale
[h]F-I: Ullmann Facilitation-Inhibition Scale

*p < .05
**p < .01
***p < .001

subjects' scores in baseline. When the situation changed, however, the Zung SDS was not consistent.

The Beck Scale was most significantly associated with the role playing subjects' scores in baseline. As Table 16 shows, the Beck Scale correlated significantly with the subjects' baseline scores of "depression" (r = .52, p < .001) and "anxiousness" (r = .47, p < .01). The degree of association between the Beck Scale and the role playing subjects' scores on these measures were weaker in acting the "happy" condition. In acting the "depressed" condition, the Beck Scale was not significantly associated with the subjects' scores on any of the dependent measures (see Table 16).

The Taylor MAS correlated significantly with the role playing subjects' baseline scores of "anxiousness" (r = .39, p < .01) and their ratings of "anxiousness" in acting the "depressed" condition (r = .29, p < .05).

The Facilitation-Inhibition Scale correlated significantly with the role playing subjects' baseline ratings of "anxiousness" (r = -.36, p < .05) and their self-report of "happiness" in acting the "happy" condition (r = .30, p < .05).

In sum, these results indicate that the degree of association between each personality variable and role playing subjects' self-report was most significant in the subjects' baseline on the four dependent measures of "happiness", "depression", "pleasantness", and "anxiousness".

When the situation changed from baseline to acting the "happy" or "depressed" conditions, the personality scales were not consistent.

To further examine the degree of association between these personality inventories and the dependent measures, all the subjects' scores on the four affect rating scales ("happy", "depressed", "pleasant" and "anxious") were converted to change scores from baseline to role playing conditions. Table 17 presents intercorrelations between the pretask measures and the dependent measures using change scores from the baseline. As Table 17 shows, across two role playing conditions, there were only four significant correlation coefficients out of 32 intercorrelations. In acting "happy" condition, the Beck Scale correlated significantly with role playing subjects' change scores of "depression" (r = -.42, p < .01). The Beck Scale also correlated significantly with role playing subjects' change scores of "depression" (r = -.33, p < .05) in acting "depressed" condition. This means that the Beck Depression Inventory was significantly related to subjects' scores in baseline, acting the "happy" condition, and acting the "depressed" condition.

The Zung SDS was significantly related to role playing subjects' self-report of "pleasantness" (r = .27, p < .05). There was no significant correlation between Taylor MAS and any of the dependent measures across two role playing conditions. The Facilitation-Inhibition Scale correlated

Table 17

Intercorrelations of Pretask Measures and Dependent Measures
Using Change Scores

<u>Role Playing Condition</u>

	<u>Acting "happy"</u>					<u>Acting "depressed"</u>			
	$HAP2^a$	$DEP2^b$	$PLT2^c$	$ANX2^d$		HAP3	DEP3	PLT3	ANX3
$Zung^e$	.02	-.23	.08	.09		.23	-.20	.27*	-.04
$Beck^f$	-.02	-.42**	.06	-.18		.13	-.33*	.25	-.20
MAS^g	.07	-.14	-.00	-.19		.13	.05	.16	.08
$F-I^h$	.11	-.16	.08	.22		-.16	.08	-.24	.31*

[a] HAP=HAPPY   [e] Zung: The Zung Self-Rating Depression Scale
[b] DEP=DEPRESSED   [f] Beck: Beck Inventory for Measuring Depression
[c] PLT=PLEASANT   [g] MAS: Taylor Manifest Anxiety Scale
[d] ANX=ANXIOUS   [h] F-I: Ullmann Facilitation-Inhibition Scale

*$\underline{p} < .05$
**$\underline{p} < .01$
***$\underline{p} < .001$

significantly with role player subjects' self-report of "anxiousness" (r = .31, p < .05) in acting the "happy" condition.

The results indicate that when role playing subjects' scores on the four dependent measures were converted to change scores from baseline, the degree of association was weaker between the pretask measures and the dependent measures than when absolute scores were used.

In summary, the personality variables as measured by the Zung SDS, the Beck Scale, Taylor MAS, and the Facilitation-Inhibition Scale were most significantly associated with role player subjects' baseline. When the situation changed, however, these personality variables were not consistent. It suggests that these scales are effective in predicting the subjects' specific role playing, such as baseline. Exploratory hypothesis was confirmed under a specific condition.

Analysis of Observer-Judges' Rating of Role Playing Subjects for Validation

Reliability of the ratings by untrained observer-judges. For the purpose of validating the subjects' role playing reliability of the validating instrument becomes very important (Ebel, 1972). In the context of the present study, there are two ways to estimate the reliability of judge ratings. One is a post-hoc measure and is an indirect estimate. That is, by looking at the results of

analysis of variance performed on judge scores. If the ratings are random across observer-judges, effects of role playing will not yield a significant result. This measure is an indirect one and at best complimentary to a more stringent measure of reliability of observer-judge ratings.

For the purpose of the present study the Spearman-Brown prediction formula (Ebel, 1972; McNemar, 1969) was applied to estimate the reliabilities of ratings by observer-judges of subjects on the two target dependent measures of "happiness" and "depression" in baseline, acting the "happy" and acting the "depressed" conditions. Each of the nine groups of observer-judges was split into random halves and the pairs of mean ratings on each subject were computed for the two subgroups for "depression" and "happiness". The two sets of means within the same scale were correlated with N equal to the number of subjects. Then their correlation coefficients were adjusted by the Spearman-Brown prediction formula:

$$\text{Adjusted } \underline{r} = \frac{2\underline{r}}{1 + \underline{r}} \quad \text{(Ebel, 1972, p. 413)}$$

Table 18 presents the reliability estimates of the nine groups for their ratings of "happiness" and "depression". As Table 18 shows, general reliabilities of nine groups of observer-judges' ratings of "happiness" ranged from .94 to .98 with a median of .96 ($\underline{p}$ < .001). Similarly, general reliabilities of nine groups of observer-judges' ratings of "depression" ranged from .95 to .99 with a median of

Table 18

Reliability Estimates of Observer-Judges[a]

	Scale	
Judge Group	"Happy"	"Depressed"
Group No. (n)		
1 (N = 10)	.96[a]***	.97***
2 (N = 12)	.94***	.97***
3 (N = 15)	.97***	.97***
4 (N = 10)	.98***	.97***
5 (N = 14)	.96***	.98***
6 (N = 11)	.98***	.99***
7 (N = 11)	.96***	.95***
8 (N = 12)	.96***	.98***
9 (N = 12)	.94***	.97***
Median	.96***	.97***

***$p < .001$

[a]Reliability estimates of judges based upon Spearman-Brown Formula

.97 (p < .001). These highly significant reliability
estimates of the <u>untrained</u> observer-judges provide a strong
ground to use their ratings in order to validate subjects'
role playing within the context of the present work. Further,
as will be shown in the analyses of observer-judges' ratings
in the subsequent section, nonrandomness of judge ratings
will be demonstrated by a strong main effect of role playing
condition.

