Citron, Lois Andrea

THE EFFECT OF POSITIVE AND NEGATIVE EXPECTATIONS ON IMPRESSIONS OF CONGRUENT AND INCONGRUENT ATTITUDES IN MULTICHANNEL COMMUNICATIONS

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by

Lois A. Citron

A dissertation submitted to the Graduate Faculty in Psychology in partial fulfillment of the requirements for the degree of Doctor of Philosophy, The City University of New York.

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4/6/82 — Date
Stephen Thayer Ph.D. — Chairman of Examining Committee

4/21/82 — Date
Herbert D. Saltzstein — Executive Officer

Professor Stephen Thayer

Professor Louis Gerstman

Professor Alden Wessman

Supervisory Committee

The City University of New York

Abstract

THE EFFECT OF POSITIVE AND NEGATIVE EXPECTATIONS ON IMPRESSIONS OF CONGRUENT AND INCONGRUENT ATTITUDES IN MULTICHANNEL COMMUNICATIONS

by

Lois A. Citron

Adviser: Professor Stephen Thayer

The effect of positive and negative situational expectations on impressions of attitude was investigated. Hispanic and White American encoders, acting as solicitors for a charity, responded on videotape to a hypothetical, off-screen donor. Stimuli were encoders' responses of various combinations of positive or negative evaluative content presented in facial, vocal, and verbal channels. Subjects, who were mainly Hispanic, Black, or White, expected either a positive or negative attitude on the part of the charity solicitor, or had no expectation with regard to attitude. Subjects responded in four ways to each observed message: (1) they judged the charity solicitor-encoder's attitude on a positive-negative scale; (2) they evaluated the certainty of their own attitude judgment on a certain-uncertain scale; (3) they estimated how large a monetary donation a hypothetical bystander

would contribute to each encoder using a forced-choice format; (4) they decided how large a monetary donation they would give to the encoder using the same forced-choice format. In addition, subjects rated themselves on a 14-point altruism questionnaire. Results indicate that: (1) subjects who expect positive attitudes judge encoders' attitudes as more positive than subjects who expect negative attitudes; (2) positive faces, voices, and scripts are judged more favorably than negative faces, voices, and scripts; (3) White encoders are judged as conveying more positive attitudes than Hispanic encoders and are given larger hypothetical monetary contributions; (4) positive content messages and congruent messages are judged with more certainty than negative content and incongruent messages; (5) impressions of attitude, estimated other's contributions, and self contributions are positively correlated; (6) self-reported altruism is not correlated with any other response measure. Encoder and decoder ethnic differences are reported and discussed. Hispanic encoders stress the vocal channel; White encoders stress the facial channel. Black and Hispanic subject-decoders discriminate positive and negative facial expressions on the impression of attitude scale but White subjects do not. Cultural explanations are presented.

The present results and those of previous studies are discussed in terms of Ekman, Friesen, and Ellsworth's (1972) source clarity, and suggestions for future research are made.

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TABLE OF CONTENTS

LIST OF TABLES

LIST OF FIGURES

INTRODUCTION

Background

Importance of Nonverbal Communication in Human Communication

> In recent years researchers have estimated that perhaps up to 99 percent of human communication is nonverbal. Although the figures themselves may not be precise, (given the difficulty of quantifying this kind of behavior), the fact that such statements come from serious scholars indicates the recognition of the importance of non-verbal elements in interaction. In addition, studies show that whenever there is a conflict between what is verbally conveyed and what is conveyed nonverbally, it is the nonverbal message that is credited. . . . Statements such as 'She said all the right words, but you could tell she didn't mean it. The truth was written all over her face,' or 'It's not what he said but how he said it,' lends strong credence to the theory. (Johnson, 1979, p. 4)

Researchers' Concern with Facial Expression

It is fair to say that most investigators of nonverbal communication consider the face most important because it reveals the most information about a person's emotional or attitudinal state and can convey an especially large amount of information in a short period of time. The face is an obvious, conscious indicator of feeling, one that is attended by the neonate (Fantz, 1963, 1966, 1973). It is usually readily accessible for scrutiny in "face-

to-face" encounters, as the term itself implies. However, it is most likely that facial expression is the best controlled communicative nonverbal behavior (Dittman, 1972; Ekman & Friesen, 1969; Izard, 1971; Mehrabian, 1972; Rosenthal, Hall, DiMatteo, Rogers, & Archer, 1979; Zuckerman, DeFrank, Hall, Larrance, & Rosenthal, 1979). Still, it is not surprising that researchers have paid it such particular attention.

This concern with facial expression dates back over a century to Charles Darwin (1872), who collected much cross-cultural data and concluded that facial expressions, unlike most other aspects of human behavior, were universal, and therefore inherited. One fundamental aspect of the relationship between facial behavior and emotion which is universal is the association between the movements of specific facial muscles and specific emotions. This has been found true for the facial appearance associated with anger, sadness, happiness, and disgust, and perhaps also for surprise and fear (Ekman, Friesen, & Ellsworth, 1972). It is perhaps this relationship between facial expressions and emotions that is of particular interest to psychologists. This line of questioning is still being investigated today, chiefly by Paul Ekman and his colleagues (e.g., Ekman, 1971, 1973a, 1973b; Ekman & Friesen, 1975; Ekman, Friesen, & Ellsworth, 1972).

Channels of Communication

Facial expression is but one of several ways in which humans (and animals) communicate nonverbally with each other. Compared to the face, each of the following sources of nonverbal cues is likely to be less informative under ordinary circumstances of social interaction and less likely to be as controllable by the sender (encoder) of the message:

1. Body. Ekman and Friesen (1969, 1974) have shown that the body (including gestures, proximity, and physiologic reactions such as sweating) is more likely than the face to give off or "leak" deception cues (behavioral clues to "true" feelings which the encoder wishes not to reveal).

2. Tone of voice. Several studies (Ekman, Friesen, & Scherer, 1976; Streeter, Krauss, Geller, Olson, & Apple, 1977) have shown that tone of voice is an additional source of cues to deception or stress. It has also been shown that tone of voice may leak one's true feelings about oneself (Bugental, Henker, & Whalen, 1976; Bugental & Love, 1975; Holzman & Rousey, 1966) or about others (Weitz, 1972), when contrasted with facial expression, body, or verbal content.

3. Discrepancy. Except in the special cases of irony, sarcasm, or humor, discrepancies between visual

and auditory nonverbal cues may be unintended and difficult to control (DePaulo, Rosenthal, Eisenstadt, Rogers, & Finkelstein, 1978).

Each of these ways of communicating may, for research purposes, be considered a separate channel. The concept of channel has been defined by Wiener and Mehrabian (1968), and this meaning has been adopted by most researchers in the field: "Channel will define any set of behaviors in a communication which has been systematically denoted by an observer and which is considered by that observer to carry information which can be studied (in principle at least) independently of any co-occurring behaviors" (p. 5).

The concept of channels takes into account the fact that in studying face-to-face interactions we are confronted by "an alive, reacting person giving off all sorts of messages simultaneously in complementary and sometimes competing channels of both nonverbal and verbal communication" (Weitz, 1979, ch. 5, p. 347). It should be noted that although researchers understand the need for studying several channels simultaneously, most nonverbal researchers, until the last few years, have been concerned with the experimental investigation of only one channel at a time. Yet, it is the interaction of all communication channels which provides the total message to which we respond.

Paralanguage

According to Mehrabian (1972) voice is the second most important communication channel (after facial expression). Paralinguists, the scientists who study the nonverbal aspects of speech and language, set great store on how something is said rather than what is said. The study of paralanguage also began with Darwin (1872), who explored such nonlinguistic aspects of speech as tone and pitch. Darwin noted that the calls of animals can often be tied to specific situations, and presumably, specific emotions as well, suggesting possible evolutionary continuity in the vocal usage of humans. This idea has endured and as Weitz reports:

> Since Darwin's time, considerable advances have been made, both in the study of animal sounds (particularly those of primates) and of human paralanguage and language. From these studies have come a wealth of speculation about the possible universality of association between certain vocal patterns and emotional expression . . . in much the same way as facial expressions and emotions have been presumed to have an innate relationship. . . . Voice and face are intimately related, in primates . . . as well as man. Thus sadness leads to a certain facial configuration and a characteristic intonational pattern which can be readily distinguished from other states, such as joy and anger. The primacy of the facial channel or the vocal remains a subjects of speculation; clearly both act in tandem in natural interaction. (1979, p. 221)

The field of paralinguistics has developed in two major directions: voice as indicator of personality and voice as reflector of emotion; only the latter relationship

will be considered in this paper. Both everyday experience and experimental research suggest that there is a strong relationship between voice and emotion (see Scherer, 1978, for a review). The trend toward studying the link between voice and emotion was given impetus by two developments, one methodological, one conceptual (Weitz, 1979).

Methodologically, the development of content-free speech as a research tool provided the prerequisite technology for studying the effects of voice separate from verbal content. A variety of methods have been used (see review by Scherer, 1971). Strategies have included: (1) having speakers recite meaningless content (such as numerals or letters of the alphabet) using various emotional voice states; (2) reading standard constant content (using the same set of emotionally ambiguous words, such as "maybe," for all the emotions portrayed; (3) use of foreign language speech or speech played backward on a tape recorder; (4) electronic low-bandpass filtering (which eliminates verbal content by passing recorded speech through a low-pass filter designed to hold back those higher frequencies of speech upon which word recognition depends); and (5) randomized-splicing of taped speech.

Conceptually, as Weitz (1979) observed, the study of the "experimenter effect" by Rosenthal (1966, 1967)

exposed a new and important problem for which paralinguists could provide a partial answer:

> Rosenthal's (1966) research indicated that something special was going on in the experimenter-subject interaction. Along with the overt process of instruction-giving and direction, there was a covert communication system that was subtly influencing the performance of the subject by transmitting the experimenter's expectations. . . . The site of the hidden communication system seemed to be the paralinguistic and nonverbal channels. Indeed, in a follow-up series of experiments, subtle alterations of vocal emphases in instructions were found to affect experimental outcomes in the expected directions. (ch. 3, p. 228)

Thus it was initially from the experimental psychology laboratory that interest in paralanguage developed and spread to the real world of more commonplace social interactions. From there paralanguage sparked the interest of researchers in fields as diverse as sociology, ethology, and linguistics.

Multichannel Communication

Some nonverbal researchers have attempted to study complex multichannel communications where several channels are simultaneously combined. These messages more closely resemble real life communications than single channel communications. Albert Mehrabian and his colleagues pioneered in the experimental study of multichannel communication (e.g., Mehrabian, 1972; Mehrabian & Ferris,

1967). For example, in a study of visual, vocal, and verbal channels, Mehrabian (1972) and Bugental, Kaswan, and Love (1970) found that under certain circumstances facial expression is most heavily weighted in the interpretation of a message, followed by voice, and lastly, by words. More recently, Robert Rosenthal and his colleagues (1979) developed the PONS (Profile of Nonverbal Sensitivity) technique in an effort to understand and assess how nonverbal messages from different channels (face, voice, and body) are processed in order to make judgments about portrayed emotions. Rosenthal is particularly interested in individual differences in nonverbal decoding skills, and his videotape technique is the first comprehensive attempt to study the decoding of multichannel communications cross-culturally.

Typically, in a multichannel decoding study, information from two or more channels differs in certain instances. Researchers are interested in how decoders resolve the conflict and interpret the encoder's message. For example, Bugental, Kaswan, and Love (1970) found, as did Mehrabian and Ferris (1967), that facial and vocal cues combine in a linear model of impression formation. Bugental et al. also report that negative information is weighted more heavily than positive information, so if both kinds are combined in a single message it will be interpreted as negative. Children are particularly

susceptible to the misinterpretation of conflicting channel or "mixed" communications, tending to interpret joking messages as negative ridicule (Bugental, Kaswan, & Love, 1970).

Effect of Situational Context on Facial Expression

Even if the face is the most important communication channel, Harper, Wiens, and Matarazzo (1978) note that correctly interpreting a person's face in isolation does not mean that we know what he is really feeling, or even what emotion he is attempting to convey. Harper, Wiens, and Matarazzo posed some relevant questions regarding the state of the art in studying facial expression:

> In real life we always observe others' facial expression in some situation. Though the research has demonstrated that above-chance accuracy judgments from facial cues in isolation can be made, it is important to consider how much information facial expression does provide when the situation is also known. An especially important question is what does an observer judge about a person's emotion when his facial behavior is inconsistent as well as consistent with the situation? (p. 97)

Ekman, Friesen, and Ellsworth (1972) also address the face versus context question. They state that

> it will be important to investigate the nature of those occasions when the face provides more information than the context, when the context provides more information . . . (and) the particular mechanisms employed (by observers) to resolve discrepant information between the face and the context. (p. 150)

Effect of Situational Context on Multichannel Messages

Much attention has been paid to the question of context versus facial expression in judging emotion; little research has been conducted in the area of context versus multichannel communication. As mentioned before, some headway has been made in trying to assess and understand how multichannel messages are decoded in judging emotions or attitudes (e.g., Rosenthal, Hall, DiMatteo, Rogers, & Archer, 1979; Bugental, Kaswan, & Love, 1970; Bugental, Kaswan, Love, & Fox, 1970). However, few researchers have studied the effect of varying expectations on the decoding of multichannel communications. The present study investigates this question.

Review of Research on the Role of Context and Face on Impression of Attitude and Emotion

Early Hypotheses

Most of the studies before the 1960's addressed the question of the relative contributions of facial expression and contextual information in the judgment of emotion rather than attitude. In the literature "impression" and "judgment" have been used interchangeably (Warr & Knapper, 1968) and will so be used here. "Emotion" refers to how one feels, with no referent being necessary; "attitude" refers to how one feels toward another person or thing

(Argyle, 1975). Two early hypotheses were formulated. Fernberger (1928) postulated that the situational context, rather than facial expression, dictates what emotion is judged--yet it is difficult to find studies which support this hypothesis. Bruner and Tagiuri (1954) concluded that information from both sources yields more accurate judgments than either alone. Note that Fernberger's hypothesis is in direct opposition to the opinion of most contemporary researchers (Ekman, Friesen, & Ellsworth, 1972), who contend that the face is the single most important source in judging emotion.

Methods of Studying the Contributions of Facial Expression and Context

Historically, three procedures have been used to provide contextual information. According to Ekman, Friesen, and Ellsworth (1972):

> One technique has been to show an entire still photograph, often including more than just the behavior of the stimulus person, sometimes indicating preceding and consequent events, sometimes conveying information about stable setting and personal characteristics. Another technique has been to present a verbal description or story about the context in which the facial behavior occurred. . . . The third technique involves preceding the facial behavior with motion picture film sequences of other contextual events. (p. 138)

Studies Supporting Facial Primacy

A well-known example of research on facial expression in combination with situational cues, which supports the premise that facial expression is more important than any other cue in the interpretation of attitude, is the work of Frijda (1969). Frijda had subjects rate facial photographs and written situational descriptions of the photographs on a 7-point bipolar scale. A week later the same subjects rated the photographs combined with the situational description. Emotion ratings of each type of cue judged alone and together were obtained. In addition, some situation-description facial expression combinations were inconsistent with each other: the judgment on these combinations permitting a test of the relative contribution of each type of cue. Frijda found that information from the face dominated observer-subject judgments of inconsistent cue combinations.

Even from this brief description it is obvious that there are methodological problems with Frijda's study. With only a week between test sessions it is likely that subjects remembered the photographs or verbal descriptions they were exposed to, and perhaps more important, their ratings of them. Subjects might have been reluctant to change their original ratings when presented with the combined photographs and verbal descriptions, using these

previous ratings as a way of resolving the discrepant situations. This could not possibly have occurred if subjects were seeing the combined information for the first time. It is also possible that the photographs were better remembered than the verbal descriptions; therefore those subjects who saw the photographs alone during the first test session could have exhibited "anchoring" effects which biased them in favor of the facial information. Independent groups of subjects should have been used to judge the single channel information and combined channel information.

There has been a burgeoning literature concerned with the decoding of nonverbal body cues in combination with facial expression. This growing body of research also has commonly reported that in both consistent and inconsistent messages subjects rely more on facial information than audio information, for example, when making attitude judgments (e.g., Bugental, Kaswan, & Love, 1970; Mehrabian, 1972; Mehrabian & Ferris, 1967), and Thayer and Schiff (1969) report that facial cues tend to dominate over motion cues of approach-withdrawal.

Studies Not Supporting Facial Primacy

There are many instances where facial primacy does not occur. Munn's (1940) is probably the earliest and

best known work on the influence of context on the face cited in support of the view that contextual information determines, or at least improves, judgments from the face. Munn used candid still photographs of emotional situations as stimuli; in one condition only the face was shown to the subject, in another condition contextual information was provided by showing the full photograph as originally filmed by the photographer. Subjects had to choose an emotion from a list of six categories, with an option to choose no emotion. Results showed that subjects were more accurate in describing the emotion portrayed by the face when they were privy to the entire photograph.

There are methodological problems with Munn's study, much as there are with Frijda's (1969). The photographs Munn chose were not standardized in any way, nor were they specifically designed for his study or prejudged for clarity of facial expression or context. The photographs therefore reflected the biases of the photographer and Munn, either or both of whom might have had a preference for photographs where facial expression or context was inherently dominant. Munn should have controlled for the source clarity, a term used by Ekman, Friesen, and Ellsworth (1972) to refer to "differences in the amount or type of information about emotion available to observers when they are exposed to a single source--face or context" (p. 138).

> A cue may vary in its source clarity as a function of its ambiguity (e.g., as reflected in the magnitude of agreement among observers as to the meaning of a facial cue), its complexity (e.g., a single emotion versus a blend of emotions in a facial expression, and its strength (as measured by an observer's intensity rating. (Harper, Wiens, & Matarazzo, 1978, ch. 3, p. 98)

In addition, all of Munn's subjects were exposed to the face; some subjects also saw the context, but none saw only the context. Thus there is no judgment of emotion from the context alone, a crucial measure in a study such as this.