<u>Analysis of observer-judges' ratings for the purpose of</u>
<u>validating role playing under "happy" and "depressed"</u>
<u>instructions</u>. This analysis concerns the testing of
hypotheses 4, 5, 6, and 7. Observer-judges rated each role
playing subject on nine affect rating scales: (1) "Happy";
(2) "Depressed"; (3) "Pleasant"; (4) "Anxious"; (5) "Sad";
(6) "Disgusted"; (7) "Fearful"; (8) "Surprised"; and
(9) "Angry".

For each subject mean ratings of the observer-judge
scores on each of these 9 affect rating scales were com-
puted for each role playing condition and baseline. Each
role playing subject received 3 sets (baseline, "happy"
condition, and "depressed" condition) of 9 scores:
(1) "happy"; (2) "depressed"; (3) "pleasant"; (4) "anxious";
(5) "sad"; (6) "disgusted"; (7) "fearful"; (8) "surprised";
and (9) "angry". These scores were available to validate
subjects' role playing under "happy" and "depressed"
instructions.

Four scales correspond to role playing subjects' self-report. They are "happiness", "depression", "anxiousness", and "pleasantness" scales. Analyses of observer-judges' rating on these four scales should offer a direct validation of subjects' role playing under "happy" and "depressed" instructions.

Testing of hypotheses 4, 5, 6, and 7 can be done most effectively by subjecting scores on these four target measures to 3 (group of subject: High Zung, Mid Zung, Low Zung) X 2 (order of role playing: "happy"-"depressed", "depressed"-"happy") X 3 (role playing condition: Baseline, "happy", "depressed") analysis of variance with repeated measures across role playing conditions. Four separate analyses of variance were conducted.

1. Dependent measure: "Happy". Table 19 presents mean scores of observer-judges' ratings of role playing subjects on the "happiness" scale.

Table 20 presents an analysis of variance of observer-judges' ratings of role playing subjects on the "happiness" scale.

Hypothesis 4 is confirmed when there is a significant main effect of role playing condition in ANOVA. Table 20 shows a strong main effect of role playing condition $(F(2,68) = 175.43$, $p < .001)$. There was no other significant effect. This means that observer-judges' ratings of role playing subjects on the "happiness" scale were significantly different in the three independent conditions

Table 19

Mean Scores of Observer-Judges' Rating of
Role Player Subjects on "Happiness" Scale

Role Playing Condition

		Baseline		"Happy"		"Depressed"	
Group	Order	Mean	SD	Mean	SD	Mean	SD
Low	1	3.070	(.565)	3.711	(.897)	1.626	(.216)
Zung	2	3.133	(.918)	3.570	(.819)	1.480	(.580)
Mid	1	2.980	(.500)	3.755	(.461)	1.681	(.689)
Zung	2	2.591	(.327)	4.000	(.288)	1.568	(.477)
High	1	2.403	(.519)	3.361	(.592)	1.336	(.183)
Zung	2	2.491	(.796)	3.188	(.990)	1.246	(.374)
Mean		2.813	(.698)	3.594	(.729)	1.489	(.467)

Table 20

Analysis of Variance for Observer-Judge Ratings
of Role Playing Subjects on "Happiness" Scale

Source	DF	MS	F	P
Group (G)	2	2.2623	3.14	.056
Order (O)	1	.1541	.21	.646
G x O	2	.0016	.00	.998
Error	34	.7195		
Role (R)	2	43.5464	175.43	.000***
R x G	4	.3245	1.31	.276
R x O	2	.0212	.09	.918
R x G x O	4	.1956	.79	.537
Error	68	.2482		

*p < .05
**p < .01
***p < .001

of baseline, "happy", and "depressed". Thus hypothesis 4
was confirmed for the dependent measure of "happiness".

To examine further the effect of role playing instruc-
tions, Newman-Keuls tests were applied to the cell means
(see Table 19) across role playing conditions. Observer-
judges' ratings of subjects on the "happiness" scale were
significantly higher in acting the "happy" condition
($\bar{X}$ = 3.594) than either the "depressed" condition ($\bar{X}$ = 1.489)
or baseline condition ($\bar{X}$ = 2.814) at $\underline{p}$ < .01 level of
significance.

These results strongly confirm hypothesis 5. That is,
observer-judges' rating of subjects' role playing under
"happy" and "depressed" instructions were significantly
different from their rating of subjects' baseline in the
predicted direction.

There was no significant effect of the Zung SDS group
of subjects (see Table 20). This means that observer-
judges' rating of role playing subjects failed to
discriminate grouping of subjects according to the Zung SDS.
Hypotheses 6 and 7 were not confirmed on observer-judges'
ratings of "happiness".

In sum, the results demonstrated a strong main effect
of experimental manipulation, that is, role playing
condition. The ratings made by observer-judges of the
subjects on the dependent measure of "happiness" in the
three independent conditions of baseline, "happy" and
"depressed" were significantly different at $\underline{p}$ < .001.

These results confirm hypotheses 4 and 5. Hypotheses 6 and 7 were not confirmed. Thus, subjects' role playing under "happy" and "depressed" instructions was strongly validated by observer-judges' ratings.

2. Dependent measure: "Depressed". Table 21 displays mean scores of observer-judges' ratings of role playing subjects on the "depression" scale.

Table 22 presents an analysis of variance of observer-judges' ratings of role playing subjects on the "depression" scale.

Hypothesis 4 is confirmed when there is a significant main effect of role playing condition in ANOVA. Table 22 shows a strong main effect of role playing condition ($F(2,68) = 115.59$, $p < .001$). There was no interaction effect. Therefore, this means that the experimental manipulation worked. That is, observer-judges' ratings of role playing subjects in the three independent conditions of baseline, "happy" and "depressed" were significantly different on the dependent measure "depression". Hypothesis 4 was confirmed.

To examine further the effect of role playing condition, Newman-Keuls tests were applied to cell means across role playing conditions (see Table 21). Observer-judges' ratings of subjects on the "depression" scale were significantly higher in acting "depressed" condition ($\bar{X} = 2.955$) than in acting "happy" condition ($\bar{X} = 1.171$) or in baseline ($\bar{X} = 1.497$). This was significant at $p < .01$. Hypothesis 5

Table 21

Mean Scores of Observer-Judges' Ratings of
Role Playing Subjects on "Depression" Scale

| | | Role Playing Condition | | | | | |
| | | Baseline | | "Happy" | | "Depressed" | |
Group	Order	Mean	SD	Mean	SD	Mean	SD
Low	1	1.210	(.102)	1.046	(.051)	2.813	(.685)
Zung	2	1.326	(.369)	1.194	(.312)	3.033	(.852)
Mid	1	1.576	(.485)	1.140	(.097)	2.571	(1.062)
Zung	2	1.466	(.409)	1.035	(.083)	2.540	(.674)
High	1	1.821	(.882)	1.201	(.276)	3.083	(.785)
Zung	2	1.760	(.646)	1.393	(.654)	3.636	(.769)
Mean		1.497	(.534)	1.171	(.319)	2.955	(.844)

Table 22

Analysis of Variance for Observer-Judge Ratings
of Role Playing Subjects on "Depression" Scale

Source	DF	MS	F	P
Group (G)	2	2.0795	4.57	.017*
Order (O)	1	.3427	.75	.391
G x O	2	.2104	.46	.634
Error	34	.4547		
Role (R)	2	34.2364	115.59	.000***
R x G	4	.4669	1.58	.190
R x O	2	.1523	.51	.600
R x O x G	4	.0804	.27	.895
Error	68	.2961		

  *p < .05
 **p < .01
***p < .001

was confirmed. That is, observer-judges' rating of subjects' role playing under "happy" and "depressed" instructions were significantly different from their ratings of subjects' baseline in the predicted direction.