More recent studies have been better conceived and controlled. In a 1970 study by Bugental, Kaswan, Love, and Fox, in which positive messages were paired with neutral ones, facial primacy did not occur. In fact, the children in the study (although not the adults) were more influenced by tone of voice than by facial cues. The work of Ekman and Friesen (1969, 1974) and Ekman, Friesen, and Scherer (1976) also imply that facial primacy does not always occur. They confirmed that encoders have more control over facial expression than over body movements or vocal intonations. Thus in studies of deception(where encoders are trying to convey emotions they do not feel), more accurate information might be gathered from the body and voice, which "leak" more information than the face.

Evaluation of Early Studies of Face Versus Context

In 1972 Ekman, Friesen, and Ellsworth reanalyzed many of the early studies which compared facial expression and context; their reinterpretation of many of the studies disagrees with the authors' conclusion that context provides as much information, if not more, than facial expression. Ekman, Friesen, and Ellsworth note that most of the early research failed to consider the clarity of information provided by either face or context. Further, they point out that Bruner and Tagiuri (1954) fail to distinguish between concordant and discordant combinations of face and context; while Bruner and Tagiuri's conclusion might be accurate for concordant situations, simply adding information from conflicting sources would not resolve the situation in favor of either face or context. After a lengthly discussion, Ekman, Friesen, and Ellsworth (1972) summarized their position as "No conclusions can be drawn about the relative influence of information from facial behavior and information about the context in judgments of emotion when both are known by the observer" (p. 149). Currently, then, as well as in the past, there is ambiguity as to the relative roles of facial expression and context in the judgment of emotions.

Emotions and Channel Specificity

In several further experiments Frijda (1969) found that the particular emotion associated with each cue was important in determining the weight given each cue in an inconsistent message. When a sad story was presented with a happy face, verbal content tended to dominate; however, when a sad face was paired with a happy story, the face clearly influenced judgment. It seems, then, that negative evaluative content, regardless of source, dominates over positive evaluative content.

Channel Salience and Emotions

There is also some evidence that one channel may provide some kinds of information better than another channel. For example, Rosenthal (1966), in his studies of experimenter expectancy effects, found that experimenters who biased their subjects' responses were seen (in a video-only condition) as more honest, but heard (in an audio-only condition) as less honest than experimenters who were less likely to obtain the results that they expected. And Milmoe, Rosenthal, Blane, Chafetz, and Wolf (1967) found that doctors' tone of voice, rather than the verbal content of their discussions with alcoholic patients, better postdicted their success in referring these patients for further treatment.

Individual Differences

In addition to studies which have shown that facial primacy does not always prevail when combined with other kinds of information, three studies, using different channels combined with facial expression, found consistent subject preferences for one channel over another. Shapiro (1968) presented schematic faces with conflicting verbal accompaniment to American college students, who rated them for pleasantness. He found that the students resolved the conflict by consistently attending to one channel and disregarding another. Although a majority of students resolved the conflict by attending to the visual stimuli, a significant number relied mainly on linguistic cues. Berman, Shulman, and Marwit (1976) used videotapes to present a "warm" and a "cold" experimenter. They found consistency in the way college students judged the experimenters on a variety of scales, depending on whether facial or vocal cues were primary. And Rosenthal, Hall, Archer, DiMatteo, and Rogers (1979) found that in decoding facial, body, and vocal cues, "sophisticated" college students and professional groups showed relatively accurate performance on facial and body cues, and poorer performance on vocal cues, whereas "unsophisticated" children, mental patients, and non-Westerners showed the reverse pattern. Lastly, in a different kind of study, Rosenthal and DePaulo (1979) found

that females were most superior to males in their decoding of the facial channel relative to the more leaky channels of body, tone of voice, brief exposures, and channel descrepancies.

Summary and Conclusions of Research Review

To summarize and integrate the above, it is clearly not always the case that facial expression overrides information contributed through other communication channels or through context. There are situations where facial expressions are not primary, and people for whom facial expressions are not primary. Also, most real-life communications contain multichannel information, not just facial expressions, and much of the time this information is ambiguous or inconsistent, intended or not. Thus early, simplistic conclusions about facial primacy need to be updated to include the complexities of multiple channel communications. Feelings of ambivalence, attempts at lying, and grudging adherences to the norms of etiquette are just some instances which may lead to different messages in different channels. For the foregoing reasons it is important and necessary to conduct research on the decoding of multichannel messages in various contexts.

The Present Study

Rationale

State of the decoder in judging attitude. It is obvious that in everyday social interactions we judge the attitude of a person not only from the content of the various verbal and nonverbal information channels he uses, but we are guided also by our own expectations as to the appropriateness or correctness of the message. For example, an effusive thank you after receiving a very generous gift might be interpreted as genuine, and bring pleasure to the giver, even if it was faked; the same effusive gesture made at the receipt of a trinket might be judged as insincere, and cause embarrassment to the giver, because it seems like overkill. In both cases, the channel information sent by the encoder is the same, but the message is interpreted differently. The contexts in which the messages were conveyed are responsible for the differing impressions of attitude decoded by the gift giver. This change is due to different expectations of the decoder in each instance. Thus the expectation of the decoder, as well as the message, must be taken into account in order to most accurately assess the impact of a message on the decoder. This aspect of perceiving multichannel communications in relation to the decoder's expectational state seems obvious, yet in the area of nonverbal communication it has for the most part been

overlooked experimentally. Yet it seems reasonable to hypothesize that in messages where all channels (verbal and nonverbal) are consistent with each other and with the decoder's expectation, expectation will have little or no effect upon the interpretation of the message. However, where channel information is inconsistent with the decoder's expectation (e.g., you expect a negative attitude but receive a positive one), or some channel information is inconsistent with the expectation (e.g., you expect a negative attitude but receive a positive face and negative tone of voice), we do not know what kinds of information are used in forming attitude impressions.

It is probably true that in most situations we judge a person's attitude by his facial expression. However, in situations where the decoder expects that a deception is being attempted, facial expression is seen as the channel of deception, while true feelings are gleaned from the more "leaky" channels, such as body or voice (Ekman & Friesen, 1974). Depending, then, on how the situation is perceived by the decoder, various communication channels become differentially important. It follows that changing the context in which the message occurs, resulting in a change of the decoder's expectation, will likely change how a particular message is understood.

Research Objectives

Decoder's expectation in judging attitude. One purpose of the present study was to investigate the impressions of attitudes conveyed in consistent and inconsistent three-channel communications (composed of facial expression, tone of voice, and verbal content) where a positive or negative attitude of the encoder is expected through varying the situation. It seems reasonable to expect that a person who observes a situation in which he expects a positive attitude will probably judge an ostensibly positive attitude as positive; however, if the decoder expects a positive attitude but receives a negative one Jones, Davis, and Gergen (1961) postulate that, for example, the decoder would be more sensitive to the negativity of the message than if he had no such expectation, and his impression of the encoder would be extremely negative. Conversely, an exaggerated positive effect might occur if a positive attitude was perceived where a negative attitude was expected. These contrast effect hypotheses are supported by the results of two recent experiments on facial expression conducted by Thayer (1980a, 1980b). He found that photographs of happy and sad facial expressions were rated higher in intensity when preceded by a series of photographs of contrasting facial expressions than by a series of photographs of

the same facial expressions. In a more complex situation, where an inconsistent message is received, we do not know how the discrepancy is resolved.

The present research investigated the effects of positive or negative expectations about friendly or hostile behavior on observer impression of positive or negative attitudes. Positive or negative attitudes were conveyed toward a hypothetical, off-camera donor by women shown attempting to collect money for charity. Three communication channels (facial expression, tone of voice, and verbal content) were varied to produce several kinds of consistent and inconsistent messages. Encoders produced positive and negative attitude messages through each channel (e.g., a smiling facial expression was positive for face, an angry facial expression was negative). By combining the positive or negative information conveyed by the face, tone of voice, and verbal content, three-channel messages with varying amounts and combinations of positivity/negativity were produced (e.g., a smiling facial expression combined with a friendly tone of voice and kind words = most positive attitude). Subject-decoders' impressions of attitude were measured by having them rate the women's portrayed reactions as charity solicitors to an off-screen donor on a 10-point positive-negative scale.

Decoder's certainty of attitude judgments. The accuracy of decoders' impressions of attitude have been investigated (i.e., it has been reported that observers are very accurate in judging attitudes when all channels are consistent (Mehrabian, 1972; Bugental, Kaswan, & Love, 1970) and not so accurate as combined channels become more inconsistent (Rosenthal et al., 1979); however, the certainty/uncertainty which results when observers are presented with inconsistent messages has not been studied. The present experiment compared decoders' feelings of certainty when judging consistent and inconsistent three-channel messages. Decoders rated the certainty of their impressions of attitude on a 6-point scale. Studies of how information is processed show that the more consistent and redundant the stimulus, the more confident the observer is as to its identity (Lindsay & Norman, 1977). It is likely, then, that observers are more certain of the attitude judgments of consistent messages than of inconsistent messages.

Ethnicity of encoder on impressions of attitude and ethnicity of encoder/ethnicity of subject interaction. The present study attempted to determine the effect of the ethnicity of the encoder (White or Hispanic) and decoder (White, Black, or Hispanic) on the decoding of multichannel messages, and how encoder ethnicity interacts

with the ethnicity of the subjects. Little research has been accomplished regarding ethnic differences in either encoding or decoding of multichannel messages. Rosenthal et al. (1979) have started to investigate decoding differences among people of different cultures, but the interaction of the ethnicity of encoder and decoder has not been explored. Questions of interest in this area include: (1) Do decoders, regardless of ethnic background, decode Whites and Hispanics differently? If so, how? (2) Are there differences in decoding encoders from the same versus a different ethnic group from one's own? (3) Finally, aside from the effect of the ethnicity of the encoder on the decoders, how do decoders of different ethnicities process multichannel information? Cross-cultural research has consistently documented that there are cultural differences in the ways that people express attitudes and emotions both verbally and nonverbally (Argyle, 1975). For example, Americans are facially expressive, whereas the Japanese are much less so. Does this mean that Americans are relatively more sensitive to decoding the facial channel? The present experiment investigates these questions with respect to White and Hispanic encoders, and White, Hispanic, and Black decoders.

Hypothetical monetary donations as indirect measures of attitude judgments. Most studies of attitude judgment have used measures on various semantic dimensions such as dominant-submissive, friendly-hostile, and warm-cold. One exception is Weitz's (1972) study of attitude, voice, and behavior. Weitz investigated the verbal and nonverbal behavior of supposedly "liberal" White college males and found that tone of voice was indicative of social behavior toward Blacks, but verbalization of attitude was not consistent with interracial behavior. The results of this study make a convincing case for using response measures other than semantic rating scales in measuring attitude judgments, especially nonverbal response measures. With respect to the present study, it seemed appropriate that a monetary response measure of attitude judgment be used. Two measures suitable to the present experiment's charity collector as encoder context were chosen. First, subjects were asked to estimate how much money a hypothetical donor would contribute to each charity collector-encoder. This other's contribution response was meant to provide a relatively objective measure of the effectiveness of the encoder in concrete, monetary terms apart from the charitable inclinations of the subject-decoder. Results on this measure were compared to the subject's own hypothetical donation to the charity collector-encoder. The responses on this self contribution measure should have

assessed the subject's personal biases with regard to the encoders' attitudes in much the same way as the impression of attitude scale. Both other's contributions and self contributions were measured on a forced-choice scale from $0 to $10.

Lastly, as a tangential study, subjects' altruism was investigated in relation to attitude judgment. Altruism is defined as "the extent of unselfishness, sincere sympathy, and concern for others" (Wrightsman, 1964). Subjects rated themselves on a 14-point questionnaire developed by Wrightsman (1964). If feelings of altruism lead to altruistic behavior, subjects who are more altruistic should have donated larger amounts of money to the encoders on the self contribution and other's contribution scales; subjects who are less altruistic should have donated less money on these scales, depending upon their impression of the encoder. Altruists should have been magnanimous regardless of the attitude of any particular charity collector-encoder, concentrating instead on the worthiness of the cause, which remained constant.

Summary of Objectives of the Present Study

To summarize the objectives of the present study, the effect of varying contextual cues, and thereby pre-

sumably expectation, on the impression of attitude was investigated. Hispanic and White woman encoders, acting as solicitors for a charity, responded on videotape to a hypothetical, off-screen donor. Encoders' responses were various combinations of positive and negative evaluative content presented in facial, vocal, and verbal channels. Subjects, who were mainly Hispanic, Black, or White, expected either a positive or negative attitude, or had no expectation with regard to attitude conveyed by the charity collector-encoders. Subject-decoders responded in the following ways to each message they observed: (1) they judged the charity collector-encoder's attitude on a positive-negative scale; (2) they evaluated the certainty of their attitude judgment on a certain-uncertain scale; (3) they estimated how large a monetary donation a hypothetical bystander would contribute to each charity collector using a forced-choice format; (4) they decided how large a monetary donation they would give to the charity collector using a forced-choice format. In addition, subjects rated themselves on a 14-point altruism questionnaire.

The effect of the ethnicity of the encoder on subjects' responses was studied, as was the effect of the ethnicity of the subject with respect to facial, vocal, and verbal variables. The ethnicity of the encoder/ethnicity of

subject relationship was also examined. Finally, the relationship of altruism to the other response measures was explored.

METHOD

Subjects

One hundred forty-eight City College of New York undergraduate students served as subject-decoders. They were paid $2.00 for volunteering. The data of six subjects were eliminated because of the students' failure to follow instructions, or improper use of the rating scales. Of the remaining one hundred forty-two subjects, 69 were male, 73 were female. Subjects ranged in age from 17 to 48 years, with a mean age of 24. Subjects were of varied ethnic backgrounds: 66 Black, 32 White, 31 Hispanic, 8 Oriental, 3 other, 2 unknown. Most of the students were concurrently enrolled in an introductory psychology class. They were randomly assigned to one of the four expectation conditions (n = 35, group 1, "no context"; n = 33, group 2, "no expectation"; n = 41, group 3, "positive expectation"; n = 33, group 4, "negative expectation"). Students were run in small groups of two to eight.

Materials: Videotaped Messages

A set of black and white messages produced on a Sony AV 3600 videotape recorder served as a pool from which the experimental stimuli were selected. Messages were

approximately two seconds in duration, which is the duration optimally used by Rosenthal and his colleagues in the development of the PONS test (Rosenthal et al., 1979). Acted messages were used in order to obtain systematic variation of positive evaluation (friendliness, approval, or consideration) versus negative evaluation (unfriendliness, disapproval, or inconsiderateness) in all possible combinations of the three channels. The videotaped messages varied on three dimensions: the facial channel (face), the vocal channel (voice), and the verbal channel (script). Each channel contained either positive evaluative or negative evaluative content. The pool of 16 messages included:

(1) + script, + face, + voice (2 messages)

(2) + script, + face, - voice (2 messages)

(3) + script, - face, + voice (2 messages)

(4) + script, - face, - voice (2 messages)

(5) - script, + face, + voice (2 messages)

(6) - script, + face, - voice (2 messages)

(7) - script, - face, + voice (2 messages)

(8) - script, - face, - voice (2 messages)

Each of these messages was enacted by seven City College undergraduate women, 20-24 years old (four White Americans of Eastern European background, three Hispanics). The White women who served as encoders were all native

born U.S. citizens; the Hispanic women were either foreign born with no noticeable spoken accent, or native born U.S. citizens. An independent group of 17 City College students was shown videotapes of the faces of the encoders. In an open-ended questionnaire the students were asked the ethnic identities of the encoders. Rater accuracy was at least 70% for each encoder. Figure 1 shows two Hispanic encoders portraying positive and negative facial expressions. Figure 2 shows two White encoders portraying positive and negative facial expressions. Only women were selected as encoders because females are supposedly better encoders than males (Hall, 1979; Drag & Shaw, 1967). From this pool of messages enacted by each encoder the subset used in the experiment proper was chosen. First, however, all messages were judged by independent groups of subjects for positive or negative evaluative content in all channels.

Procedure

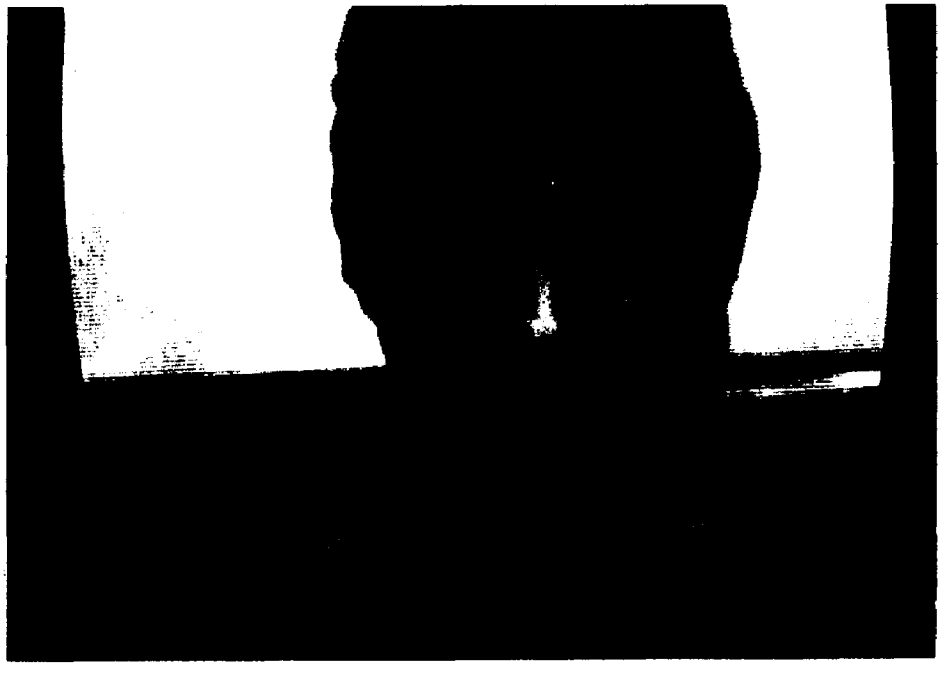
Prejudgment of scripts. Effects due to the specific content of scripts were controlled by the scripts being considered for inclusion in the study rated for positivity/negativity. The eight initial scripts were judged for evaluative content by 26 introductory psychology students. (See Appendix A for subjects' instructions for evaluating verbal content.) Ratings were made on a 12-point scale.