Testing of hypotheses 6 and 7 were done by looking for a significant effect of the Zung SDS group factor. As Table 22 shows, there was a significant main effect of the Zung SDS group factor ($F(2,34) = 4.57$, $\underline{p} < .05$). This means that the Sung SDS scores of role playing subjects influenced observer-judges' ratings of role playing subjects on the "depression" scale.

To examine specific differences among the three Zung SDS groups on the dependent measure "depression", Newman-Keuls tests were applied to group X role cell means. Newman-Keuls tests indicated that the Zung High group ($\bar{X} = 1.791$) was significantly different from the Zung Low group ($\bar{X} = 1.282$) on observer-judges' baseline ratings of role playing subjects on the "depression" scale. However, there was no significant difference among the three Zung SDS groups on the observer-judges' ratings of role playing subjects on the "depression" scale when they were acting "happy": Zung Low $\bar{X} = 1.139$, Zung Mid $\bar{X} = 1.087$, Zung High $\bar{X} = 1.297$. Similarly, there was no significant difference among the three Zung SDS groups on the observer-judges' ratings of role playing subjects on the "depression" scale when they were acting "depressed": Zung Low $\bar{X} = 2.951$, Zung Mid $\bar{X} = 2.556$, Zung High $\bar{X} = 3.360$.

These results confirmed hypotheses 6 and 7 in this specific situation but not in acting the "happy" or acting the "depressed" situations. These results are consistent with the correlational analyses performed on the Zung SDS and the dependent measures in the earlier part of the result section in the present study.

In sum, the results of an analysis of variance performed on observer-judges' ratings of role playing subjects on the "depression" scale demonstrated a strong main effect of the experimental manipulation, that is, role playing condition. The ratings made by observer-judges of the subjects in the three independent conditions of baseline, "happy" and "depressed" were significantly different. These results strongly confirm hypotheses 4 and 5. Hypotheses 6 and 7 regarding the effect of the Zung SDS group were confirmed in the subjects' baseline on the observer-judges' ratings of "depression" but they were not confirmed in either acting the "happy" condition or acting the "depressed" condition.

3. Dependent measure: "Pleasant". Table 23 presents mean scores of observer-judges' ratings of role playing subjects on the "pleasantness" scale.

Table 24 presents an analysis of variance of observer-judges' ratings of role playing subjects on the "pleasantness" scale.

Inspection of Table 24 shows a strong main effect of role playing condition ($F(2,68) = 140.67$, $p < .001$). There

Table 23

Mean Scores of Observer-Judges' Rating of
Role Playing Subjects on "Pleasantness" Scale

		Role Playing Condition					
		Baseline		"Happy"		"Depressed"	
Group	Order	Mean	SD	Mean	SD	Mean	SD
Low	1	3.341	(.519)	3.630	(.715)	1.793	(.421)
Zung	2	3.132	(.746)	3.580	(.681)	1.719	(.570)
Mid	1	3.236	(.662)	3.556	(.357)	1.878	(.705)
Zung	2	2.785	(.439)	3.971	(.253)	1.730	(.466)
High	1	2.481	(.710)	3.543	(.474)	1.583	(.493)
Zung	2	2.636	(.755)	3.275	(.905)	1.553	(.543)
Mean		2.955	(.692)	3.591	(.608)	1.710	(.520)

Table 24

Analysis of Variance for Observer-Judge Ratings
of Role Playing Subjects on "Pleasantness" Scale

Source	DF	MS	F	P
Group (G)	2	1.5355	2.50	.097
Order (O)	1	.1566	.25	.617
G x O	2	.0115	.02	.981
Error	34	.6145		
Role (R)	2	35.2384	140.67	.000***
R x G	4	.2938	1.17	.330
R x O	2	.0982	.39	.677
R x G x O	4	.3236	1.29	.282
Error	68	.2505		

*p < .05
**p < .01
***p < .001

was no other significant effect. This means that the observer-judges' ratings of role playing subjects on the "pleasantness" scale were significantly different in the three independent conditions of baseline, "happy" and "depressed". Hypothesis 4 was strongly confirmed for the dependent measures of "pleasantness".

To locate specific differences across role playing conditions on the observer-judges' ratings of role playing subjects on the "pleasantness" scale, Newman-Keuls tests were applied using the cell means across role playing conditions (see Table 23). Observer-judges' ratings of subjects on the "pleasantness" scale were significantly higher in acting the "happy" condition ($\bar{X}$ = 3.591) than in either acting the "depressed" condition ($\bar{X}$ = 1.710) or in the baseline ($\bar{X}$ = 2.955). These three scores were significantly different from each other at p < .01.

These results strongly confirmed hypothesis 5. That is to say, observer-judges' ratings of subjects' role playing under "happy" and "depressed" instructions were significantly different from their rating of subjects' baseline in the predicted direction.

There was no significant effect of the Zung SDS group of subjects (see Table 20). This means that observer-judges' ratings of role playing subjects in the three Zung SDS groups were not significantly different. Hypotheses 6 and 7 were not confirmed on observer-judges' ratings of "pleasantness".

4. Dependent measure: "Anxious". Table 25 presents
mean scores of observer-judges' ratings of role playing
subjects on the "anxiousness" scale.

Table 26 presents an analysis of variance of observer-
judges' ratings of role playing subjects on the "anxiousness"
measure.

Inspection of Table 26 shows a strong main effect of
role playing condition ($F(2,68) = 41.11$, $p < .001$). There
was no other significant effect. This means that the
observer-judges' ratings of role playing subjects on the
"anxiousness" scale were significantly different in the
three independent conditions of baseline, "happy" and
"depressed". Hypothesis 4 was strongly confirmed on the
dependent measure of "anxiousness".