Figure 1

Hispanic encoders portraying positive and negative facial expressions.

Figure 2

White encoders portraying positive and negative facial expressions.



The final set of four scripts was selected from an initial group of eight scripts (see Appendix A) developed by Bugental, Kaswan, and Love (1970). Scripts were retained only if they were rated as positive (or negative) by all subjects and had a positive (or negative) rating of at least three (minus three) out of a possible six (minus six). (See Appendix D for mean ratings of verbal content.) The scripts were thus shown to be unambiguous and without any intrinsic conflict. However, scripts were selected which would be meaningful when used with contradictory nonverbal messages. The four scripts finally selected were:

Positive

(1) That's good. That's really great.

(2) Thanks alot for your help.

Negative

(1) You're hopeless. You're completely hopeless.

(2) You are a complete idiot.

Videotaping of messages. Each encoder videotaped all 16 messages. Two other women were not videotaped because of their inability to adequately communicate the messages. Encoders were paid undergraduates who were interested in the experiment. They were given scripts and instructions as to whether the facial expressions and tones of voice should be positive or negative. Suggestions were made by the experimenter as to how the messages should be enacted. Research indicates that abilities to send via

spontaneous and posed cues are substantially correlated (Zuckerman, Hall, DeFrank, & Rosenthal, 1976), and lack of spontaneity was not considered a problem. Only the head and neck were videotaped. Each encoder wore the same neutral clothing; jewelry and eyeglasses were not worn.

Prejudgment of voices and facial expressions. In order to determine whether the nonverbal components contained the intended emotional content, independent ratings were made of the faces and voices of each message. The evaluative dimension was explained to small independent groups of raters by (a) defining the dimension as representing friendliness, consideration, or approval, versus unfriendliness, inconsiderateness, or disapproval, and (b) through the use of six videotaped anchor scenes which demonstrated highly positive, highly negative, and neutral messages. To rate the faces, raters were shown each videotaped message on a 12-inch (30.48 cm) TV monitor without script or voice. (See Appendix B for subjects' instructions for evaluating faces.) To rate the voices, raters heard the voice (without seeing the face) stripped of intelligibility using a random-splicing method developed by Scherer (1971). In this method, audiotape recorded at 7 1/2 cycles per second is cut into 1-inch to 2-inch segments and then spliced back together in random order. The result is a tape which quite literally sounds like gibberish; all of the pitch and loudness qualities of the voice are preserved,

yet the words are unrecognizable and the temporal aspects of speech are destroyed. This technique has been successful in masking speech intelligibility while preserving speech affect in several studies--even more successfully than masking by electronic filtering (Scherer, Koivumaki, & Rosenthal, 1972; Rosenthal et al., 1979). (See Appendix C for subjects' instructions for rating random-spliced voices.) Voices were random-spliced only to ensure that voice ratings were not confounded with verbal content. In the experiment proper, when all channel information was presented simultaneously, verbal content was intact, not random-spliced.

Messages were retained only if each channel was rated as had been intended (i.e., if raters judged a scene as having a positive face, negative voice, and negative script, it was included in the present study only if the encoder had originally portrayed it as such).

Selection of multichannel messages. From the pool of eligible messages I selected a subsample of 32 which represented each of the 16 combinations of face, voice, and script enacted by a White and a Hispanic encoder to serve as the experimental stimuli. These messages had the most positive (or negative) ratings in the desired channels, regardless of encoder. Since some encoders were more successful than others in portraying the messages, encoders were not counterbalanced, nor did they appear

equally in the experimental design. Appendix D summarizes the independent mean ratings for faces, random-spliced voices, and scripts, and specifies the encoders selected to convey each message.

Variation of expectation using contextual information. Subjects were randomly assigned to one of four expectation groups. One half the subjects in each group were male, one half were female. Each group was presented with different contextual cues in the tape recorded instructions played at the beginning of the experiment. These instructions varied the amount of money contributed and the verbal response given by the off-screen donor to the charity collector prior to the charity collector's on-screen response to the donor, which was then judged by the subject. In this way I hoped that an expectancy would be communicated to the subject by the off-screen donor's behavior, and that the interpretation of the charity collector's attitude would be affected by this previously occurring off-screen donor's actions.

Judgment of multichannel messages. Eight independent groups of subjects (four expectation groups x two random orders) judged the 32 messages in succession. In addition, four practice messages were shown at the beginning of the experimental session (two very positive and two very negative) to give the subjects both a frame of reference for

their judgments and to acquaint them with the kinds of messages they would be observing. Subjects received one of two presentation orders. The videotaped messages were presented on a 12-inch (30.48 cm) monitor. Figure 3 shows a schematic representation of the experimental situation.

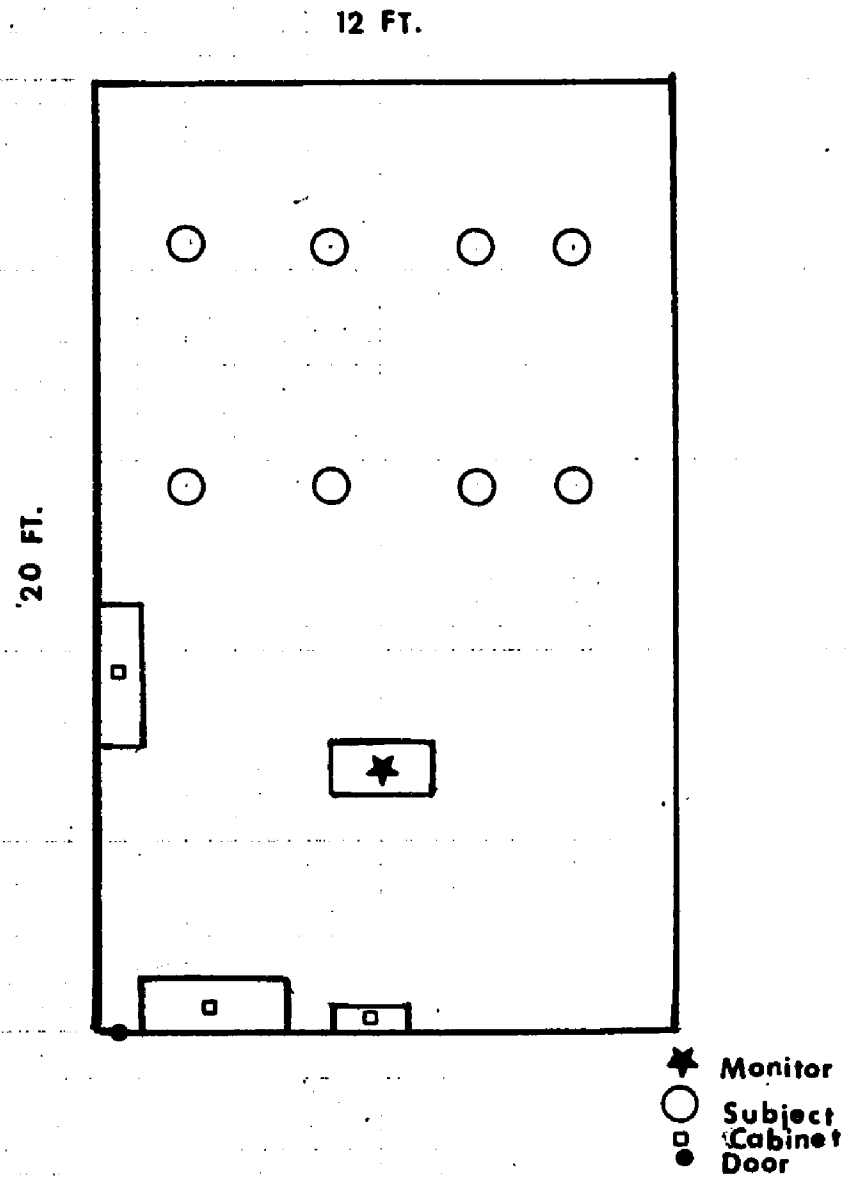
The four expectation groups differed in the amount of contextual information they received and/or the kind of attitudinal response they were led to expect.

Group 1, "no context," was provided with no contextual information. This group provided baseline impressions of the attitudes conveyed by the encoders. (See Appendix E for subjects' instructions.) These judgments were used to compare with those of subjects where expectations about attitude was provided. The subjects in the "no context" group (a) judged the attitude conveyed by each message on a 10-point positive-negative scale, and (b) rated the certainty of these judgments on a 6-point certain-uncertain scale. It is generally agreed that a 5-point scale is adequate to measure certainty (Kietzman, 1971, note 1).

Group 2, "no expectation," was provided with a context, but with no expectation as to what kind of attitude the encoder would convey. This group was instructed that each of the encoders was an unpaid volunteer collecting for a worthwhile charity which aids retarded children.

Figure 3

Schematic representation of experimental laboratory.


12 FT.
20 FT.
Monitor
Subject
Cabinet
Door

Subjects were told that each volunteer would like to collect as much money as possible, and favorably promote the charity. (See Appendix E for instructions to subjects.) This group, then, was shown the encoders as solicitors for charity but was not given any information about a hypothetical transaction which had just taken place off-camera. The subject's task was to: (a) judge the attitude of the charity solicitor toward an off-screen (but still present) donor on a 10-point positive-negative scale; (b) judge the certainty of those judgments on a 6-point certain-uncertain scale; (c) estimate how much money, on the average, each charity collector would receive from a donor, on a scale ranging from $0 to $10, assuming that the subject had just seen the transaction, and the charity collector continued reacting in her present manner; and (d) decide how much money s/he would contribute to each charity collector, assuming that s/he had seen the transaction, on the same $0 to $10 scale. Subjects in the "no expectation" group, then, gave not only a rating of the encoder's attitude in each message, but they also decided the effectiveness of that attitude in soliciting funds. Lastly, subjects rated themselves on a 14-item altruism questionnaire after all the messages were judged. (See Appendix F for altruism questionnaire.)

Group 3, "positive expectation," was provided with a situational context and an expectation of a positive attitude from the charity collector toward the off-camera donor. Subjects were told the same story concerning the charity volunteers, except that in addition they were instructed that the donor in the transaction they had just viewed had contributed $3.00 and made a pleasant remark. (See Appendix E for instructions to subjects.) The task of the subjects was the same as for group 2, "no expectation." The "positive expectation" group, then, should have expected positive messages from the encoders.

Group 4, "negative expectation," was provided with a situational context and an expectation of a negative attitude toward the off-camera donor, if not an overt negative response, on the part of the encoders. Subjects were told the same story about the charity volunteers, except they were instructed in detail that they were viewing the encoders' responses to a rude and insulting person's contribution of $.05. (See Appendix E for instructions to subjects.) The task of this group was the same as that of the "no expectation" and "positive expectation" groups.

Debriefing. Immediately following participation in the research a group debriefing session was conducted,

following guidelines set forth in Selltiz, Wrightsman, and Cook (1976). Information about the study's purpose and methods was given. Subjects were thanked for their participation, and questions and expressions of feelings were encouraged. In general, subjects expressed interest in the nature and method of the research, and they were pleased to have participated. Many requested that they be notified of the results, and some declined payment, claiming that participating had been a pleasurable, educational experience.

RESULTS

Separate Reporting of Group 1 Results

Since group 1, "no context," essentially replicates the adult part of Bugental, Kaswan, and Love's (1970) study, except for the use of the certainty response measure and the ethnicity variable in the present study, it is instructive and appropriate to analyze the results of this group separately. Subjects in group 1 could sensibly respond only to the impression and certainty scales. Group 2, "no expectation," is a more adequate control for group 3, "positive expectation," and for group 4, "negative expectation," because these three groups of subjects also made judgments on the other's contribution and self contribution scales. The separate analysis of group 1's data, therefore, does not compromise the integrity of the experiment.

Merging of Male and Female Subjects' Data

t tests were conducted on the responses to each of the 32 stimulus messages to determine sex differences on the five response measures. Since the results of these tests are nonsignificant, data for male and female subjects are combined on all subsequent analyses.

Merging of Positive Scripts and Negative Scripts

t tests were conducted on the responses to each of the 32 stimulus messages to determine differences in subjects' responses to the two positive scripts and to the two negative scripts. For the impression and self contribution scales there are no significant differences at the .001 level; for the certainty and other's contribution scale data there are no significant differences at the .05 and .01 levels, respectively. In the interest of parsimony, therefore, data from the two positive scripts are combined, as are data from the two negative scripts, in all subsequent analyses.

Merging of Orders 1 and 2

t tests were conducted to determine any differences in subjects' responses to presentation orders 1 and 2. No significant differences are found, and in all subsequent analyses the data from the two random orders are combined.

Statistical Analyses--Group 1

Group 1, "no context," made judgments of the encoders on two rating scales: a 10-point positive-negative scale for impression, and a 6-point certain-uncertain scale for certainty. (See Appendix F for rating scales.) A four-way repeated measures analysis of variance (repeated on face, script, voice, and encoder's ethnicity) was

computed on both of these rating scale judgments to determine the significant main effects and interactions. Duncan and Scheffé ranges were computed post hoc to determine which pairs of means differ significantly.

Impression--Group 1

Main Effects

Table 1 shows the results of the analysis of variance on the impression of attitude scale. Face, voice, and script are significant at the .001 level; ethnicity is significant at the .05 level. Means for main effects are shown in Tables 3-6 (column and row marginals). Positive faces, voices, and scripts are judged more positive than are negative faces, voices, and scripts; White encoders are judged more positive than Hispanic encoders.

Interaction Effects

Means for interaction effects are shown in Tables 3-13. The following interactions are significant.

Ethnicity x voice (Table 4). Scheffé's test shows ($p < .01$) that voice affects subjects' impressions of Hispanic encoders more than impressions of White encoders.

Ethnicity x script (Table 6). Results of the Scheffé test ($p < .01$) show that White encoders are judged more

positive than Hispanic encoders, when script is positive.

Face x script (Table 7). The Scheffé test ($p < .001$) shows that (a) there is an additive effect when congruent channels are combined, and a subtractive effect when incongruent channel information is combined; (b) face and script exert approximately equal influence on impressions.

Voice x script (Table 8). Results of the Scheffé test ($p < .001$) show that (a) Hispanic encoders are judged more negative than Whites, when face and voice are jointly positive; (b) Whites are judged more negative than Hispanics in negative face, positive voice messages. Thus, face affects the judgment of Hispanic encoders more than they affect White encoders.

Ethnicity x face x script (Table 10). Scheffé's test ($p < .01$) shows that (a) face affects impression judgments of Hispanic encoders more than script does; (b) Hispanic encoders are judged more negative than White encoders, when face and script are negative.

Ethnicity x face x voice x script (Table 13). Results of the Scheffé test ($p < .05$) show that the encoder's ethnicity is significant only in positive face, negative voice, negative script messages.

Summary of Group Results on Impression Scale

To summarize, these results somewhat parallel those obtained by Bugental, Kaswan, and Love (1970) in that face,

voice, and script all had significant main effects in the expected direction on subjects' impressions of the encoders' attitudes. However, face is not clearly a dominant channel in the present study; script exerts approximately equal influence. Results of ethnicity are interesting: White encoders produce more positive impressions than Hispanics in one kind of message--positive face, negative voice, negative script. This kind of message is described by Bugental et al.'s adult subjects as "giving up." Apparently, encoder ethnicity is an important variable in decoding some kinds of messages, but not in most, according to the present results.

Certainty--Group 1

Main Effects

Table 2 shows the results of the analysis of variance for the certainty scale data. Relevant means are shown in Tables 3-6 (column and row marginals). There are no significant main effects.

Interaction Effects

Means for interaction effects are shown in Tables 3-13. The following interactions are significant.

Face x voice (Table 5). Results of the Scheffé test ($p < .01$) show that positive voice messages yield more

certain judgments than negative voice messages, when face is positive. Thus, subjects are more certain of congruent positive messages than of mixed or negative messages.

Face x script (Table 7). The Scheffé test shows ($p < .001$) that positive scripts yield more certain judgments than negative scripts, when voice is positive. Again, subjects are more certain of congruent positive messages than of any other.

Voice x script (Table 8). Results of the Scheffé test ($p < .05$) show that congruent messages are judged with more certainty than incongruent messages.

Summary of Group 1 Results on Certainty Scale

To summarize, two general effects are apparent from the certainty data: (1) congruent messages are judged with more certainty than mixed messages, and (2) positive messages are judged with more certainty than negative messages.

Statistical Analyses--Groups 2, 3, 4

The two rating scales which measured impression of attitude and certainty in group 1 were administered to groups 2, 3, and 4; "no expectation," "positive expectation," and "negative expectation," respectively. In addition, these groups judged the encoders on two additional rating scales: other's contribution--on which subjects estimated

how much money another person would contribute to each charity collector-encoder, and self contribution--on which subjects decided how much money they would hypothetically contribute to each charity collector-encoder. A 5-way analysis of variance with repeated measures on four factors (face, ethnicity, script, and voice; expectation was not repeated) was computed for the results of each of the rating scales to determine the significant main effects and interactions. Duncan and Scheffé ranges were computed post hoc to determine which pairs of means differed significantly. All data from groups 2, 3, and 4 are combined.