To locate specific differences across role playing
conditions on the observer-judges' ratings of role playing
subjects on the "anxiousness" measure, Newman-Keuls tests
were applied using cell means across role playing conditions
(see Table 25). Observer-judges' ratings of role-playing
subjects on the "anxiousness" scale were significantly
higher in acting the "happy" condition ($\bar{X} = 2.440$) than
acting either the "depressed" condition ($\bar{X} = 1.555$) or the
baseline condition ($\bar{X} = 1.893$) at $p < .01$ level of
significance. The three scores were also significantly
different from each other ($p < .01$). These results confirm
hypothesis 5. That is, observer-judges' rating of subjects'
role playing under "happy" and "depressed" instructions

Table 25

Mean Scores of Observer-Judges' Ratings of
Role Playing Subjects on "Anxiousness" Scale

Role Playing Condition

Group	Order	Baseline		"Happy"		"Depressed"	
		Mean	SD	Mean	SD	Mean	SD
Low	1	1.936	(.443)	2.476	(.318)	1.546	(.386)
Zung	2	1.993	(.664)	2.191	(.523)	1.421	(.306)
Mid	1	2.021	(.368)	2.788	(.297)	1.565	(.374)
Zung	2	1.985	(.333)	2.505	(.665)	1.608	(.412)
High	1	1.605	(.483)	2.590	(.634)	1.780	(.338)
Zung	2	1.755	(.344)	2.261	(.749)	1.498	(.356)
Mean		1.893	(.475)	2.440	(.558)	1.555	(.353)

Table 26

Analysis of Variance for Observer-Judge Ratings
of Role Playing Subjects on "Anxiousness" Scale

Source	DF	MS	F	P
Group (G)	2	.3085	1.11	.342
Order (O)	1	.4256	1.53	.225
G x O	2	.0084	.03	.970
Error	34	.2786		
Role (R)	2	8.0312	41.11	.000***
R x G	4	.2478	1.27	.291
R x O	2	.3049	1.56	.217
R x G x O	4	.0494	.25	.907
Error	68	.1953		

*p < .05
**p < .01
***p < .001

were significantly different from their rating of subjects'
baseline.

Interestingly, the observer-judges' ratings of role
playing subjects on the "anxiousness" scale was highest in
acting the "happy" condition and lowest in acting the
"depressed" condition. Although it did not reach signifi-
cance, this was also observed in role playing subjects'
self report of "anxiousness" (see Table 10). It suggests
that lay people use the term "anxiousness" differently than
professional people or clinicians. It also calls attention
to the ambiguous nature of the very concept "anxiety"
(Lewis, 1970).

There was no significant effect of the Zung SDS group
factor (see Table 26). Hypotheses 6 and 7 were therefore
not confirmed on observer-judges' ratings of "anxiousness".

In sum, the results of an analysis of variance performed
on observer-judges' ratings of role playing subjects on the
"anxiousness" scale demonstrated a strong amin effect of
the experimental manipulation, that is, role playing con-
dition. Observer-judges' ratings of the subjects were
significantly different in the three independent conditions
of baseline, "happy" and "depressed". These results con-
firmed hypotheses 4 and 5 and provided a validation of the
subjects' role playing. Hypotheses 6 and 7 were not
confirmed, as there was no significant effect of the Zung
SDS group.

<u>Summary of observer-judges' ratings of role playing</u>

<u>subjects for validation</u>. In the present study, the observer-

judges' ratings of role playing subjects were used solely

for the purpose of validating the subjects' role playing

under "happy" and "depressed" instructions on the four

dependent measures of "happiness", "depression", "anxious-

ness", and "pleasantness".

Hypotheses 4 and 5 concerned the effectiveness of the

experimental manipulation, that is role playing conditions

for "happiness" and "depression". Analyses of variance

performed on the four dependent measures of "happiness",

"depression", "pleasantness", and "anxiousness" strongly

demonstrated the main effect of role playing condition.

Newman-Keuls analyses further indicated that the ratings

made by observer-judges of the subjects on the dependent

measure of "depression" were significantly higher in the

"depressed" condition than in the "happy" condition, and

both were significantly different from baseline in the

predicted direction. Similarly, the ratings made by

observer-judges of the subjects on the dependent measure of

"happiness" were significantly higher in the "happy"

condition than in the "depressed" condition, and both were

significantly different from baseline in the predicted

direction. These results confirmed hypotheses 4 and 5 and

provided an independent validation of the subjects' role

playing by observer-judges.

Hypotheses 6 and 7 concerned the effect of the Zung SDS on the observer-judges' ratings of role playing subjects on the four dependent measures. These hypotheses were partly confirmed and in specific conditions. The observer-judges' ratings of the subjects in the three Zung SDS groups were significantly different on the dependent measure of "depression". Newman-Keuls tests revealed that the ratings mad by observer-judges of the subjects in the Zung High group was significantly higher on the "depression" measure than the ratings made by observer-judges of the subjects in either the Zung Mid or Low groups. There was no significant difference in observer-judges' scores of the subjects in Zung Mid and Low groups. Thus, hypotheses 6 and 7 were confirmed in baseline but not in acting the "happy" or "depressed" conditions.

Summary of the Results

The present study demonstrated the following points.

1. The untrained subjects can encode "happiness" and "depression". There was a strong main effect of role playing condition on the subjects' self-report of "happiness", "depression" and "pleasantness". Hypothesis 1 was confirmed.

2. The ratings made by observer-judges of the subjects in the three independent conditions of baseline, "happy" and "depressed" were significantly different on the four dependent measures of "happiness", "depression", "pleasant-ness", and "anxiousness". Hypothesis 4 was confirmed.

3. The ratings made by observer-judges of the subjects in the role playing conditions of "happy" and "depressed" were significantly different from their ratings of the subjects in baseline in the predicted direction. Hypothesis 5 was confirmed.

4. The effect of the Zung SDS group was not significant on the subjects' self-report of "happiness", "depression", "pleasantness", and "anxiousness" in either the baseline, acting the "happy" condition, or in acting the "depressed" condition. Hypothesis 2 was not confirmed.

5. The self-reports of the ability to act "happy" by the subjects in the Zung Low and Mid groups were significantly higher (meaning better) than the self-reports of the subjects in the Zung High group. However, the three Zung SDS groups did not differ among themselves in their self-reports of the ability to act "depressed". Thus, hypothesis 3 was confirmed in acting the "happy" condition but not in acting the "depressed" condition.

6. The ratings made by observer-judges of the subjects in the three Zung SDS groups were significantly different on the dependent measure of "depression" in baseline, but not in the two acting conditions of "happy" and "depressed". Thus, hypotheses 6 and 7 were partly confirmed.

7. The personality variables, as measured by the Zung SDS, Beck Scale, Taylor MAS, and Facilitation-Inhibition Scale were most significantly correlated to the scores in baseline on the four dependent measures. But when the

situation changed from baseline to acting the "happy" condition or acting the "depressed" condition, they were not consistent. Thus, exploratory hypothesis was partly confirmed.

IV. DISCUSSION

A first purpose of the present study was to examine whether untrained people could encode affect and the effect this might have on them. A second purpose of this study was to examine whether untrained people could decode the affect encoded by the prior subjects. The present work investigated these questions by developing a research strategy which enabled an assessment of affect encoding and decoding within a social communication framework. Specifically, the present study examined whether untrained subjects can encode "happiness" and "depression" under role instructions and whether untrained observer-judges can discriminate these affects on the basis of the role playing subjects' behavior.