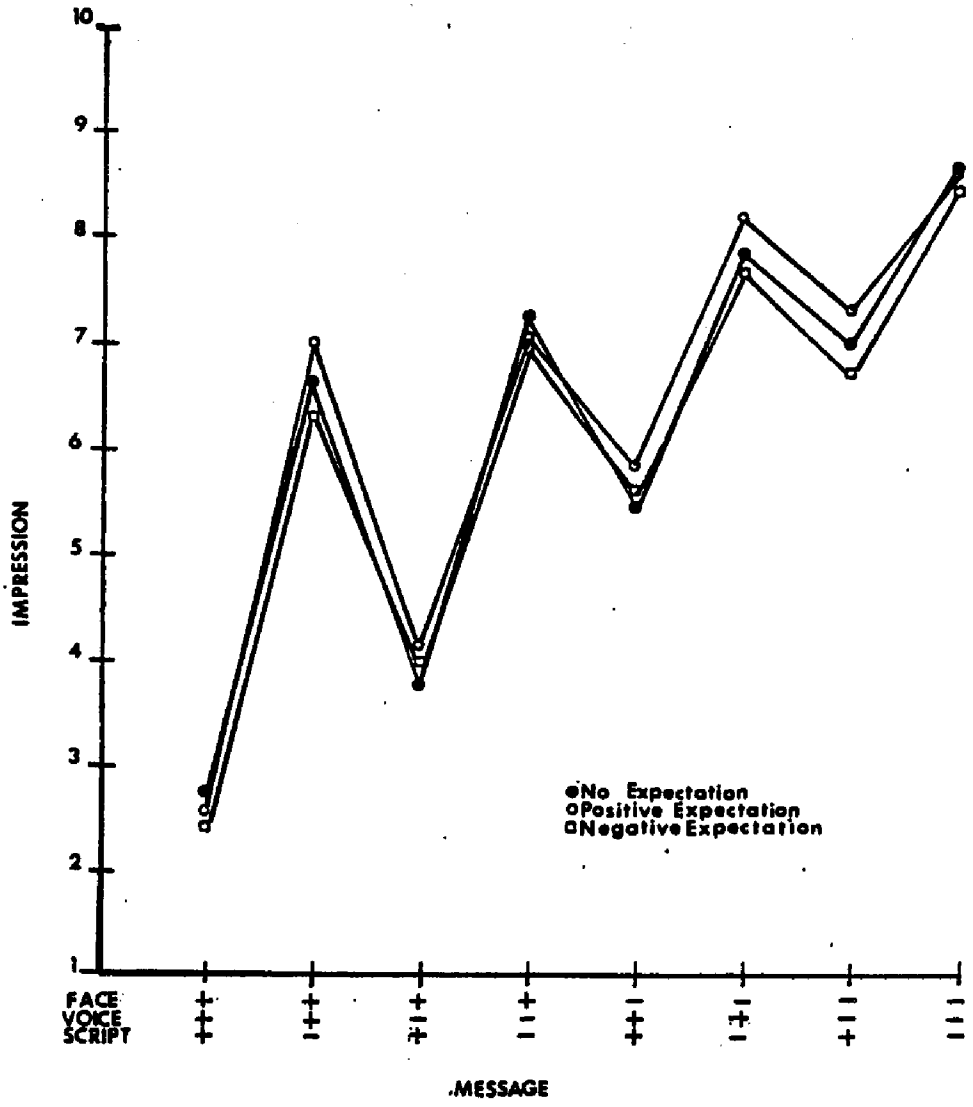
Impression--Groups 2, 3, 4

Main Effects

Figure 4 shows the mean impression of attitude ratings for groups 2, 3, and 4. Table 14 shows the results of the analysis of variance for impression for groups 2, 3, and 4. Relevant means for main effects are shown in Tables 18-21 (column and row marginals). Face, voice, and script are significant at the .001 level; expectation and ethnicity are significant at the .05 level. The direction of the effects for face, voice, script, and ethnicity are the same for groups 2, 3, and 4 as for group 1: positive variables are judged more positive than negative variables, and White encoders are judged more positive than Hispanics.

Figure 4

Mean impression ratings for groups 2, 3, and 4.


10
9
8
7
6
5
4
3
2
1
IMPRESSION
●No Expectation
○Positive Expectation
□Negative Expectation
FACE
VOICE
SCRIPT
+ + +
+ + −
+ − +
+ − −
− + +
− + −
− − +
− − −
MESSAGE

The expectation effect is that groups 3 and 4 differ from each other, but not from group 2 (Duncan, $p < .05$). Subjects who expected the encoders to respond with positive attitudes rate them as more positive than subjects who expected negative attitudes.

Interaction Effects

Means for the interaction effects on the impression scale for groups 2, 3, and 4 are shown in Tables 18-43. The following interactions are significant.

Ethnicity x voice (Table 23). Results of the Scheffé test ($p < .001$) show that White encoders are judged more positive than Hispanic encoders, when voice is positive.

Ethnicity x script (Table 25). Scheffé test results ($p < .01$) show that Hispanic encoders are judged more negative than White encoders, when script is positive.

Face x script (Table 26). Results of the Scheffé test ($p < .001$) show that both face and script affect impression of attitude, but script affects impression more than face does.

Voice x script (Table 27). The Scheffé test ($p < .001$) shows that both voice and script affect impression of attitude, but script affects impression more than voice does.

Ethnicity x face x voice (Table 34). Results of the

Scheffé test ($p < .001$) show that (a) ethnicity affects impression of attitude when face is positive and voice is negative; (b) voice affects impression of attitude for both White and Hispanic encoders when face is negative, but it affects only Hispanic encoders when face is positive; (c) face affects impression of attitude judgments more than voice does.

Ethnicity x face x script (Table 35). The Scheffé test results ($p < .001$) show that congruent positive messages and the congruent negative messages yield highly positive and negative impressions of attitude, respectively. The positive and negative information in the mixed messages almost cancel each other, although the overall impression is negative.

Summary of Results for Groups 2, 3, and 4 on Impression Scale

To summarize and integrate the results on the impression scale for groups 2, 3, and 4, face, voice, and script variables show significant main effects in the expected direction, as was the case for group 1 subjects: positive evaluative content was judged more positive than negative evaluative content. Again, White encoders are judged as having more positive attitudes than are Hispanic encoders. In addition, "positive expectation" and "negative expectation" groups differ from each other in the expected direction, but do not differ from the "no expectation" group.

Script is the dominant channel, affecting impression of attitude judgments more than face; and both script and face are more salient than voice. The hierarchy of the script, face, and voice channels is clearer in the data of groups 2, 3, and 4 than in the results of group 1, but it contradicts the results of Bugental, Kaswan, and Love (1970) and Mehrabian (1972). Those researchers found that face is the most influential channel.

A more pervasive ethnicity effect is found in the data for groups 2, 3, and 4 than is found in group 1. White encoders are judged more positive in attitude than Hispanic encoders not only in positive face, negative voice messages, but the main effect is not cancelled out, as it is in group 1.

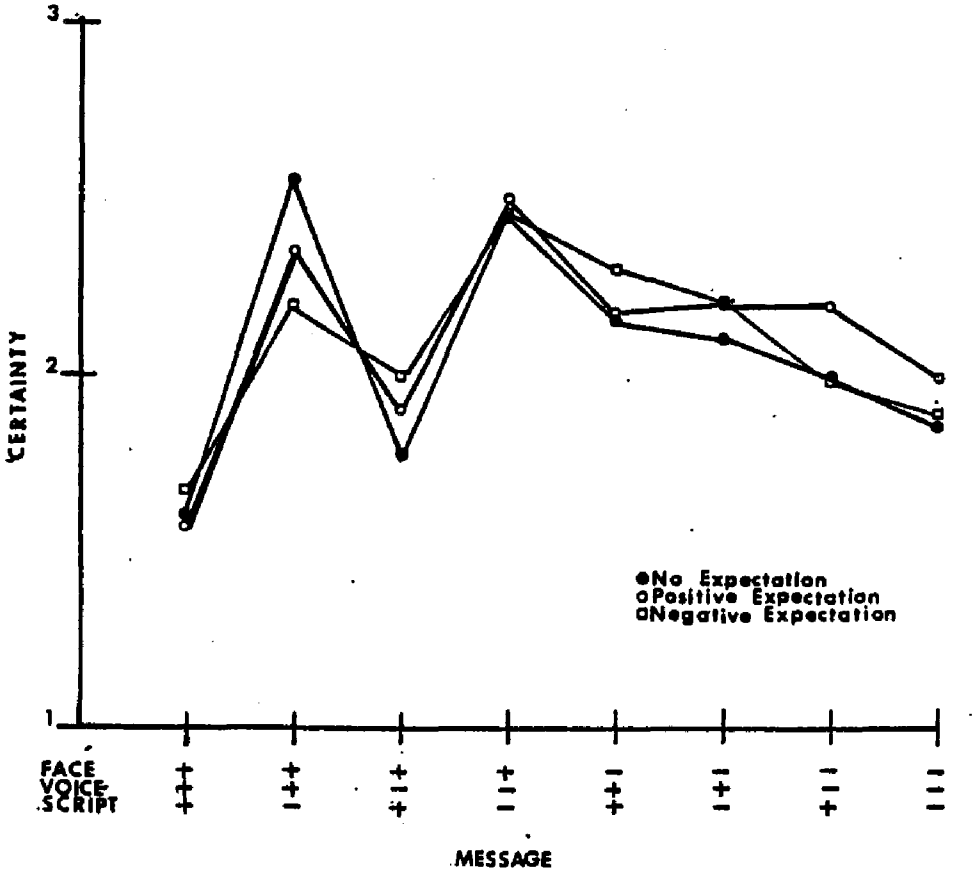
Certainty--Groups 2, 3, 4

Main Effects

Figure 5 shows the mean certainty ratings for groups 2, 3, and 4. Table 15 shows the results of the analysis of variance on the certainty scale data for these groups. Means are shown in Tables 18-21 (column and row marginals). The only significant main effect is script. Subjects are more certain of their impressions of attitude when messages contain positive verbal content.

Figure 5

Mean certainty ratings for groups 2, 3, and 4.


3
2
1
CERTAINTY
●No Expectation
○Positive Expectation
□Negative Expectation
FACE
VOICE
SCRIPT
+ + +
+ + −
+ − +
+ − −
− + +
− + −
− − +
− − −
MESSAGE

Interaction Effects

Means for interaction effects on certainty scale data for groups 2, 3, and 4 are shown in Tables 18-43. The following interactions are significant.

Expectation x ethnicity (Table 18). Although the analysis of variance shows a significant effect, results of Duncan's test ($p < .05$) failed to reach significance.

Face x voice (Table 24). Results of the Scheffé test ($p < .01$) show that subjects are more certain of congruent messages than of mixed messages.

Face x script (Table 26). The Scheffé test results ($p < .001$) show that script affects certainty judgments of attitude when face is positive, increasing certainty in congruent messages and reducing it in mixed messages, whereas negative face overrides the effect of positive script.

Voice x script (Table 27). Results of the Scheffé test ($p < .01$) show that subjects are more certain of their attitude judgments of positive scripts, echoing the main effect for script.

Expectation x face x voice (Table 30). Duncan's test ($p < .05$) shows that congruent messages yield more certain impressions of attitude than some of the mixed messages.

Expectation x ethnicity x script (Table 31). The

results of the Scheffé test ($p < .05$) show that script affects certainty judgments of impression of attitudes in all messages portrayed by Hispanic encoders, but only affects messages portrayed by White encoders when there is a negative expectation.

Ethnicity x face x script (Table 35). Results of Scheffé's test ($p < .01$) shows that (a) subjects are more certain of congruent positive face and script messages than of negative congruent face and script messages; (b) in positive face, negative script messages, Hispanic encoders are judged with more certainty than are White encoders. In these kinds of messages, White encoders are judged with the least certainty.

Summary of Results of Groups 2, 3, and 4 on Certainty Scale

To summarize the results of the certainty data for groups 2, 3, and 4, the same two general effects occur here as in group 1: (1) positive and negative congruent messages are judged with more certainty than are mixed messages, and (2) positive messages are judged with more certainty than negative messages. In addition, script exerts a main effect; this does not occur in group 1. Thus, subjects in groups 2, 3, and 4 are more certain of verbal content than of nonverbal information, a finding consistent with the view that we are usually consciously

aware of the verbal part of a message, but generally less aware of the nonverbal elements (Argyle, 1975). Further, Hispanic encoders are judged with more certainty than White encoders, in positive face, negative script messages. There seems no ready explanation for this isolated finding.

Other's Contribution--Groups 2, 3, 4

Main Effects

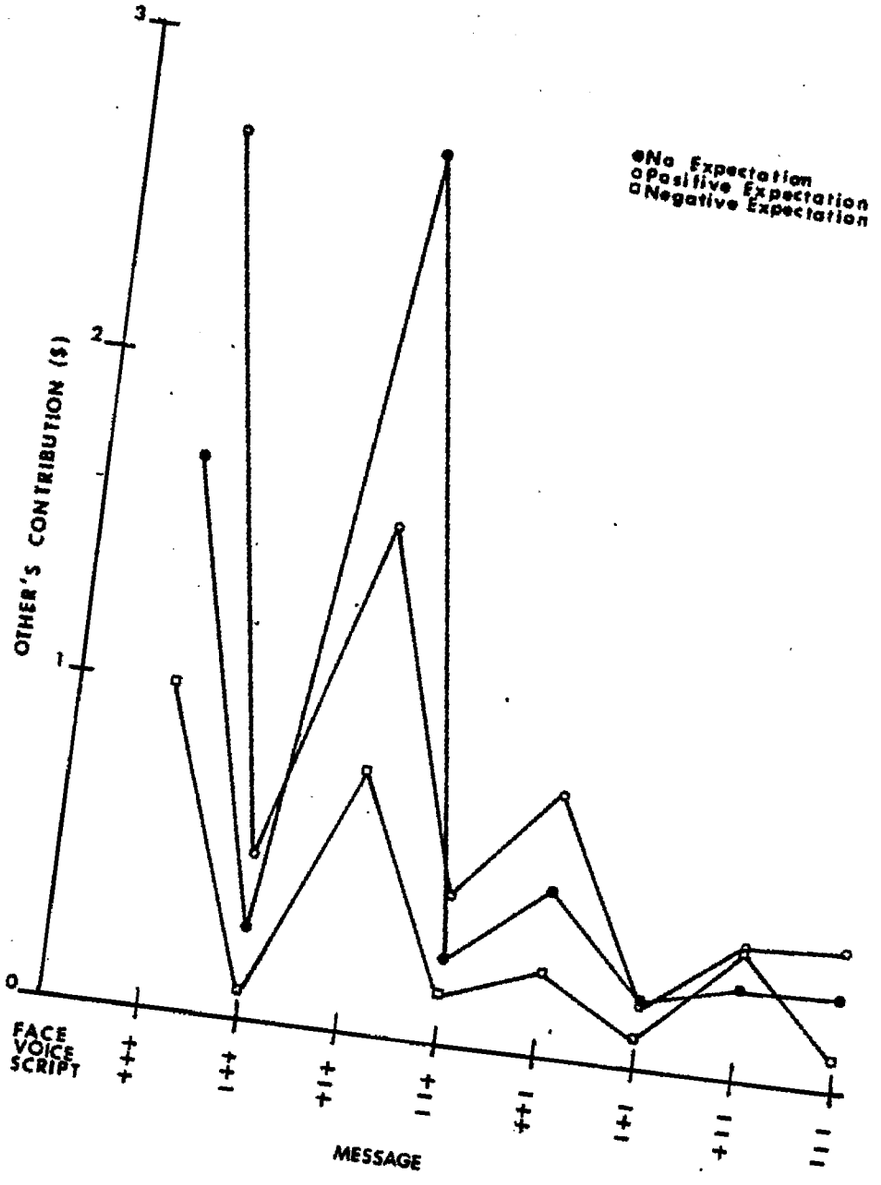
Figure 6 shows the mean other's contribution ratings for groups 2, 3, and 4. Table 16 shows the results of the analysis of variance for other's contribution data. Means are shown in Tables 18-21 (column and row marginals). Face and script are significant at the .001 level of significance, in the expected direction; expectation is significant at the .05 level, the effect being that "positive expectation" and "negative expectation" differ from each other (Scheffé, $p < .05$).

Interaction Effects

Means for the interaction effects for the other's contribution data are shown in Tables 18-43. Only face x script is significant (Table 26). Results of Scheffé's test ($p < .001$) show that face and script effects are due solely to their interaction, since all messages involving a negative channel are discriminable.

Figure 6

Mean other's contribution ratings for groups 2, 3, and 4.


●No Expectation
○Positive Expectation
□Negative Expectation
OTHER'S CONTRIBUTION ($)
3
2
1
0
FACE
VOICE
SCRIPT
MESSAGE

Summary of Results of Groups 2, 3, and 4 on Other's Contribution Scale

To summarize the other's contribution data, the only significant main effect not explained wholly by an interaction is expectation. In addition, positive face and script interact to produce the highest estimated other's contribution.

Self Contribution--Groups 2, 3, 4

Main Effects

Figure 7 shows the mean self contribution ratings for groups 2, 3, and 4. Table 17 shows the results of the analysis of variance for the self contribution data. Means are shown in Tables 18-21 (column and row marginals). Face, voice, and script are significant at the .001 level, positive evaluative content being judged more positive than negative evaluative content. Ethnicity of the encoder is significant at the .01 level, with White encoders being given larger self contributions than Hispanic encoders.