The present study demonstrated that untrained subjects can encode "happiness" and "depression" via overt behavior within a social context. It also demonstrated that encoding "happiness" and "depression" influences subjects' self-report of their current affect.

Demonstration of Experimental Manipulation: Hypothesis 1

There was a very strong main effect of role playing condition on the subjects' self-report of their affect under baseline, "happy" and "depressed" instructions. This confirmed hypothesis 1 of the present study.

The subjects responded to the role instructions and encoded "happiness" and "depression while being interviewed.

Their self-report of affect changed significantly according to roles. They rated themselves significantly "happier", more "pleasant" and less "depressed" while they were acting "happy" than while they were acting "depressed". In contrast, they rated themselves significantly more "depressed", more "unhappy", and more "unpleasant" while they were acting "depressed" than while they were acting "happy". These changes in self-report of affect were examined by using change scores from the subjects' own baseline to each role playing condition. As discussed earlier, in the present study, an analysis of variance of change scores offers the most stringent testing of hypothesis 1 and it was strongly confirmed.

These results demonstrated that untrained subjects could encode "happiness" and "depression" in a socially relevant context of a dyadic interview situation. They were also able to encode these affects with minimum instructions. That is, subjects' spontaneous actions were encouraged. These results extend prior work on affect and communication (Buck et al., 1972; Ekman, Friesen & Ellsworth, 1972; Zuckerman et al., 1975, 1976) by increasing the generalizability of the findings through the use of untrained people as subjects role playing in a social context.

The results also demonstrated that role playing influenced self-observation of the person (Bem, 1972) and that affect could be modified according to specific role

enactments and situations. James (1884), for example, stated" "Sit all day in a moping posture, sigh, and reply to everything with a dismal voice, and your melancholy lingers" (p. 22).

The present study used a repeated measured design. Subjects were asked to encode the two contrasting responses under "happy" and "depressed" instructions in a counter-balanced order. This method produced valuable information regarding the behavioral repertoire of the subjects. The subjects were able to enact behaviors under both "happy" and "depressed" instructions. In the present study, behavior change under role instructions was accompanied also by change in self-report. Kelly (1955) argued that engaging in incompatible new behaviors helps people change their undesirable behaviors. He stated that "a person is what he does, and by fixed-role therapy, he (the therapist) encouraged the clients to see himself in the light of this viewpoint" (p. 403).

These results which showed a significant change in self-report of role playing subjects provided evidence to confirm the strength of the experimental manipulation employed in the present study.

A plausible alternative hypothesis (Campbell & Stanley, 1963) for a significant change in self-report of role playing subjects may be the effect of demand characteristics of the experiment (Orne, 1962). The present author calls attention to the specific experimental procedure of this

study to account for the results. First, the role playing subjects were not given any definition of either "depression" or "happiness" itself, but rather told to remember a time when they felt "depressed" or "happy". Therefore, this method permitted variability of subjects' behaviors under role instructions. Secondly, the present study did not employ standard "mood induction" material, such as a set of negative self-statements (e.g., Coleman, 1975; Natale, 1977; Strickland, Hale, & Anderson, 1975; Veltan, 1968). Instead, the present study facilitated the subjects' spontaneous actions by alerting them to their own experiences through the use of cues and prompts (cf. Barber, 1972). This means that specific overt behaviors were never defined but rather each person remembered the time when she was very "depressed" or "happy". Thus, role playing was specific to the individual subjects. These two points, in essence, increased subject variance, and yet the results were consistent across role playing subjects. That is, there was a strong main effect of role playing condition on the subjects' self-report of affect.

Furthermore, when the experiment is viewed as a social influence process (Rosenthal & Rosnow, 1969), a dyadic interview situation used in the present study can approximate a social situation. Prior work on the communication of affect has been conducted without a context. The present procedure enhanced the external validity (Campbell, 1959) of this study.

Most importantly, the present study went beyond self-report measures of role playing subjects. All the videotape segments of the subjects' interviews in baseline and in the acting "happy" and the "depressed" conditions were subjected to an independent validation by using observer-judges (except where tapes were not permitted to use by three subjects). All of these points support the present findings. That is, untrained people can communicate affect in a socially relevant context and role playing influences the person's self-report of affect.

Person-Situation Interaction in Affect Encoding: Hypothes 2, 3

The present study investigated the impact of personality variables in affect encoding. Specifically, the subjects were stratified into three groups on the basis of their scores on the Zung SDS: Low Zung, Mid Zung, and High Zung. Hypothesis 2 stated that the three groups differ significantly in the role playing subjects' self-reports in acting the "depressed" condition and the "happy" condition respectively. This was tested by using change scores from baseline to the two role playing conditions. There was no significant main effect of the Zung SDS group on self-report of the role playing subjects.

Regardless of the subjects' scores on the Zung SDS, they were able to role play both "happy" and "depressed". The subjects were also able to shift these two roles according

to role instructions. These findings point out the importance of assessing specific situations in which people encode affect and the need for a further examination of the interrelationship between the situation and the person in the communication of affect.

The importance of assessing a situation-person interaction (Bowers, 1973) was demonstrated further when the pretask measures were correlated with the role playing subjects' self-report (dependent measures) across baseline and the two role playing conditions. The degree of association between the dependent measures and the pretask measures changed considerably depending on specific role playing condition. Personality measures, such as the Zung SDS, Taylor MAS, Beck Scale, and the Facilitation-Inhibition Scale, correlated most significantly to the subjects' baseline, when they were not role playing. The Zung SDS, for example, correlated significantly with the four self-report, dependent measures of "happiness", "depression", "pleasantness", and "anxiousness" in the role playing subjects' baseline condition. But the Zung SDS was not consistently correlated to these dependent measures when the situation changed to role playing "happy" and "depressed". These results suggest that personality measures add information to activity in specific context but do not necessarily generalize across situations. Where prior work investigated only one context (e.g., Buck, 1975, 1977), namely, baseline condition, the present work provides additional data and

calls for further analyses of a person-situation interaction in affect encoding.

People who score 50 or above on the Zung SDS have been called "clinically depressed" (Zung & Durham, 1973). The present study included 12 subjects who scored 50 or above on the Zung SDS. The results showed that they could encode both "happiness" and "depression". This is consistent with recent work in which the authors asked "depressed" patients to actively engage in imagining "happy" events and found they could do so and their mood changed (Teasdale & Bancroft, 1977). The present work provides additional data that such people can also act "happy" under role instructions. The present study also found that these subjects were able to shift their roles. That is, they were able to change role enactments according to the instructions.

These results call for a careful assessment of the behavioral repertoire of "depressed" people. Although the present study failed to confirm hypothesis 2, these findings are valuable in the context of the communication of affect by various people. For example, Hichliffe, Vaughan, Hooper, and Roberts (1977) have suggested that "depression" can be best assessed within a social communication context because people emit different cues according to different social situations. They have stated that "what we call depression is only to be observed in the interactive and communicative spheres" (Hooper, Roberts, Hinchliffe & Vaughan, 1977, p. 132).