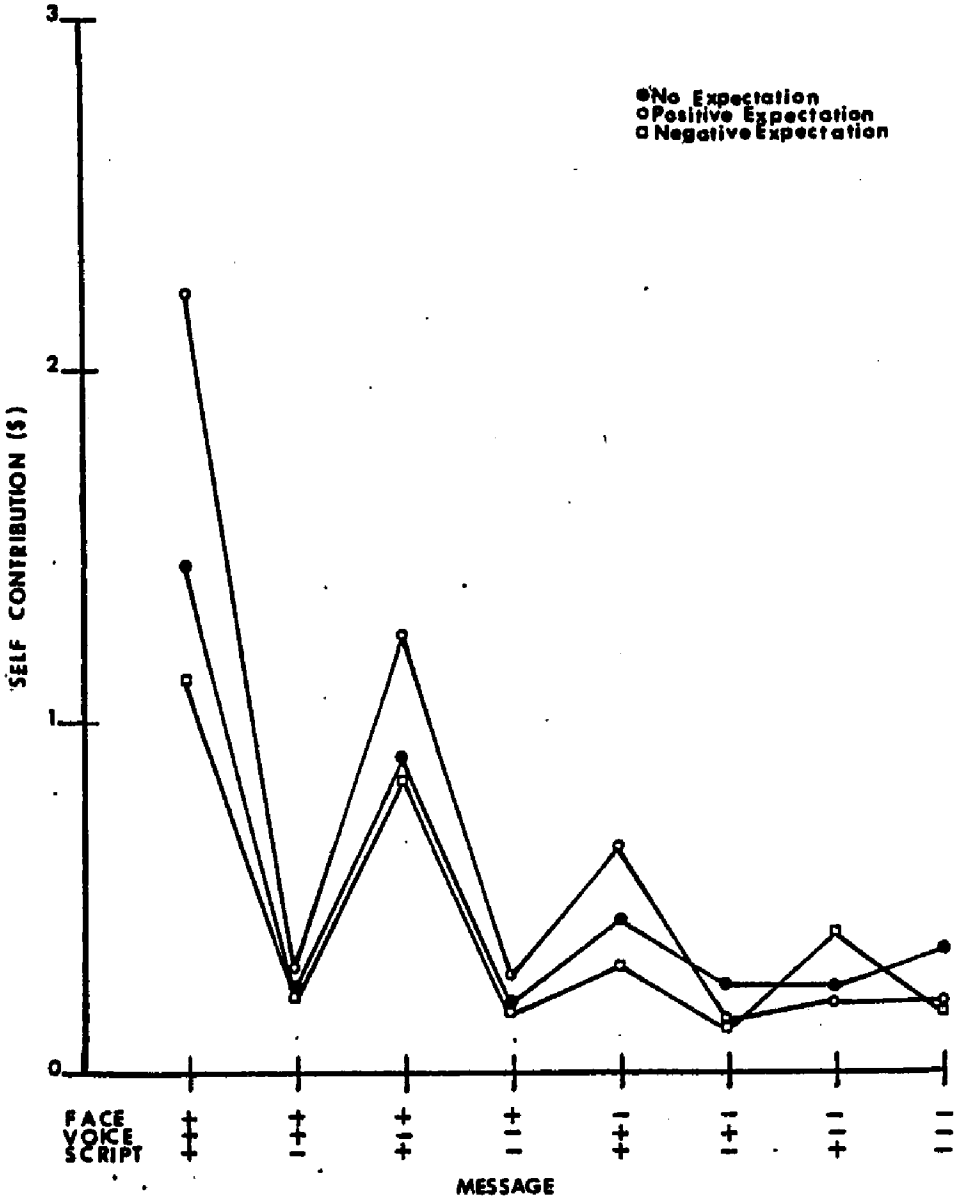
Interaction Effects

Means for interaction effects are shown in Tables 18-43. The following interactions are significant.

Expectation x face (Table 19). Results of Duncan's test ($p < .05$) show that positive face, positive expecta-

Figure 7

Mean self contribution ratings for groups 2, 3, and 4.


3
2
1
0
SELF CONTRIBUTION ($)
●No Expectation
○Positive Expectation
□ Negative Expectation
FACE
VOICE
SCRIPT
MESSAGE

tion messages yield larger hypothetical self contributions than other messages.

Expectation x voice (Table 20). Duncan's test ($p < .05$) shows that voice influences self contributions more than expectation does, except when expectation is negative.

Ethnicity x voice (Table 23). Results of the Scheffé test ($p < .001$) show that ethnicity of encoder and voice effects are due solely to their interaction, since all messages involving White encoders or a positive channel are not discriminable from each other.

Face x voice (Table 24). The Scheffé test ($p < .001$) shows that face affects self contribution more than voice does.

Ethnicity x script (Table 25). Results of the Scheffé test ($p < .01$) show that White encoders speaking positive scripts are given larger self contributions than are Hispanic encoders.

Face x script (Table 26). Scheffé's test shows ($p < .001$) that face and script effects are due solely to their interaction, since all messages involving a negative face or script are not discriminable from each other.

Voice x script (Table 27). Results of the Scheffé test ($p < .001$) show that negative script overrides the effect of voice in self contributions.

Expectation x voice x script (Table 33). Results of

the Scheffé test ($p < .01$) shows that (a) negative script overrides the effects of expectation and voice; (b) positive script overrides the effect of expectation; (c) when voice is positive, positive and negative expectations produce larger and smaller self contributions, respectively.

Ethnicity x face x voice (Table 34). The Scheffé test ($p < .01$) shows that ethnicity is discriminable only in positive face, negative voice messages--negative voice reduces self contributions to Hispanic encoders, but has no effect on self contributions to White encoders.

Face x voice x script (Table 37). Results of the Scheffé test ($p < .001$) show that (a) positive face and positive script messages yield large self contributions, with voice barely a factor; (b) script is discriminable only when face is positive.

Ethnicity x face x voice x script (Table 42). The Scheffé test ($p < .001$) shows that (a) ethnicity is discriminable when face and script are positive and voice is negative; (b) Hispanic encoders are given smaller self contributions than White encoders, when voice is negative.

Summary of Results of Groups 2, 3, and 4 on Self Contribution Scale

To summarize the self contribution data for groups 2, 3, and 4, there are no main effects which are not wholly

due to an interaction effect. Face is a more salient channel than voice, and voice is more salient than expectation, except when expectation is negative. A couple of encoder ethnicity effects are significant; Hispanic encoders speaking in negative voices are given smaller self contributions than any other encoder—message combination, whereas White encoders speaking positive scripts are given larger contributions than Hispanics speaking the same words.

Effect of Decoder's Ethnicity

To determine if there were any differences in the responses of the three major subject ethnic groups (Blacks, n=52; Hispanics, n=23; Whites, n=22) a 5-way analysis of variance was conducted on the data of subjects in groups 2, 3, and 4 from those ethnic backgrounds. (Ethnicity of decoder was a nonrepeated measure; expectation was excluded.) These data are summarized in Tables 44-47.

Four results are of interest. First, there are no encoder ethnicity by decoder ethnicity interactions. Thus, the encoder ethnicity results of the present study which are significant may be wholly attributed to the encoders, not to the heterogeneous subject population. Secondly, results on the other's contribution scale (Table 46) show that face and script are strong main

effects for Black and Hispanic subjects, but are not significant for White subjects. Thus there are major differences in the way decoders of different ethnic backgrounds use channel information, apart from the encoder's ethnicity. Thirdly, the decoder's ethnicity x face interaction is significant on the impression scale (Scheffé, $p < .05$). The means for Blacks, Hispanics, and Whites on positive faces are 4.971, 5.283, and 5.307, respectively; the means for these same decoder ethnic groups on negative faces are 7.347, 7.408, and 7.037, respectively. Duncan's test ($p < .05$) shows that face affects White subjects less than it does Black and Hispanic subjects. From these data it is not possible to determine, however, where the White subjects' attention is concentrated. Lastly, the decoder's ethnicity x script interaction on the certainty scale is significant (Scheffé, $p < .05$). The means on positive scripts for Black, Hispanic, and White subjects are 2.026, 1.739, and 1.966, respectively; for these same decoder ethnic groups the means on negative scripts are 2.317, 2.217, and 2.043, respectively. Scheffé's test ($p < .05$) shows that negative scripts are judged with less certainty than positive scripts by Black and Hispanic subjects, but all scripts are judged with equal certainty by White subjects.

Altruism--Groups 2, 3, 4

An altruism questionnaire was administered to subjects in groups 2, 3, and 4 after they had judged all 32 messages with respect to the other four response measures. This 14-item questionnaire (see Appendix F) was a modification of a scale developed by Wrightsman (1964) as part of a comprehensive instrument designed to assess the philosophy of human nature. Although Wrightsman presented his items in a standard 6-point Likert format, ranging from +3 (agree strongly) to -3 (disagree strongly), I presented these same items to subjects in a simplified agree/disagree format, to save administration time and for scoring ease. Thus, the scores reported here are not directly comparable to Wrightsman's standardized scores. He reported that when scores may vary from -42 (extremely negative) to +42 (extremely positive) the average score is -3.7. Scores of the present sample may range from zero (extremely negative) to +14 (extremely positive); the mean is 5.286, with a variance of 7.321, and a range of 14. The present subjects, then, like Wrightsman's, seem to be less, rather than more, altruistic.

Intercorrelations Between Response Measures--Groups 2, 3, 4

Correlation coefficients among the five response measures were computed to determine the degree of relation-

ship between them. Pearson correlation coefficients were computed for those relationships involving other's contribution and self contribution estimates, since it had been determined that responses on these measures are normally distributed. Spearman correlation coefficients were computed for those relationships involving impression of attitude, certainty, and altruism, because responses on these measures are not normally distributed. For each pair of response measures a correlation coefficient was computed for each of the 32 messages. The percentage of correlations that reached statistical significance is reported for selected pairs of response measures.

Impression and certainty. The percentage of significant positive correlations between subjects' impressions of attitude and their certainty of those impressions is 69%, $p < .05$. Thus, there is a strong relationship between positive impressions of attitude and subjects' certainty of those impressions.

Impression and other's contribution. The percentage of significant negative correlations between impression of attitude and other's contribution is 91%, $p < .001$. There is an extremely strong relationship, then between subjects' positive impressions of attitude and the amounts of money that they report another person would contribute to the encoders.

Impression and self contribution. The percentage of significant negative correlations between impression of attitude and self contribution is 93%, $p < .001$. There is an extremely strong relationship, then, between subjects' positive impressions of attitude and the amounts of money that they would hypothetically contribute to the encoders.

Other's contribution and self contribution. The percentage of significant positive correlations between subjects' estimates of other's contribution and self contribution is 97%, $p < .001$. Thus, there is almost complete agreement in direction between subjects' estimates of other's contributions and self contributions.

Altruism and impression. The percentage of significant positive correlations between subjects' impressions of attitude and altruism scores in 25%, $p < .05$. There is a slight relationship between impressions of attitude and altruism: subjects who rated the encoders as more negative assessed themselves as more altruistic than subjects who rated the encoders as more positive. Perhaps those altruistic subjects, who in general expect people to be sincere and giving, reacted more strongly to the seeming unappreciativeness of the encoders to the small charity donations.

Altruism and other's contribution. The percentage of significant positive correlations between subjects'

estimates of other's contribution and their altruism scores is 12.5%, $p < .05$. There is a negligible relationship, then, between what subjects believe another person would contribute to the encoders and how altruistic they are.

Altruism and self contribution. The percentage of significant positive correlations between subjects' self contributions and their altruism scores is 9.38%, $p < .05$. Thus, there is a negligible relationship between what subjects would hypothetically contribute to the encoders and how altruistic they are.

DISCUSSION

Comparison of Results with Bugental, Kaswan, and Love (1970)

In comparison to the Bugental, Kaswan, and Love (1970) study, which was replicated in part by the "no context," group 1 condition, several points can be made. First, in both studies there were main effects for face, voice, and script in the expected direction: positive evaluative content in all these channels was given more positive impressions, and in the instance of the present study, larger other's and self contributions. In the present experiment, however, face is clearly not the dominant channel that it was in the Bugental et al. study; here face and script carry equal weight in the "no context" condition, and script is the dominant channel in the "no expectation," "positive expectation," and "negative expectation" conditions. Voice is the least influential channel in the present study, whereas it was second in importance in the Bugental et al. study. This discrepancy may be a result of encoding differences between White and Hispanic encoders in the present study and Bugental et al.'s White, middle class encoders. Since Bugental et al. do not report equating for strength of evaluative content across channels, it is possible that her encoders were most expressive in the facial

channel, whereas encoders in the present study (at least the Hispanic ones) were most expressive in the vocal channel. This emphasis on voice may also have focussed attention on the script more than in Bugental et al.'s study. Alternatively, Bugental, Kaswan, and Love's decoders were middle class Whites, in contrast with the subjects in the present study who were of mixed ethnic backgrounds and whom probably could be most accurately characterized as working class or lower middle class. Thus either encoding or decoding differences could have been responsible for the disparity of results between the present study and Bugental's. The results of this study, which show that there are decoding differences among subjects of different ethnic groups, support the decoding differences hypothesis, but does not preclude the encoding difference alternative.

One similarity between the present experiment's results and those of Bugental et al., as well as those of Frijda (1969), is that negative information is weighted more heavily than positive information. That this occurred in three studies under very different conditions make it a very reliable result. Thus we should remember that when we send negative messages it is likely that the negative information will be heavily counted, regardless of which channel carries it.

Situational Expectation in Decoding Multichannel Messages

I expected that subjects' impressions of the encoders' responses would be influenced in part by the instructions given at the beginning of the experimental session. These instructions included contextual information regarding an off-camera donor's monetary contribution and verbal response which supposedly occurred prior to the charity collector's response to the donation (for groups 3 and 4). This information presumably communicated to the subjects what kind of response to expect from the charity collector. I hypothesized that this expectation variable would interact with the channel information provided by the face, voice, and script to either enhance or negate some channel information. Rather, expectation had the main effect that positive expectation resulted in positive attitude judgments and other's contributions, and negative expectations resulted in negative attitude judgments and smaller other's contributions. Expectation had no interpretable effect on either subjects' certainty judgments or hypothetical monetary self contributions.

This result raises the suspicion that subjects were reacting to the effect they guessed expectationshould have rather than to any complex effect of that variable on their impression of the encoder's attitude, i.e.,

subjects were trying to be "good" more than anything else. This may have been caused by the way that expectation was manipulated--it was presented on audiotape at the beginning of the experimental session as compared to the videotaped attitudes, which immediately preceded in time subjects' judgments. Although reminded throughout the experiment to recall the situation that the charity solicitors were reacting to, the visual, vocal, and verbal stimuli might have easily overshadowed expectation merely because of the time discrepancy between presentation of expectation and attitude judgment. In the future, greater effort should be made to make subjects' situational expectations as immediately available sensorally and temporally as the encoder variables of face, voice, script, and ethnicity, equating for strength of source clarity in Ekman, Friesen, and Ellsworth's (1972) terminology. This could perhaps best be accomplished by showing the actual encoder-donor interaction on videotape just prior to assessing the encoder's reaction to the donor. The effect of expectation could then be more accurately determined.

Encoder's Ethnicity and Multichannel Communications

The encoder's ethnicity affects impression, only on positive face, negative voice messages for group 1,

but it has a main effect on impression of attitude and self contribution for groups 2, 3, and 4, as well as several interaction effects. There is a consistent difference, then, in the favorableness of the impression made by Whites and Hispanics. In the literature there is a history of minorities being judged as possessing less desirable characteristics than people perceived as members of minority groups. In a 1950 study, for example, Razran showed that "adding an ethnic label to a photograph caused a shift in judgments of the faces in a direction determined by established stereotypes of the ethnic groups to which the stimulus persons apparently belonged" (Warr & Knapper, 1968, p. 299). And Ainsfield, Bongo, and Lambert (1962) investigated the relationship between perception of a minority group status and ascription of certain traits to such minority group members. They had the same actor tape two versions of a speech, using a "Jewish" accent in one version, and an "English" accent in another. Subjects who perceived him as "Jewish" rated the actor much lower on such variables as height, good looks, and self confidence than did those subjects who perceived him as "English." The present subjects also may have been responding to the encoders in a prejudicial manner similar to their subject-predecessors: people from minority ethnic back-

grounds are still judged less favorably than mainstream Americans, even if the judged are of the same ethnic background as the judgees! That there are no ethnicity of encoder x ethnicity of decoder interactions shows that subjects responded less favorably to the Hispanic encoders than to the White encoders regardless of their own ethnicity. The college students who served as subjects are well aware of the advantage of being a member of the majority in America, and presumably, reacted in accordance with that value system.

A deficiency in the present experiment may alternatively explain why Whites are judged more favorably than Hispanics. The present subjects may have reacted to differences in the encoders' strength of evaluative positive or negative content conveyed by the face and voice channels. t tests were performed on the independent ratings for the facial expressions and the scrambled voices of the stimulus messages (see Appendix D for ratings). The means for the White and Hispanic faces are 4.94 and 4.63, respectively. This difference is significant at the .001 level ($t=7.172$, $df=30$). For the scrambled voices the means for the White and Hispanic encoders are 4.79 and 4.90, respectively. This difference is significant at the .05 level ($t=2.1022$, $df=30$). Thus the White encoders are judged as having more negative

faces than Hispanics, but Hispanic voices are judged more negative than White voices. The possibility that subjects responded to these differences, rather than to ethnic ones, cannot be discounted.

Effect of Encoder's Ethnicity

The present results suggest that White and Hispanic encoders emphasize different communication channels: Whites stress facial information whereas Hispanics stress vocal information. That the decoder's ethnicity had no effect on the encoder differences reported here is clearly shown in the analysis of variance for Black, Hispanic, and White subjects only. Hispanic subjects do not attend to voice more than facial expression, which would seem to be a distinct disadvantage for accurate decoding. However, subjects in the present experiment were college students, well acquainted with and acculturated into American life. This may account for the Hispanic subjects responding similarly to the Black and White subjects. If Hispanics in their native cultural setting are tested, they may place more importance on vocal rather than facial information. It would indeed be interesting to discover if these channel preferences in encoding are paralleled by decoding channel emphases. And if a change in culture brings about a change in

decoding strategy (as it may have done in the present study), at what age and under what conditions does this occur, and do encoding changes also occur, but more slowly?

Effect of Decoder's Ethnicity

There are also differences which are due to the subject's ethnicity. First, on the impression scale, positive facial expressions are judged more positive than negative facial expressions by Blacks and Hispanics, but not by White subjects, who judged all faces as between the positive and negative ones judged by the Blacks and Hispanics. Thus White subjects are not as dependent upon facial information in making attitude judgments as Blacks and Hispanics. This result is particularly interesting in light of the encoding differences between Whites and Hispanics--the Whites, who stress the facial channel in encoding, are those least responsive to it in decoding. Since White subjects do not discriminate voice or script to a greater extent than either Blacks or Hispanics, it is not clear where the Whites' attention is focussed.

Secondly, the Whites are more certain of their attitude judgments regardless of the verbal evaluative content of the messages; Black and Hispanic subjects are more

certain of positive rather than negative messages. This confidence might stem from the White subjects being more familiar with standard English than the Black or Hispanic subjects, although the messages used were simple and unambiguous. Also, the raters of the verbal content came from the same population as the present subjects and there was 100% agreement among them as to the positivity or negativity of the scripts. Alternatively, the White subjects may just be more willing to assert their confidence in judging the negative scripts. The minority group subjects may be more fearful of revealing certainty towards messages that have negative scripts, but which also contain positive information through other channels. This could be a function of the laboratory situation or the presence of a White experimenter.

Lastly, face and script are significant main effects for Black and Hispanic subjects, but not for White subjects, on the other's contribution scale. Since White subjects do not depend upon voice more than Black and Hispanic subjects we may conclude that White subjects are less affected by the positive or negative evaluative content of the messages than Blacks and Hispanics when they are asked to estimate how much money another person would contribute to a charity solicitor. Because this result occurred only for the other's contribution data

we may conclude that White subjects make less effective use of this scale than Blacks or Hispanics. It is not clear why White subjects refuse to estimate donations to charity collectors from others. Perhaps to them the question is impossibly vague; after all, there are many rich White people as well as poor, which is not the case for Blacks and Hispanics. Thus Black and Hispanic subjects might not have thought of "another person" giving a $10 donation, for example, whereas the whole range of choices of monetary donations might well have been reasonably considered, and found too overwhelming, to White subjects. Whites may have resolved this situation by having "another person" donate a similar amount to everyone, regardless of the evaluative content of the message.

Usefulness of Multiple Response Measures

The results of the present study make a strong case for using multiple response measures in experiments of attitude judgment. The high correlations between impressions of attitude, self contributions, and other's contributions show that subjects' impressions are consistent with their charitable donations, hypothetically at least. This finding is not surprising, but is one which has implications for the real world. For the most part,

the charity collectors are viewed as saleswomen who must convey a favorable impression in order to collect a large donation; it is a mistake to think the a worthy cause sells itself.

The high correlation between positive impressions of attitude and subjects' certainty of those impressions may have occurred because there is no social price for admitting that a positive attitude was conveyed; however, if one states that he is certain that a negative attitude was conveyed, and it really wasn't, an observer might suspect that the decoder doesn't like the encoder, or that the decoder suspects an ulterior motive of the encoder. In any case, social disapproval could result. This reluctance to admit to a negative impression is particularly adaptive in real life social situations. A decoder of a mixed message might respond as if that message was positive, perhaps to avoid an awkward encounter with the encoder or to preserve some semblance of a friendly relationship. In a future study it would be interesting to see how private responses differ from public ones revealed to the encoder. An impression of attitude scale such as the one used in the present study is an example of a private response, whereas actually asking the decoders to contribute money to the charity solicitors (possibly from a stipend given to them at the

beginning of the experiment) and having the encoders respond to the donation, would be a public response measure.

The present results show that altruism is not correlated with either other's contribution or self contribution; it is somewhat negatively correlated with impression of attitude. People who consider themselves altruistic are not hypothetically more charitable than those who are less altruistic. Nor do self-reported altruists think that other people will contribute more money than cynics think they will; in fact, the opposite trend occurs. Altruism, it seems, does not lead to generosity in the monetary sense. Perhaps altruistic people feel that they and others give in other important ways and need not alleviate any guilt by donating large amounts of money.

Strengths and Weaknesses of the Present Study

In retrospect, I believe the present study has the following advantages over most previous experiments:
(1) One strength is that the present study used many more encoders than has typically been the case in the past. This lessens the danger that encoder idiosyncrasies are judged rather than the evaluative channel content.
(2) The use of encoders and decoders from different ethnic

groups made possible some assessment of ethnic differences in both encoding and decoding.

(3) The advantages of using multiple response measures in assessing nonverbal communications have been demonstrated. The present study along with some others (e.g., Weitz, 1972) shows that additional information can be gained by comparing responses from different measures. Weitz's study in particular shows that nonverbal response measures can more accurately reflect subjects' true feelings than verbal assessment.

On the negative side:

(1) Although the positivity and negativity of the channel information was unambiguous the strength of the evaluative content in each channel was not equated across encoders or across channels. These procedures are requisite for future studies. Particularly, the expectation variable was not presented in a way similar to the face, voice, script, and ethnicity variables. In the future this might be accomplished by conveying the expectation in the same manner and at the same time as other channel information.

(2) As in many other experiments, the decoders in the present study were not representative of their specific ethnic groups but were a select minority. All subjects were students at a large, public university. The minority

subjects probably represent the more ambitious and intellectually minded young people among the generally economically and socially disadvantaged; this may not be true of the White subjects.

(3) Finally, being in an experimental situation is a quite different experience from assessing charity solicitors and making donations in the real world. A person from a minority ethnic background may have different reactions to charity collectors of his/her own or a different ethnicity in real life, but fear being judged discriminatory if he asserts his preference in the laboratory, especially with a White experimenter. The constraints of the laboratory situation must be carefully considered when generalizing from the present results.

Table 1

Analysis of Variance on Impression Scale--Group 1

Source	df	ms	F
Ethnicity	1	8.136	6.700*
Ethnicity X Unit	34	1.214	-----
Face	1	822.075	179.634***
Face X Unit	34	4.576	-----
Voice	1	174.386	92.772***
Voice X Unit	34	1.880	-----
Script	1	757.949	108.263***
Script X Unit	34	7.001	-----
Ethnicity X Face	1	.036	.042
Ethnicity X Face X Unit	34	.870	-----
Ethnicity X Voice	1	18.036	9.194**
Ethnicity X Voice X Unit	34	1.962	-----
Face X Voice	1	.429	.450
Face X Voice X Unit	34	.954	-----
Ethnicity X Script	1	7.429	8.564**
Ethnicity X Script X Unit	34	.867	-----
Face X Script	1	23.822	7.670**
Face X Script X Unit	34	3.106	-----
Voice X Script	1	13.054	10.927**
Voice X Script X Unit	34	1.195	-----
Ethnicity X Face X Voice	1	13.361	12.054**
Ethnicity X Face X Voice X Unit	34	1.108	---
Ethnicity X Face X Script	1	23.004	12.800**
Ethnicity X Face X Script X Unit	34	1.797	-----

Table 1 (continued)

Source	df	ms	F
Ethnicity X Voice X Script	1	6.111	4.696*
Ethnicity X Voice X Script X Unit	34	1.301	-----
Face X Voice X Script	1	4.736	3.127
Face X Voice X Script X Unit	34	1.515	-----
Ethnicity X Face X Voice X Script	1	5.304	4.826*
Ethnicity X Face X Voice X Script X Unit	34	1.099	-----
Unit	34	4.862	-----
Total	559	5.507	-----

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

Table 2

Analysis of Variance on Certainty Scale--Group 1

Source	df	ms	F
Ethnicity	1	.197	.600
Ethnicity X Unit	34	.328	-----
Face	1	1.450	3.322
Face X Unit	34	.437	-----
Voice	1	.429	.673
Voice X Unit	34	.638	-----
Script	1	2.004	3.543
Script X Unit	34	.566	-----
Ethnicity X Face	1	.325	.803
Ethnicity X Face X Unit	34	.405	-----
Ethnicity X Voice	1	.036	.103
Ethnicity X Voice X Unit	34	.350	-----
Face X Voice	1	7.897	13.620***
Face X Voice X Unit	34	.580	-----
Ethnicity X Script	1	.325	1.559
Ethnicity X Script X Unit	34	.209	-----
Face X Script	1	11.286	28.801***
Face X Script X Unit	34	.392	-----
Voice X Script	1	2.511	6.426*
Voice X Script X Unit	34	.391	-----
Ethnicity X Face X Voice	1	.236	.788
Ethnicity X Face X Voice X Unit	34	.300	-----
Ethnicity X Face X Script	1	.197	.647
Ethnicity X Face X Script X Unit	34	.304	-----

Table 2 (continued)

Source	df	ms	F
Ethnicity X Voice X Script	1	.075	.181
Ethnicity X Voice X Script X Unit	34	.416	-----
Face X Voice X Script	1	.236	.702
Face X Voice X Script X Unit	34	.336	-----
Ethnicity X Face X Voice X Script	1	.197	.390
Ethnicity X Face X Voice X Script X Unit	34	.505	-----
Unit	34	7.743	-----
Total	559	.894	-----

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

Table 3

Means for Ethnicity X Face on Impression and Certainty Scales--Group 1

Ethnicity	Face +	Face -	Row Marginals
White			
Impression	4.582	6.989	5.786
Certainty	2.114	2.168	2.141
Hispanic			
Impression	4.807	7.246	6.027
Certainty	2.104	2.254	2.179
Column Marginals			
Impression	4.695	7.118	5.906
Certainty	2.109	2.211	2.160

Table 4

Means for Ethnicity X Voice on Impression and Certainty Scales --Group 1

	Face +	Face -	Row Marginals
Ethnicity			
White			
Impression	5.407	6.164	5.786
Certainty	2.161	2.121	2.141
Hispanic			
Impression	5.289	6.764	6.027
Certainty	2.214	2.143	2.179
Column Marginals			
Impression	5.348	6.464	5.906
Certainty	2.187	2.132	2.160

Table 5

Means for Face X Voice on Impression and Certainty Scales--Group 1

		Voice +	Voice -	Row Marginals
Face +				
	Impression	4.164	5.225	4.695
	Certainty	2.018	2.200	2.109
Face -				
	Impression	6.532	7.704	7.118
	Certainty	2.357	2.064	2.211
Column Marginals				
	Impression	5.348	6.464	5.906
	Certainty	2.187	2.132	2.160

Table 6

Means for Ethnicity X Script on Impression and Certainty Scales--Group 1

	Script +	Script -	Row Marginals
Ethnicity			
White			
Impression	4.507	7.064	5.786
Certainty	2.057	2.225	2.141
Hispanic			
Impression	4.979	7.075	6.027
Certainty	2.143	2.214	2.179
Column Marginals			
Impression	4.743	7.070	5.906
Certainty	2.100	2.220	2.160

Table 7

Means for Face X Script on Impression and Certainty Scales--Group 1

		Script +	Script -	Row Marginals
Face +				
	Impression	3.325	6.064	4.695
	Certainty	1.907	2.311	2.109
Face -				
	Impression	6.161	8.075	7.118
	Certainty	2.293	2.129	2.211
Column Marginals				
	Impression	4.743	7.070	5.906
	Certainty	2.100	2.220	2.160

Table 8

Means for Voice X Script on Impression and Certainty Scales--Group 1

		Script +	Script -	Row Marginals
Voice				
+				
	Impression	4.032	6.664	5.348
	Certainty	2.061	2.314	2.187
-				
	Impression	5.454	7.475	6.464
	Certainty	2.139	2.125	2.132
Column Marginals				
	Impression	4.743	7.070	5.906
	Certainty	2.100	2.220	2.160

Table 9

Means for Ethnicity X Face X Voice on Impression and Certainty Scales--Group 1

	+ Voice	
	Face	
	+	-
Ethnicity		
White		
Impression	4.386	6.429
Certainty	2.036	2.286
Hispanic		
Impression	3.943	6.636
Certainty	2.000	2.429
	- Voice	
	Face	
	+	-
Ethnicity		
White		
Impression	4.779	7.550
Certainty	2.193	2.050
Hispanic		
Impression	5.671	7.857
Certainty	2.207	2.079

Table 10

Means for Ethnicity X Face X Voice on Impression and Certainty Scales--Group 1

	+ Script	
	Face	
	+	-
Ethnicity		
White		
Impression	3.300	5.714
Certainty	1.907	2.207
Hispanic		
Impression	3.350	6.607
Certainty	1.907	2.379

	- Script	
	Face	
	+	-
Ethnicity		
White		
Impression	5.864	8.264
Certainty	2.321	2.129
Hispanic		
Impression	6.264	7.886
Certainty	2.300	2.129

Table 11

Means for Ethnicity X Voice X Script on Impression and Certainty Scales--Group 1

	+ Script	
	Voice	
	+	-
Ethnicity		
White		
Impression	3.871	5.143
Certainty	2.021	2.093
Hispanic		
Impression	4.193	5.764
Certainty	2.100	2.186

	- Script	
	Voice	
	+	-
Ethnicity		
White		
Impression	6.943	7.186
Certainty	2.300	2.150
Hispanic		
Impression	6.386	7.764
Certainty	2.329	2.100

Table 12

Means for Face X Voice X Script on Impression and Certainty Scales --Group 1

		+ Script	
		Voice	
		+	-
Face			
+			
	Impression	2.550	4.100
	Certainty	1.729	2.086
-			
	Impression	5.514	6.807
	Certainty	2.393	2.193

		- Script	
		Voice	
		+	-
Face			
+			
	Impression	5.779	6.350
	Certainty	2.307	2.314
-			
	Impression	7.550	8.600
	Certainty	2.321	1.936

Table 13

Means for Ethnicity X Face X Voice X Script on Impression and Certainty Scales --Group 1

	+ Voice, + Script	
	Face	
	+	-
Ethnicity		
White		
Impression	2.657	5.086
Certainty	1.771	2.271
Hispanic		
Impression	2.443	5.943
Certainty	1.686	2.514

	+ Voice, - Script	
	Face	
	+	-
Ethnicity		
White		
Impression	6.114	7.771
Certainty	2.300	2.300
Hispanic		
Impression	5.443	7.329
Certainty	2.314	2.343

Table 13 (continued)

	- Voice, + Script	
	Face	
	+	-
Ethnicity		
White		
Impression	3.943	6.343
Certainty	2.043	2.143
Hispanic		
Impression	4.257	7.271
Certainty	2.129	2.243

	- Voice, - Script	
	Face	
	+	-
Ethnicity		
White		
Impression	5.614	8.757
Certainty	2.343	1.957
Hispanic		
Impression	7.086	8.443
Certainty	2.286	1.914

Table 14

Analysis of Variance on Impression Scale--

Groups 2, 3, and 4

Source	df	ms	F
Expectation	2	17.519	3.174*
Expectation X Unit	98	5.520	-----
Ethnicity	1	7.426	4.707*
Expectation X Ethnicity	2	4.270	2.706
Ethnicity X Unit	98	1.598	-----
Face	1	1865.494	565.133***
Expectation X Face	2	.089	.027
Face X Unit	98	3.301	-----
Voice	1	376.925	174.448***
Expectation X Voice	2	.654	.303
Voice X Unit	98	2.161	-----
Script	1	3060.254	330.535***
Expectation X Script	2	1.924	.208
Script X Unit	98	9.258	-----
Ethnicity X Face	1	1.817	1.607
Expectation X Ethnicity X Face	2	.915	.809
Ethnicity X Face X Unit	98	1.131	-----
Ethnicity X Voice	1	26.313	16.504
Expectation X Ethnicity X Voice	2	1.776	1.114
Ethnicity X Voice X Unit	98	1.594	-----
Face X Voice	1	3.197	2.310
Expectation X Face X Voice	2	2.058	1.487
Face X Voice X Unit	98	1.384	-----
Ethnicity X Script	1	36.679	34.882***
Expectation X Ethnicity X Script	2	1.491	1.418
Ethnicity X Script X Unit	98	1.051	-----
Face X Script	1	258.035	137.880***
Expectation X Face X Script	2	1.314	.702
Face X Script X Unit	98	1.871	-----

Table 14 (continued)

Source	df	ms	F
Voice X Script	1	64.961	38.931***
Expectation X Voice X Script	2	3.804	2.280
Voice X Script X Unit	98	1.669	-----
Ethnicity X Face X Voice	1	28.632	25.576***
Expectation X Ethnicity X Voice	2	.236	.211
Ethnicity X Face X Voice X Unit	98	1.119	-----
Ethnicity X Face X Script	1	19.285	8.540**
Expectation X Ethnicity X Face X Script	2	2.513	1.113
Ethnicity X Face X Script X Unit	98	2.258	-----
Ethnicity X Voice X Script	1	.019	.011
Expectation X Ethnicity X Voice X Script	2	1.154	.650
Ethnicity X Voice X Script X Unit	98	1.777	-----
Face X Voice X Script	1	.823	.396
Expectation X Face X Voice X Script	2	1.322	.635
Face X Voice X Script X Unit	98	2.081	-----
Ethnicity X Face X Voice X Script	1	.076	.081
Expectation X Ethnicity X Face X Voice X Script	2	.137	.135
Ethnicity X Face X Voice X Script X Unit	98	.943	-----
Total	1615	5.959	

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

Table 15

Analysis of Variance on Certainty Scale --

Groups 2, 3, and 4

Source	df	ms	F
Expectation	2	.329	.038
Expectation X Unit	98	8.699	-----
Ethnicity	1	.404	1.010
Expectation X Ethnicity	2	1.250	3.124*
Ethnicity X Unit	98	.400	-----
Face	1	.007	.015
Expectation X Face	2	.616	1.212
Face X Unit	98	.508	-----
Voice	1	.000	very small
Expectation X Voice	2	.818	1.244
Voice X Unit	98	.658	-----
Script	1	31.640	20.220***
Expectation X Script	2	.864	.552
Script X Unit	98	1.565	-----
Ethnicity X Face	1	1.068	1.929
Expectation X Ethnicity X Face	2	.348	.629
Ethnicity X Face X Unit	98	.554	-----
Ethnicity X Voice	1	.127	.247
Expectation X Ethnicity X Voice	2	.505	.985
Ethnicity X Voice X Unit	98	.512	-----
Face X Voice	1	14.643	29.841***
Expectation X Face X Voice	2	1.517	3.091*
Face X Voice X Unit	98	.491	-----
Ethnicity X Script	1	.766	2.283
Expectation X Ethnicity X Script	2	1.183	3.528*
Ethnicity X Script X Unit	98	.335	-----
Face X Script	1	53.924	62.211***
Expectation X Face X Script	2	.840	.969
Face X Script X Unit	98	.867	-----

Table 15 (continued)