Methodologically, blocking for personality variables
(such as scores on the Zung SDS) and analyzing for
differences increase informative value of a design (Keppel,
1973). This design has been contrasted and compared with
an analysis of covariance design (Felt, 1958; Kirk, 1968).
Although an analysis of covariance may increase precision
of the design, it also loses information. In this study,
the present author also looked for potential interaction
effects of the subjects' scores on the Zung SDS and role
playing condition. To do so, the present study conducted
an analysis of variance of change scores from baseline to
each role playing condition. There was no significant
interaction effect between the Zung SDS group of subjects
and role playing condition. This result provides additional
evidence that all the subjects were able to role play both
"happy" and "depressed". That is to say, they encoded
"happiness" and "depression" and rated themselves signifi-
cantly different on the dependent measures between the two
role playing situations.

It is interesting to note, however, the Zung High group
rated themselves significantly lower in their ability to
act "happy" than either the Zung Low group or the Zung Mid
group, while there was no significant difference among the
three groups in their self-rated ability to act "depressed".
These results confirmed hypothesis 3 in acting the "happy"
condition but not in acting the "depressed" condition.

Social Communication of Affect via Overt Behavior; Validation
of Subjects' Role Playing under "Happy" and "Depressed"
Instructions by Untrained Observer-Judges: Hypotheses 4, 5,
6, 7

There was a very strong main effect ($\underline{p}$ < .001) of role
playing condition on the observer-judges' ratings on the
subjects acting "happy", "depressed", and in baseline
condition. This confirmed hypotheses 4 and 5.

A stringent testing of the communication function of
the subjects' role playing under "happy" and "depressed"
instructions must await a social validation. Since the
present investigation never defined specific, overt behavior
but rather asked the subjects to remember a time when they
were very "depressed" or "happy", an observer-judge's
validation is important. In the context of the present study,
we need to look for a "consensual validation" (Sarbin, Taft,
& Bailey, 1960) of the subjects' role playing. In this
study, over 100 people of various ethnic backgrounds viewed
and rated the videotape segments of the subjects' role
playing under "happy" and "depressed" instructions and in
baseline condition. The ratings made by observers of the
subjects in the three independent conditions of baseline,
"happy" and "depressed" were significantly different at
$\underline{p}$ < .001. These results were achieved by obtaining highly
reliable data. The reliability of the judges exceeded .95
at $\underline{p}$ < .001 on the target dependent measures of "depression"
and "happiness". These results suggest that there is a

social consensus at least among the subjects from Hawaii in
what behaviors communicate "depression" and "happiness" among
people at large. It also suggests that the subjects encoded
these socially communicable behaviors under "depressed" and
"happy" instructions. If this is not the case, the present
stimulus tapes of the subjects' role playing would not have
been validated by using untrained and unbiased people as
observer-judges.

Further, the observer-judges' ratings of the role
playing subjects under "happy" and "depressed" instructions
were significantly different from their ratings of the same
subjects in baseline condition on affect rating scales of
"happiness", "depression", "pleasantness", and "anxiousness".

These results provide strong evidence that the communi-
cation of "depression" and "happiness" was established
between untrained encoders and equally untrained decoders
and offer an independent validation of the subjects' role
playing under "happy" and "depressed" instructions. These
results confirmed hypotheses 4 and 5 of this study.

The present work provided a number of improvements in
the validation procedures in the area of decoding of affect.
Most recently, Zuckerman et al. (1976) have published their
work on the decoding of affect encoded by the subjects on
the face. They found that observer-judges can "infer" the
stimulus slide categories by looking at the facial responses
of the subjects. The subjects' faces were shown without
context. In contrast, the present work presented the

videotape segments of the subjects' interviews in baseline,
acting the "happy" condition, and acting the "depressed"
condition. The observer-judges were asked to rate the
subjects' affect directly rather than "infer" stimuli which
produced affect. The tapes were randomized but blocked for
the SDS group, order, and role playing condition across the
nine judging sessions. Further, the same role playing
subject never appeared more than one time so that each
subject was rated by three different panels of observer-
judges across her baseline condition, acting the "happy"
condition, and acting the "depressed" condition. This
procedure made the judgments independent and the judges
were not able to employ a strategy to contrast subjects'
baseline with the same subjects' role playing under "happy:
and "depressed" instructions.

Furthermore, instead of asking the observer-judges to
select one category of affect (e.g., Ekman & Friesen, 1971;
Izard, 1971) or to use only one scale (e.g., Waxer, 1974,
1977; Zuckerman et al., 1976), the present study asked the
observer-judges to rate the role playing subjects on 9 affect
rating scales. This procedure permitted a more sensitive
judgment of affect than a single categorical assignment or
a single scale rating. Further, it did not direct the
judges to the experimenter's interest.

These improvements were made for the purpose of
increasing the generalizability of the findings to real life
social situations. Given this difficult task for judging,

the present study provides a strong validation of the subjects' ability to role play under "happy" and "depressed" instructions. It is clear that untrained people can encode "happiness" and "depression" within a social context and this study offers an extended perspective in the area of social communication of affect. That is, the person's role enactment influences the observers' responses within a given social context (Goffman, 1971).

Hypotheses 6 and 7 looked for a main effect of Zung SDS group on observer-judges' ratings of subjects' affect on the dependent measures of "happiness", "depression", "pleasantness", and "anxiousness". There was a significant main effect of Zung SDS group on observer-judges' ratings of subjects in baseline condition on the dependent measure of "depression" but not on three other scales. Subsequent analyses indicated that observer-judges' ratings of subjects on the "depression" scale were significantly different among the three SDS Zung groups in their baseline condition, but they were not significant in acting the "happy" condition or in acting the "depressed" condition. This confirmed hypotheses 6 and 7 on the dependent measure of "depression" in subjects' baseline condition but not in their role playing condition. These results suggest that even though the judges' ratings of subjects are significantly different among the three Zung SDS groups in subjects' baseline, when they are not role playing, their ratings are not significantly different in subjects' role playing the "happy"

or the "depressed" condition. Thus, hypotheses 6 and 7 were not confirmed in the two role playing conditions.

Channels of Social Communication of Affect

In the present study, validation was based upon the information available from verbal, nonverbal, and paralingual channels of communication. These three channels were presented to the observer-judges simultaneously. This is in keeping with the purpose of the present study, that is, an approximation of real life situations in social communication of affect.

As Williams (1977) has recently reviewed, basic unit of communication is the interacting pair of all the channels and absence of some channels may alter the whole social nature of communication of affect. Cues do not exist in isolation and in real life social settings verbal and non-verbal cues appear in concert with each other rather than in isolation (Archer & Akert, 1977). Also, what area of the acting person communicates affect may depend on the situa-tion. So the present study examined both the face and the body of the role playing subjects. Hastorf, Schneider, and Polefka (1970) also emphasized that there are limitations in single channels-decoding studies because information may be isolated. All of these arguments are relevant to the present study which stresses the social character of the act in the communication of affect.