Source	df	ms	F
Voice X Script	1	2.937	6.301*
Expectation X Voice X Script	2	.252	.540
Voice X Script X Unit	98	.466	-----
Ethnicity X Face X Voice	1	.254	.491
Expectation X Ethnicity X Face X Voice	2	.320	.618
Ethnicity X Face X Voice X Unit	98	.510	-----
Ethnicity X Voice X Script	1	1.417	3.693
Expectation X Ethnicity X Voice X Script	2	.057	.148
Ethnicity X Voice X Script X Unit	98	.384	-----
Face X Voice X Script	1	.019	.054
Expectation X Face X Voice X Script	2	.106	.306
Face X Voice X Script X Unit	98	.345	-----
Ethnicity X Face X Voice X Script	1	.337	.647
Expectation X Ethnicity X Face X Voice X Script	2	.432	.828
Ethnicity X Face X Voice X Script X Unit	98	.522	-----
Total	1615	1.132	

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

Table 16

Analysis of Variance on Other's Contribution Scale--

Groups 2, 3, and 4

Source	df	ms	F
Expectation	2	37.196	3.310*
Expectation X Unit	98	11.237	-----
Ethnicity	1	1.530	.239
Expectation X Ethnicity	2	11.149	1.744
Ethnicity X Unit	98	6.394	-----
Face	1	193.896	25.326***
Expectation X Face	2	13.172	1.720
Face X Unit	98	7.656	-----
Voice	1	1.508	.215
Expectation X Voice	2	10.045	1.431
Voice X Unit	98	8.870	-----
Script	1	283.550	31.966***
Expectation X Script	2	10.708	1.207
Script X Unit	98	8.870	-----
Ethnicity X Face	1	5.159	.772
Expectation X Ethnicity X Face	2	8.305	1.242
Ethnicity X Face X Unit	98	6.684	-----
Ethnicity X Voice	1	.692	.103
Expectation X Ethnicity X Voice	2	11.242	1.672
Ethnicity X Voice X Unit	98	6.725	-----
Face X Voice	1	.136	.019
Expectation X Face X Voice	2	10.290	1.466
Face X Voice X Unit	98	7.020	-----
Ethnicity X Script	1	.647	.099
Expectation X Ethnicity X Script	2	6.040	.925
Ethnicity X Script X Unit	98	6.531	-----

Table 16 (continued)

Source	df	ms	F
Face X Script	1	156.412	20.279***
Expectation X Face X Script	2	13.936	1.807
Face X Script X Unit	98	7.713	-----
Voice X Script	1	4.355	.631
Expectation X Voice X Script	2	13.397	1.942
Voice X Script X Unit	98	6.897	-----
Ethnicity X Face X Voice	1	.868	.129
Expectation X Ethnicity X Face X Voice	2	11.092	1.650
Ethnicity X Face X Voice X Unit	98	6.619	-----
Ethnicity X Voice X Script	1	5.446	.835
Expectation X Ethnicity X Voice X Script	2	8.476	1.299
Ethnicity X Voice X Script X Unit	98	6.523	-----
Face X Voice X Script	1	.408	.061
Expectation X Face X Voice X Script	2	8.752	1.312
Face X Voice X Script X Unit	98	6.673	-----
Ethnicity X Face X Voice X Script	1	2.032	.315
Expectation X Ethnicity X Face X Voice X Script	2	8.018	1.245
Ethnicity X Face X Voice X Script X Unit	98	6.441	-----
Total	1615	7.671	

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

Table 17

Analysis of Variance on Self Contribution Scale--

Groups 2, 3, and 4

Source	df	ms	F
Expectation	2	7.631	1.805
Expectation X Unit	98	4.227	-----
Ethnicity	1	2.790	7.596**
Expectation X Ethnicity	2	.508	1.382
Ethnicity X Unit	98	.367	-----
Face	1	91.939	63.470***
Expectation X Face	2	5.106	3.525*
Face X Unit	98	.552	-----
Voice	1	13.948	25.258***
Expectation X Voice	2	2.572	4.658*
Voice X Unit	98	.552	-----
Script	1	147.872	61.611***
Expectation X Script	2	6.189	2.579
Script X Unit	98	2.400	-----
Ethnicity X Face	1	.943	2.867
Expectation X Ethnicity X Face	2	.113	.344
Ethnicity X Face X Unit	98	.256	-----
Face X Voice	1	6.604	11.258**
Expectation X Face X Voice	2	.086	.146
Face X Voice X Unit	98	.587	-----
Ethnicity X Script	1	3.849	9.458**
Expectation X Ethnicity X Script	2	.024	.059
Ethnicity X Script X Unit	98	.407	-----
Face X Script	1	78.706	44.625***
Expectation X Face X Script	2	3.423	1.941
Face X Script X Unit	98	1.764	-----

Table 17 (continued)

Source	df	ms	F
Voice X Script	1	16.081	24.606***
Expectation X Voice X Script	2	3.021	4.622*
Voice X Script X Unit	98	.654	-----
Ethnicity X Face X Voice	1	1.854	4.200*
Expectation X Ethnicity X Face X Voice	2	.632	1.432
Ethnicity X Face X Voice X Unit	98	.441	-----
Ethnicity X Face X Script	1	.339	1.156
Expectation X Ethnicity X Face X Script	2	.469	1.596
Ethnicity X Face X Script X Unit	98	.294	-----
Ethnicity X Voice X Script	1	1.403	3.573
Expectation X Ethnicity X Voice X Script	2	.261	.665
Ethnicity X Voice X Script X Unit	98	.393	-----
Face X Voice X Script	1	2.890	8.418**
Expectation X Face X Voice X Script	2	.183	.534
Face X Voice X Script X Unit	98	.343	-----
Ethnicity X Face X Voice X Script	1	3.380	9.932**
Expectation X Ethnicity X Face X Voice X Script	2	.590	1.733
Ethnicity X Face X Voice X Script X Unit	98	.340	-----
Total	1615	1.170	

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

Table 18

Means for Expectation X Ethnicity on Impression, Certainty, Other's Contribution and Self Contribution Scales-- Groups 2, 3, and 4

	Ethnicity		Row
	White	Hispanic	Marginals
Expectation			
None			
Impression	6.095	6.228	6.161
Certainty	2.028	2.105	2.067
Other's Cont.	.576	.972	.774
Self Cont.	.517	.505	.511
+			
Impression	6.406	6.365	6.386
Certainty	2.146	2.084	2.115
Other's Cont.	.926	.820	.873
Self Cont.	.722	.603	.662
-			
Impression	5.869	6.186	6.027
Certainty	2.154	2.045	2.100
Other's Cont.	.427	.322	.375
Self Cont.	.486	.367	.427
Column Marginals			
Impression	6.123	6.259	6.191
Certainty	2.110	2.078	2.094
Other's Cont.	.643	.705	.674
Self Cont.	.575	.492	.533

Table 19

Means for Expectation X Face on Impression, Certainty, Other's Contribution and Self Contribution Scales -- Groups 2, 3, and 4

	Face +	Face -	Row Marginals
Expectation			
None			
Impression	5.097	7.226	6.161
Certainty	2.101	2.032	2.067
Other's Cont.	1.231	.317	.774
Self Cont.	.706	.316	.511
+			
Impression	5.296	7.475	2.115
Certainty	2.082	2.148	2.115
Other's Cont.	1.291	.455	.873
Self Cont.	1.014	.316	.662
Column Marginals			
Impression	5.113	7.270	6.191
Certainty	2.092	2.096	2.094
Other's Cont.	1.022	.326	.674
Self Cont.	.773	.294	.533

Table 20

Means for Expectation X Voice on Impression, Certainty, Other's Contribution and Self Contribution Scales -- Groups 2, 3, and 4

	Voice +	Voice -	Row Marginals
Expectation			
None			
Impression	5.661	6.661	6.161
Certainty	2.107	2.026	2.067
Other's Cont.	.668	.880	.774
Self Cont.	.592	.430	.511
+			
Impression	5.941	6.831	6.386
Certainty	2.077	2.153	2.115
Other's Cont.	1.041	.705	.873
Self Cont.	.830	.494	.662
-			
Impression	5.518	6.537	6.027
Certainty	2.098	2.102	2.100
Other's Cont.	.404	.345	.375
Self Cont.	.458	.396	.427
Column Marginals			
Impression	5.707	6.676	6.191
Certainty	2.094	2.094	2.094
Other's Cont.	.705	.643	.674
Self Cont.	.627	.440	.533

Table 21

Means for Expectation X Script on Impression, Certainty, Other's Contribution and Self Contribution Scales--- Groups 2, 3, and 4

	Script +	Script -	Row Marginals
Expectation			
None			
Impression	4.712	7.611	6.161
Certainty	1.889	2.244	2.067
Other's Cont.	1.287	.261	.774
Self Cont.	.753	.269	.511
+			
Impression	5.026	7.745	6.386
Certainty	1.969	2.262	2.115
Other's Cont.	1.364	.382	.873
Self Cont.	1.090	.234	.662
-			
Impression	4.691	7.363	6.027
Certainty	2.002	2.197	.375
Other's Cont.	.632	.117	.375
Self Cont.	.668	.186	.427
Column Marginals			
Impression	4.810	7.573	6.191
Certainty	1.953	2.234	2.094
Other's Cont.	1.094	.253	.674
Self Cont.	.837	.230	.533

Table 22

Means for Ethnicity X Face on Impression, Certainty, Other's Contribution and Self Contribution Scales--Groups 2, 3, and 4

	Face +	Face -	Row Marginals
Ethnicity			
White			
Impression	5.078	7.168	6.123
Certainty	2.133	2.086	2.110
Other's Cont.	.934	.352	.643
Self Cont.	.839	.311	.575
Hispanic			
Impression	5.147	7.372	6.259
Certainty	2.050	2.106	2.078
Other's Cont.	1.109	.300	.705
Self Cont.	.707	.276	.492
Column Marginals			
Impression	5.113	7.270	6.191
Certainty	2.092	2.096	2.094
Other's Cont.	1.022	.326	.674
Self Cont.	.773	.294	.533

Table 23

Means for Ethnicity X Voice on Impression, Certainty, Other's Contribution and Self Contribution Scales--Groups 2, 3, and 4

	Voice +	Voice -	Row Marginals
Ethnicity			
White			
Impression	5.767	6.480	6.123
Certainty	2.101	2.118	2.110
Other's Cont.	.694	.592	.643
Self Cont.	.618	.533	.575
Hispanic			
Impression	5.646	6.873	6.259
Certainty	2.087	2.069	2.078
Other's Cont.	.715	.695	.705
Self Cont.	.636	.348	.492
Column Marginals			
Impression	5.707	6.676	6.191
Certainty	2.094	2.094	2.094
Other's Cont.	.705	.643	.674
Self Cont.	.627	.440	.533

Table 24

Means for Face X Voice on Impression, Certainty, Other's Contribution and Self Contribution Scales -- Groups 2, 3, and 4

	Voice +	Voice -	Row Marginals
Face			
+			
Impression	4.672	5.553	5.113
Certainty	1.996	2.187	2.092
Other's Cont.	1.061	.982	1.022
Self Cont.	.930	.615	.773
-			
Impression	6.741	7.800	7.270
Certainty	2.192	2.000	2.096
Other's Cont.	.348	.305	.326
Self Cont.	.323	.265	.294
Column Marginals			
Impression	5.707	6.676	6.191
Certainty	2.094	2.094	2.094
Other's Cont.	.705	.643	.674
Self Cont.	.627	.440	.533

Table 25

Means for Ethnicity X Script on Impression, Certainty, Other's Contribution and Self Contribution Scales--Groups 2, 3, and 4

	Script +	Script -	Row Marginals
Ethnicity			
White			
Impression	4.590	7.656	6.123
Certainty	1.947	2.272	2.110
Other's Cont.	1.043	.242	.643
Self Cont.	.928	.222	.575
Hispanic			
Impression	5.029	7.490	6.259
Certainty	1.959	2.197	2.078
Other's Cont.	1.145	.264	.705
Self Cont.	.746	.237	.492
Column Marginals			
Impression	4.810	7.573	6.191
Certainty	1.953	2.234	2.094
Other's Cont.	1.094	.253	.674
Self Cont.	.837	.230	.533

Table 26

Means for Face X Script on Impression, Certainty, Other's Contribution and Self Contribution Scales--Groups 2, 3, and 4

	Script +	Script -	Row Marginals
Face			
+			
Impression	3.330	6.896	5.113
Certainty	1.768	2.416	2.092
Other's Cont.	1.755	.289	1.022
Self Cont.	1.298	.248	.773
-			
Impression	6.290	8.251	7.270
Certainty	2.139	2.053	2.096
Other's Cont.	.434	.218	.326
Self Cont.	.376	.312	.294
Column Marginals			
Impression	4.810	7.573	6.191
Certainty	1.953	2.234	2.094
Other's Cont.	1.094	.253	.674
Self Cont.	.837	.230	.533

Table 27

Means for Voice X Script on Impression, Certainty, Other's Contribution and Self Contribution Scales -- Groups 2, 3, and 4

	Script +	Script -	Row Marginals
Voice			
+			
Impression	4.124	7.289	5.707
Certainty	1.911	2.277	2.094
Other's Cont.	1.177	.232	.705
Self Cont.	1.031	.223	.627
-			
Impression	5.496	7.857	6.676
Certainty	1.996	2.191	2.094
Other's Cont.	1.012	.275	.643
Self Cont.	.644	.237	.440
Column Marginals			
Impression	4.810	7.573	6.191
Certainty	1.953	2.234	2.094
Other's Cont.	1.094	.253	.674
Self Cont.	.837	.230	.533

Table 28

Means for Expectation X Ethnicity X Face on Impression, Certainty, Other's Contribution and Self Contribution Scales--Groups 2, 3, and 4

	+ Face	
	Ethnicity	
	White	Hispanic
Expectation		
None		
Impression	5.085	5.109
Certainty	2.093	2.109
Other's Cont.	.834	1.629
Self Cont.	.734	.678
+		
Impression	5.303	5.289
Certainty	2.112	2.053
Other's Cont.	1.373	1.209
Self Cont.	1.113	.915
-		
Impression	4.848	5.043
Certainty	2.195	1.988
Other's Cont.	.595	.490
Self Cont.	.669	.528

Table 28 (continued)

- Face

	Ethnicity	
	White	Hispanic
Expectation		
None		
Impression	7.105	7.347
Certainty	1.964	2.101
Other's Cont.	.319	.315
Self Cont.	.300	.332
+		
Impression	7.510	7.441
Certainty	2.181	2.115
Other's Cont.	.478	.432
Self Cont.	.331	.291
-		
Impression	6.891	7.328
Certainty	2.113	2.102
Other's Cont.	.259	.155
Self Cont.	.303	.206

Table 29

Means for Expectation X Ethnicity X Voice on Impression, Certainty, Other's Contribution and Self Contribution Scales -- Groups 2, 3, and 4

+ Voice

	Ethnicity	
	White	Hispanic
Expectation		
None		
Impression	5.673	5.649
Certainty	2.024	2.190
Other's Cont.	.652	.684
Self Cont.	.569	.615
+		
Impression	6.076	5.806
Certainty	2.118	2.036
Other's Cont.	.995	1.087
Self Cont.	.805	.856
-		
Impression	5.551	5.484
Certainty	2.160	2.035
Other's Cont.	.436	.373
Self Cont.	.479	.436

Table 29 (continued)

	- Voice	
	Ethnicity	
	White	Hispanic
Expectation		
None		
Impression	6.516	6.808
Certainty	2.032	2.020
Other's Cont.	.500	1.260
Self Cont.	.465	.396
+		
Impression	6.737	6.924
Certainty	2.174	2.132
Other's Cont.	.856	.553
Self Cont.	.640	.349
-		
Impression	6.188	6.887
Certainty	2.148	2.055
Other's Cont.	.418	.272
Self Cont.	.493	.298

Table 30

Means for Expectation X Face X Voice on Impression, Certainty, Other's Contribution and Self Contribution Scales-- Groups 2, 3, and 4

	+ Voice	
	Face	
	+	-
Expectation		
None		
Impression	4.690	6.633
Certainty	2.085	2.129
Other's Cont.	.982	.354
Self Cont.	.847	.337
+		
Impression	4.918	6.964
Certainty	1.970	2.184
Other's Cont.	1.587	.495
Self Cont.	1.260	.401
-		
Impression	4.410	6.625
Certainty	1.934	2.262
Other's Cont.	.615	.194
Self Cont.	.683	.232

Table 30 (continued)

	- Voice	
	Face	
	+	-
Expectation		
None		
Impression	5.504	7.819
Certainty	2.117	1.935
Other's Cont.	1.481	.279
Self Cont.	.565	.296
+		
Impression	5.674	7.987
Certainty	2.194	2.112
Other's Cont.	.994	.415
Self Cont.	.768	.221
-		
Impression	5.480	7.594
Certainty	2.250	1.953
Other's Cont.	.470	.220
Self Cont.	.514	.277

Table 31

Means for Expectation X Ethnicity X Script on Impression, Certainty, Other's Contribution and Self Contribution Scales --Groups 2, 3, and 4

+ Script	Ethnicity	
	White	Hispanic
Expectation		
None		
Impression	4.496	4.927
Certainty	1.855	1.923
Other's Cont.	.947	1.627
Self Cont.	.813	.694
+		
Impression	4.947	5.105
Certainty	2.007	1.931
Other's Cont.	1.449	1.279
Self Cont.	1.191	.989
-		
Impression	4.328	5.055
Certainty	1.980	2.023
Other's Cont.	.734	.530
Self Cont.	.779	.556

Table 31 (continued)

	- Script	
	Ethnicity	
	White	Hispanic
Expectation		
None		
Impression	7.694	7.528
Certainty	2.202	2.286
Other's Cont.	.206	.316
Self Cont.	.222	.316
+		
Impression	7.865	7.625
Certainty	2.286	2.237
Other's Cont.	.402	.361
Self Cont.	.253	.216
-		
Impression	7.410	7.316
Certainty	2.328	2.066
Other's Cont.	.119	.115
Self Cont.	.193	.178

Table 32

Means for Expectation X Face X Script on Impression, Certainty, Other's Contribution and Self Contribution Scales -- Groups 2, 3, and 4