The purpose of the present study has been met. As stated in the introduction, this study is a step toward

developing an effective method for investigating what behaviors people consider "depressed" and "happy" in a social communication framework. As an extension of the present work, we may employ a research strategy which makes possible identification of specific behaviors which are considered as "depressed" and "happy" and clarify a communication function of these affects (cf. Bayes, 1972).

The present study demonstrated, far beyond the point of the previous research in this area, the effectiveness of the experimental procedures for role playing in a social context and provided strong evidence that lay people can encode and decode affect. This work also demonstrated that the person's self-report of affect is consistently modified according to role enactments under "happy" and "depressed" instructions.

V. SUMMARY AND CONCLUSIONS

The present work investigated whether untrained people can encode and decode "happiness" and "depression". It also examined personality variables of the encoders and the effects of encoding.

Forty-three female students served as role playing subjects (encoders). They were divided into three groups on the basis of their scores on the Zung Self-Rating Depression Scale. Subjects were individually interviewed three times. The first interview served as an own control. The interviewer asked about the subjects' school work, family, and friends for about three minutes. The second and third interviews involved subjects role playing under "happy" and "depressed" instructions. Subjects were told to remember a time when they felt very "depressed" or "happy" and act as if very "depressed" or "happy" while being interviewed. The order of role playing was counterbalanced. The design of the study was a 3 (Zung SDS group) X 2 (role playing condition) X 2 (order of role playing) factorial design with repeated measures across role playing conditions.

Immediately after each interview, role playing subjects rated themselves on the four 5-point affect scales: "Happy", "depressed", "pleasant", and "anxious". Scores on these self-rating dependent measures in each role playing condition were converted to change scores from baseline to each role playing condition and they were entered into four separate analyses of variance.

The results indicated that role playing subjects' self-report on three of the four dependent measures changed significantly ($p < .001$) according to their role enactment under "happy" and "depressed" instructions. There was no significant effect of the Zung group. There was a significant interaction effect ($p < .05$) of order and role playing condition. These results support the hypothesis that untrained people can act "happy" and "depressed" and these enactments have a significant effect on self-reported ratings of affect.

Videotape segments of subjects' baseline and their role playing under "happy" and "depressed" instructions were randomized in order and subjected to an independent validation by nine groups of untrained observer-judges ($N = 108$ female students). Observer-judges rated subjects' baseline and their role playing under "happy" and "depressed" instructions on nine affect scales. For the purposes of the present research the four ratings which corresponded to the self-ratings ("happy", "depressed", "anxious", and "pleasant") were examined and the scores were entered into four separate analyses of variance using the same design as that of role playing subjects.

The results indicated that the ratings made by observer-judges of the subjects in the three independent conditions of baseline, "happy", and "depressed" were significantly different at $p < .001$. These results offered a strong validation of the subjects' role playing by observer-judges

independent of the subjects' self-report and supported the
hypothesis that untrained people can decode "happiness" and
"depression".

Personality measures, such as the Zung Scale, Beck
Scale, Taylor MAS, and Ullmann Facilitation-Inhibition Scale,
were most significantly correlated to subjects' baseline
scores but not to scores in role playing conditions. When
the situation changed from baseline to role playing "happy"
and "depressed", the personality measures were not
consistent.

The present study demonstrated that untrained people
can communicate affect via overt behavior within a social
context. The results also indicated that within the popula-
tion sampled there is a social consensus on what behaviors
are considered "happy" and "depressed". It remains to be
investigated what <u>specific</u> behaviors communicate "happiness"
and "depression" among people at large.

APPENDIX A

General Instructions for Role Playing Subjects

Department of Psychology

University of Hawaii

Dear Participant:

The purpose of the present study is to investigate various feelings and behaviors of people in interpersonal situations. The study is composed of two parts: Questionnaires and role playing.

First, you are being asked to complete the accompanying battery of instruments about your feelings and thoughts. Please follow the instructions and answer all the questions. There are four instruments altogether.

Needless to say, your answers to the questions in the instruments will be kept strictly confidential.

When you complete the instruments, you will be asked to follow further instructions.

Thank you for your cooperation,

Junko Tanaka-Matsumi

APPENDIX B

Post-Task Assessment Forms
for Role Playing Subjects

Post-task Assessment Form: #1 (N)

Subject: _____   Group:_____   Order:_____

    Please indicate the degree to which each word describes the way you felt during the interview.

    Record your answers by circling the appropriate number on the five-point scale following each word. Presented below is the scale for indicating the degree to which each number describes the way you felt during the interview.

1	2	3	4	5
VERY SLIGHTLY or NOT AT ALL	SLIGHTLY	MODERATELY	CONSIDERABLY	VERY STRONGLY

    Please answer all four items.

"During the interview I felt . . . "

		Very Slightly or Not At All	Slightly	Moderately	Considerably	Very strongly
1.	Happy	1	2	3	4	5
2.	Depressed	1	2	3	4	5
3.	Pleasant	1	2	3	4	5
4.	Anxious	1	2	3	4	5

Post-Task Assessment Form: D

Subjects:_____   Group:_____   Order:_____

I.   Please indicate the degree to which each word describes the way you
     felt during the interview while you were role playing depressed.

     Record your answers by circling the appropriate number on the five-
     point scale following each word. Presented below is the scale for
     indicating the degree to which each describes the way you felt
     during the interview to role playing depressed situation.

1	2	3	4	5
VERY SLIGHTLY or NOT AT ALL	SLIGHTLY	MODERATELY	CONSIDERABLY	VERY STRONGLY

Please answer all four items below.

        "During the interview while I was

        acting depressed, I felt . . . "

		Very Slightly or Not At All	Slightly	Moderately	Considerably	Very Strongly
1.	Happy	1	2	3	4	5
2.	Depressed	1	2	3	4	5
3.	Pleasant	1	2	3	4	5
4.	Anxious	1	2	3	4	5

Post-task Assessment Form: D

To what extent do you feel that you were able to role play what you felt when you were actually depressed?

Please answer by circling the scale number which you feel most closely approximates your role playing.

"My role playing was . . . "

1. <u>Very</u> <u>Poor</u>: I was able to act 0-20% of what I felt when I was actually depressed.

2. <u>Poor</u>: I was able to act 21-40% of what I felt when I was actually depressed.

3. <u>Fair</u>: I was able to act 41-60% of what I felt when I was actually depressed.

4. <u>Good</u>: I was able to act 61-80% of what I felt when I was actually depressed.

5. <u>Very</u> <u>Good</u>: I was able to act 81-100% of what I felt when I was actually depressed.

Post-task Assessment Form: H

Subject:_____   Group:_____   Order:_____

I.   Please indicate the degree to which each word describes the way you
     felt during the interview while you were role playing happy.

     Record your answers by circling the appropriate number on the five-
     point scale following each word.   Presented below is the scale for
     indicating the degree to which each describes the way you felt
     during the interview in role playing happy situation.

1	2	3	4	5
VERY SLIGHTLY or NOT AT ALL	SLIGHTLY	MODERATELY	CONSIDERABLY	VERY STRONGLY

Please answer all four items.

"During the interview while I was

acting happy, I felt . . . "

		Very Slightly or Not At All	Slightly	Moderately	Considerably	Very Strongly
1.	Happy	1	2	3	4	5
2.	Depressed	1	2	3	4	5
3.	Pleasant	1	2	3	4	5
4.	Anxious	1	2	3	4	5

Post-task Assessment Form: H

To what extent do you feel that you were able to role play what you felt when you were actually happy?

Please answer by circling the scale number which you feel most closely approximates your role playing.

"My role playing was . . . "

1. Very Poor: I was able to act 0-20% of what I felt when I was actually happy.

2. Poor: I was able to act 21-40% of wha- I felt when I was actually happy.

3. Fair: I was able to act 41-60% of what I felt when I was actually happy.

4. Good: I was able to act 61-80% of what I felt when I was actually happy.

5. Very Good: I was able to act 81-100% of what I felt when I was actually happy.

Post-task Questionnaire

Subject:_____   Group:_____   Order:_____

1. Please describe briefly a situation or condition that you visualized
   when you were asked to role play <u>happy</u>.

2. What behavior did you emphasize most when you were role playing <u>happy</u>?

3. Please describe briefly a situation or condition that you visualized
   when you were asked to role play <u>depressed</u>.

4. What behavior did you emphasize most when you were role playing
   <u>depressed</u>?

5. Which role did you find easier to act? Circle the number.

                    1. Happy   2. Depressed

_____

     Thank you very much for your participation in this study. If you
are interested in the results, we will be happy to send you our report.
It will probably take three months before you get one. If interested,
please write down your name and address so that we can send you further
information.

Name:_____

Address:_____

APPENDIX C

Consent Form #1

I, the undersigned, agree to the restricted use of this
tape for the purpose of scientific research, and I do not
permit showing of this tape on any public communication
channel.

Signed:_____ Date:_____

APPENDIX D

Consent Form #2

I, the undersigned, permit that this tape may be viewed and rated by a group of people for the purpose of scientific research. I understand that this tape will be presented as that of normal college students and no name will appear on the tape.

Signed:_____   Date:_____

APPENDIX E

Task Instruction for Observer-Judges

Task Instruction

The purpose of the present study is to investigate how people judge other people's affects and what cues people use for the judgment of different affects. Your cooperation is being asked to act as observer-judges of video tape segments of various people regarding their affective behavior.

We are going to show you 16 video tape segments of various people in interview situations. Each segment runs for 2 minutes followed by 1/2 minute blank tape. While viewing these tapes, you are asked to do two things.

1. As you view the tape, rate the degree to which the person in the video appears: (1) happy; (2) depressed; (3) pleasant; (4) anxious; (5) sad; (6) disgusted; (7) fearful; (8) surprised; and (9) angry. There are 9 5-point rating scales for each person in the video.

2. For each of the 9 affects, write down the cues you used for your judgment. A cue is any behavior of the person in the video tape that influenced your judgment of affect.

   In case there is no evidence, in your judgment, of the video person appearing happy, for example, rate the person as 1 on the 5-point emotion scale. In this case, since there is no evidence of this affect shown, you need not write down the cues.

   In all other cases, write down the cues for all 9 affects and please repeat rating affects and writing down cues for all 16 persons.

The first 2 segments are for you practice. Try to get familiar with the rating scales for 9 affects and writing of cues. After two practice segments, you will be shown the remaining 14 segments successively.

Name of the Study: Judgment of Affect   Date_____

Judge's Background Information

Please fill in the following items.   Where relevant, please circle the appropriate numbers.

1.   Status: 1. Undergraduate   2. Graduate, Master's Level   3. Graduate, Ph.D. Level   4. Professional

2.   Department: _____   3. Major: _____

4.   Age: _____   5. Sex: 1. Female   2. Male

6.   Ethnic background: _____

**For people who have signed up to earn credit in courses, please fill in the following items also.

7.   Name: _____   Soc. Sec. #: _____

      Course #: _____   Instructor's Name: _____

_____

For Experimenter's Use Only

      Judge ID: _____   Group: _____   Tape #: <u>1   2   3   4   5   6   7   8   9</u>

APPENDIX F

AFFECT RATING FORM

Video Person # _____   Tape _____   Judge # _____

THIS PERSON APPEARS . . .

		Not at All or No Evidence	Slightly	Moderately	Considerably	Very Strongly	
1.	Happy	1	2	3	4	5	Cues (happy):
2.	Depressed	1	2	3	4	5	Cues (depressed):
3.	Pleasant	1	2	3	4	5	Cues (pleasant):
4.	Anxious	1	2	3	4	5	Cues (anxious):
5.	Sad	1	2	3	4	5	Cues (sad):
6.	Disgusted	1	2	3	4	5	Cues (disgusted):
7.	Fearful	1	2	3	4	5	Cues (fearful):
8.	Surprised	1	2	3	4	5	Cues (surprised):
9.	Angry	1	2	3	4	5	Cues (angry):

APPENDIX G

Debriefing Letter About the Nature of Tapes

Department of Psychology

University of Hawaii

Dear Participant:

Thank you for serving as observer-judges of videotape segments of various people.

The people you viewed today in videotapes are normal college students who had agreed to participate in a study on "Role Playing and Affect". As the title indicates, they were given instructions to role play, that is, act as if feeling certain emotions in the interview situations in the experiment. In order to help them enact behaviors associated with certain emotions, we used various techniques derived from research on psychological role playing and theatrical acting. People role played both verbal (speech) and non-verbal behaviors in this study. Their behaviors in the videotape segments do not at all reflect their current behaviors or experiences in their real life situations.

We did not use professional actors for this study because the use of professional or trained people would greatly limit the generality of our findings. We asked cooperation of real people to develop stimulus material for various affects.

Your judgment of videotape segments will contribute to the validation of using role playing methodology for the study of affective behavior.

As more people are scheduled to participate in this study on "Judgment of Affect" we would very much appreciate that you do not transmit this information to other people. We are grateful for your cooperation in this matter.

<div style="text-align: right">

Junko Tanaka-Matsumi
Experimenter
Department of Psychology

</div>

APPENDIX H

Letter Sent to the Role Playing Subjects
Regarding the Use of the Tapes

Department of Psychology

University of Hawaii

October, 1977

Dear   :

Thank you for your recent participation in our study on "Role
Playing and Affect". The study is now completed and your participation
is being credited to the appropriate courses you signed up for.

We are grateful that you have consented to the use of videotapes
for the purpose of scientific research. In order to validate role-
playing methodology for the study of affect, we will soon begin a
study which involves judgment of videotape segments of all the interviews
conducted with the participants. We will ask a group of 10 to 20
student-judges to view and rate your videotape segments.

Enclosed please find a paper which explains to these student-judges
the nature of the videotape material. We prepared this paper to make
sure that people will understand that it was a role playing situation
and not a real life situation.

Thank you again for your cooperation with our project.

Junko Tanaka-Matsumi
Experimenter
Department of Psychology

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