	+ Script	
	Face	
	+	-
Expectation		
None		
Impression	3.202	6.222
Certainty	1.702	2.077
Other's Cont.	2.200	.373
Self Cont.	1.169	.338
+		
Impression	3.526	6.526
Certainty	1.750	2.187
Other's Cont.	2.126	.603
Self Cont.	1.744	.437
-		
Impression	3.262	6.121
Certainty	1.852	2.152
Other's Cont.	.938	.327
Self Cont.	.981	.354

Table 32 (continued)

	- Script	
	Face	
	+	-
Expectation		
None		
Impression	6.992	8.230
Certainty	2.500	1.988
Other's Cont.	.263	.260
Self Cont.	.243	.295
+		
Impression	7.066	8.424
Certainty	2.414	2.109
Other's Cont.	.456	.307
Self Cont.	.284	.185
-		
Impression	6.629	8.098
Certainty	2.332	2.063
Other's Cont.	.147	.087
Self Cont.	.215	.156

Table 33

Means for Expectation X Voice X Script on Impression, Certainty, Other's Contribution and Self Contribution Scales— Groups 2, 3, and 4

	+ Script	
	Voice	
	+	-
Expectation		
None		
Impression	4.065	5.359
Certainty	1.883	1.895
Other's Cont.	1.090	1.484
Self Cont.	.935	.572
+		
Impression	4.283	5.770
Certainty	1.868	2.069
Other's Cont.	1.755	.974
Self Cont.	1.434	.747
-		
Impression	4.023	5.359
Certainty	1.980	2.023
Other's Cont.	.687	.577
Self Cont.	.723	.612

Table 33 (continued)

	- Script	
	Voice	
	+	-
Expectation		
None		
Impression	7.258	7.964
Certainty	2.331	2.157
Other's Cont.	.246	.276
Self Cont.	.249	.289
+		
Impression	7.599	7.891
Certainty	2.286	2.237
Other's Cont.	.328	.436
Self Cont.	.227	.242
-		
Impression	7.012	7.715
Certainty	2.215	2.180
Other's Cont.	.122	.112
Self Cont.	.192	.179

Table 34

Means for Ethnicity X Face X Voice on Impression, Certainty, Other's Contribution and Self Contribution Scales -- Groups 2, 3, and 4

	+ Voice	
	Face	
	+	-
Ethnicity		
White		
Impression	4.900	6.633
Certainty	2.042	2.160
Other's Cont.	1.018	.371
Self Cont.	.912	.324
Hispanic		
Impression	4.445	6.848
Certainty	1.951	2.223
Other's Cont.	1.105	.324
Self Cont.	.949	.322

	- Voice	
	Face	
	+	-
Ethnicity		
White		
Impression	5.257	7.704
Certainty	2.225	2.012
Other's Cont.	.850	.333
Self Cont.	.766	.299
Hispanic		
Impression	5.849	7.896
Certainty	2.149	1.989
Other's Cont.	1.113	.276
Self Cont.	.465	.231

Table 35

Means for Ethnicity X Face X Script on Impression, Certainty, Other's Contribution and Self Contribution Scales-- Groups 2, 3, and 4

	+ Script	
	Face	
	+	-
Ethnicity		
White		
Impression	3.254	5.927
Certainty	1.745	2.150
Other's Cont.	1.589	.498
Self Cont.	1.428	.428
Hispanic		
Impression	3.406	6.652
Certainty	1.791	2.128
Other's Cont.	1.921	.370
Self Cont.	1.169	.324

	- Script	
	Face	
	+	-
Ethnicity		
White		
Impression	6.903	8.410
Certainty	2.522	2.022
Other's Cont.	.279	.205
Self Cont.	.250	.195
Hispanic		
Impression	6.888	8.091
Certainty	2.309	2.084
Other's Cont.	.298	.230
Self Cont.	.245	.229

Table 36

Means for Ethnicity X Voice X Script on Impression, Certainty, Other's Contribution and Self Contribution Scales-- Groups 2, 3, and 4

	+ Script	
	Voice	
	+	-
Ethnicity		
White		
Impression	4.029	5.152
Certainty	1.926	1.969
Other's Cont.	1.205	.882
Self Cont.	1.041	.815
Hispanic		
Impression	4.218	5.840
Certainty	1.896	2.023
Other's Cont.	1.149	1.149
Self Cont.	1.020	.473

	- Script	
	Voice	
	+	-
Ethnicity		
White		
Impression	7.504	7.808
Certainty	2.276	2.268
Other's Cont.	.184	.301
Self Cont.	.194	.250
Hispanic		
Impression	7.075	7.905
Certainty	2.278	2.115
Other's	.280	.248
Self	.251	.223

Table 37

Means for Face X Voice X Script on Impression, Certainty, Other's Contribution and Self Contribution Scales -- Groups 2, 3, and 4

		+ Script	
		Voice	
		+	-
Face			
+			
	Impression	2.666	3.994
	Certainty	1.626	1.909
	Other's Cont.	1.831	1.679
	Self Cont.	1.598	.998
-			
	Impression	5.582	6.998
	Certainty	2.195	2.082
	Other's Cont.	.524	.345
	Self Cont.	.463	.289

		- Script	
		Voice	
		+	-
Face			
+			
	Impression	6.679	7.112
	Certainty	2.366	2.465
	Other's Cont.	.292	.285
	Self Cont.	.262	.233
-			
	Impression	7.900	8.602
	Certainty	2.188	1.918
	Other's Cont.	.171	.264
	Self Cont.	.183	.240

Table 38

Means for Expectation X Ethnicity X Face X Voice on Impression, Certainty, Other's Contribution and Self Contribution Scales --Groups 2, 3, and 4

	+ Face, + Voice	
	Ethnicity	
	White	Hispanic
Expectation		
None		
Impression	4.911	4.468
Certainty	2.073	2.097
Other's Cont.	.949	1.016
Self Cont.	.820	.875
+		
Impression	5.171	4.664
Certainty	2.013	1.928
Other's Cont.	1.471	1.704
Self Cont.	1.203	1.318
-		
Impression	4.617	4.203
Certainty	2.039	1.828
Other's Cont.	.634	.595
Self Cont.	.712	.654

Table 38 (continued 1)

	+ Face, - Voice	
	Ethnicity	
	White	Hispanic
Expectation		
None		
Impression	5.258	5.750
Certainty	2.113	2.121
Other's Cont.	.719	2.242
Self Cont.	.649	.481
+		
Impression	5.434	5.914
Certainty	2.211	2.178
Other's Cont.	1.275	.714
Self Cont.	1.024	.511
-		
Impression	5.078	5.883
Certainty	2.352	2.148
Other's Cont.	.556	.385
Self Cont.	.626	.402

	- Face, + Voice	
	Ethnicity	
	White	Hispanic
Expectation		
None		
Impression	6.435	6.831
Certainty	1.976	2.282
Other's Cont.	.356	.351
Self Cont.	.319	.354
+		
Impression	6.980	6.947
Certainty	2.224	2.145
Other's Cont.	.519	.471
Self Cont.	.406	.395
-		
Impression	6.484	6.766
Certainty	2.281	2.242
Other's Cont.	.237	.150
Self Cont.	.246	.218

Table 38 (continued 2)

	- Face, - Voice	
	Ethnicity	
	White	Hispanic
Expectation		
None		
Impression	7.774	7.863
Certainty	1.952	1.919
Other's Cont.	.281	.278
Self Cont.	.282	.310
+		
Impression	8.039	7.934
Certainty	2.138	2.086
Other's Cont.	.438	.392
Self Cont.	.255	.187
-		
Impression	7.297	7.891
Certainty	1.945	1.961
Other's Cont.	.280	.159
Self Cont.	.360	.195

Table 39

Means for Expectation X Ethnicity X Face X Script on Impression, Certainty, Other's Contribution and Self Contribution Scales-- Groups 2, 3, and 4

	+ Face, + Script	
	Ethnicity	
	White	Hispanic
Expectation		
None		
Impression	3.218	3.185
Certainty	1.677	1.726
Other's Cont.	1.440	2.960
Self Cont.	1.232	1.106
+		
Impression	3.474	3.579
Certainty	1.737	1.763
Other's Cont.	2.281	1.971
Self Cont.	1.923	1.565
-		
Impression	3.070	3.453
Certainty	1.820	1.883
Other's Cont.	1.044	.831
Self Cont.	1.128	.835

Table 39 (continued 1)

	+ Face, - Script	
	Ethnicity	
	White	Hispanic
Expectation		
None		
Impression	6.952	7.032
Certainty	2.508	2.492
Other's Cont.	.228	.298
Self Cont.	.237	.250
+		
Impression	7.132	7.000
Certainty	2.487	2.342
Other's Cont.	.465	.447
Self Cont.	.304	.264
-		
Impression	6.625	6.633
Certainty	2.570	2.094
Other's Cont.	.146	.149
Self Cont.	.210	.221

	- Face, + Script	
	Ethnicity	
	White	Hispanic
Expectation		
None		
Impression	5.774	6.669
Certainty	2.032	2.121
Other's Cont.	.453	.294
Self Cont.	.394	.281
+		
Impression	6.421	6.632
Certainty	2.276	2.099
Other's Cont.	.617	.588
Self Cont.	.460	.414
-		
Impression	5.586	6.656
Certainty	2.141	2.164
Other's Cont.	.425	.229
Self Cont.	.430	.277

Table 39 (continued 2)

	- Face, - Script	
	Ethnicity	
	White	Hispanic
Expectation		
None		
Impression	8.435	8.024
Certainty	1.895	2.081
Other's Cont.	.184	.335
Self Cont.	.207	.383
+		
Impression	8.599	8.250
Certainty	2.086	2.132
Other's Cont.	.340	.275
Self Cont.	.202	.168
-		
Impression	8.195	8.000
Certainty	2.086	2.039
Other's Cont.	.093	.080
Self Cont.	.176	.135

Table 40

Means for Expectation X Ethnicity X Voice X Script on Impression, Certainty, Other's Contribution and Self Contribution Scales-- Groups 2, 3, and 4

	+ Voice, + Script	
	Ethnicity	
	White	Hispanic
Expectation		
None		
Impression	3.871	4.258
Certainty	1.823	1.944
Other's Cont.	1.135	1.044
Self Cont.	.935	.917
+		
Impression	4.349	4.217
Certainty	1.954	1.783
Other's Cont.	1.728	1.781
Self Cont.	1.394	1.473
-		
Impression	3.867	4.180
Certainty	2.000	1.961
Other's Cont.	.752	.622
Self Cont.	.776	.671

Table 40 (continued 1)

	+ Voice, - Script	
	Ethnicity	
	White	Hispanic
Expectation		
None		
Impression	7.476	7.040
Certainty	2.226	2.435
Other's Cont.	.169	.323
Self Cont.	.186	.313
+		
Impression	7.803	7.395
Certainty	2.283	2.289
Other's Cont.	.262	.393
Self Cont.	.215	.240
-		
Impression	7.234	6.789
Certainty	2.320	2.109
Other's Cont.	.119	.124
Self Cont.	.182	.201

	- Voice, + Script	
	Ethnicity	
	White	Hispanic
Expectation		
None		
Impression	5.121	5.597
Certainty	1.887	1.903
Other's Cont.	.758	2.210
Self Cont.	.674	.471
+		
Impression	5.546	5.993
Certainty	2.059	2.079
Other's Cont.	1.170	.777
Self Cont.	.988	.506
-		
Impression	4.789	5.930
Certainty	1.961	2.086
Other's Cont.	.717	.438
Self Cont.	.782	.441

Table 40 (continued 2)

	- Voice, - Script	
	Ethnicity	
	White	Hispanic
Expectation		
None		
Impression	7.911	8.016
Certainty	2.177	2.137
Other's Cont.	.243	.310
Self Cont.	.257	.320
+		
Impression	7.928	7.855
Certainty	2.289	2.184
Other's Cont.	.542	.329
Self Cont.	.291	.192
-		
Impression	7.586	7.844
Certainty	2.336	2.023
Other's Cont.	.119	.105
Self Cont.	.204	.155

Table 41

Means for Expectation X Face X Voice X Script on Impression, Certainty, Other's Contribution and Self Contribution Scales-- Groups 2, 3, and 4

	+ Voice, + Script	
	Face	
	+	-
Expectation		
None		
Impression	2.669	5.460
Certainty	1.621	2.145
Other's Cont.	1.697	.483
Self Cont.	1.438	.432
+		
Impression	2.836	5.730
Certainty	1.586	2.151
Other's Cont.	2.715	.794
Self Cont.	2.229	.639
-		
Impression	2.492	5.555
Certainty	1.672	2.289
Other's Cont.	1.079	.295
Self Cont.	1.129	.318

Table 41 (continued 1)

	Face +	Face -
+ Voice, - Script		
Expectation		
None		
Impression	6.710	7.806
Certainty	2.548	2.113
Other's Cont.	.268	.225
Self Cont.	.257	.241
+		
Impression	7.000	8.197
Certainty	2.355	2.217
Other's Cont.	.459	.196
Self Cont.	.292	.162
-		
Impression	6.328	7.695
Certainty	2.195	2.234
Other's Cont.	.150	.093
Self Cont.	.238	.146
- Voice, + Script		
Expectation		
None		
Impression	3.734	6.984
Certainty	1.782	2.008
Other's Cont.	2.703	.264
Self Cont.	.900	.244
+		
Impression	4.217	7.322
Certainty	1.914	2.224
Other's Cont.	1.537	.411
Self Cont.	1.260	.235
-		
Impression	4.031	6.688
Certainty	2.031	2.016
Other's Cont.	.796	.359
Self Cont.	.834	.389

Table 41 (continued 2)

	- Voice, - Script	
	Face	
	+	-
Expectation		
None		
Impression	2.274	8.653
Certainty	2.452	1.863
Other's Cont.	.258	.294
Self Cont.	.229	.348
+		
Impression	7.132	8.651
Certainty	2.474	2.000
Other's Cont.	.452	.419
Self Cont.	.276	.207
-		
Impression	6.930	8.500
Certainty	2.469	1.891
Other's Cont.	.145	.081
Self Cont.	.193	.166

Table 42

Means for Ethnicity X Face X Voice X Script on Impression, Certainty, Other's Contribution and Self Contribution Scales-- Groups 2, 3, and 4

	+ Voice, + Script	
	Face	
	+	-
Ethnicity		
White		
Impression	2.855	5.203
Certainty	1.651	2.200
Other's Cont.	1.802	.608
Self Cont.	1.568	.514
Hispanic		
Impression	2.476	5.960
Certainty	1.601	2.191
Other's Cont.	1.859	.440
Self Cont.	1.629	.411

	+ Voice, - Script	
	Face	
	+	-
Ethnicity		
White		
Impression	6.945	8.064
Certainty	2.432	2.121
Other's Cont.	.233	.134
Self Cont.	.256	.133
Hispanic		
Impression	6.414	7.736
Certainty	2.301	2.256
Other's Cont.	.351	.209
Self Cont.	.269	.233

Table 42 (continued)

	- Voice, + Script	
	Face	
	+	-
Ethnicity		
White		
Impression	3.653	6.651
Certainty	1.839	2.100
Other's Cont.	1.375	.389
Self Cont.	1.288	.342
Hispanic		
Impression	4.335	7.345
Certainty	1.980	2.065
Other's Cont.	1.982	.301
Self Cont.	.708	.237

	- Voice, - Script	
	Face	
	+	-
Ethnicity		
White		
Impression	6.861	8.756
Certainty	2.611	1.924
Other's Cont.	.326	.277
Self Cont.	.244	.256
Hispanic		
Impression	7.363	8.447
Certainty	2.318	1.912
Other's Cont.	.244	.252
Self Cont.	.221	.224

Table 43

Means for Expectation X Ethnicity X Face X Voice X Script on Impression, Certainty, Other's Contribution and Self Contribution Scales-- Groups 2, 3, and 4

	+ Face, + Voice, + Script	
	Ethnicity	
	White	Hispanic
Expectation		
None		
Impression	2.887	2.452
Certainty	1.645	1.597
Other's Cont.	1.680	1.714
Self Cont.	1.403	1.473
+		
Impression	3.053	2.618
Certainty	1.605	1.566
Other's Cont.	2.606	2.825
Self Cont.	2.112	2.345
-		
Impression	2.625	2.359
Certainty	1.703	1.641
Other's Cont.	1.122	1.037
Self Cont.	1.188	1.069

Table 43 (continued 1)

	+ Face, + Voice, - Script	
	Ethnicity	
	White	Hispanic
Expectation		
None		
Impression	6.935	6.484
Certainty	2.500	2.597
Other's Cont.	.217	.318
Self Cont.	.237	.278
+		
Impression	7.289	6.711
Certainty	2.421	2.289
Other's Cont.	.336	.583
Self Cont.	.294	.290
-		
Impression	6.609	6.047
Certainty	2.375	2.016
Other's Cont.	.147	.154
Self Cont.	.236	.240

	+ Face, - Voice, + Script	
	Ethnicity	
	+	-
Expectation		
None		
Impression	3.548	3.919
Certainty	1.710	1.855
Other's Cont.	1.201	4.205
Self Cont.	1.061	.739
+		
Impression	3.895	4.539
Certainty	1.868	1.961
Other's Cont.	1.957	1.116
Self Cont.	1.734	.785
-		
Impression	3.516	4.547
Certainty	1.938	2.125
Other's Cont.	.966	.626
Self Cont.	1.068	.601

Table 43 (continued 2)

	+ Face, - Voice, - Script	
	Ethnicity	
	White	Hispanic
Expectation		
None		
Impression	6.968	7.581
Certainty	2.516	2.387
Other's Cont.	.238	.278
Self Cont.	.236	.222
+		
Impression	6.974	7.289
Certainty	2.553	2.395
Other's Cont.	.593	.311
Self Cont.	.314	.238
-		
Impression	6.641	7.219
Certainty	2.766	2.172
Other's Cont.	.146	.144
Self Cont.	.183	.203

	- Face, + Voice, + Script	
	Ethnicity	
	White	Hispanic
Expectation		
None		
Impression	4.855	6.065
Certainty	2.000	2.290
Other's Cont.	.591	.375
Self Cont.	.503	.361
+		
Impression	5.645	5.816
Certainty	2.303	2.000
Other's Cont.	.851	.737
Self Cont.	.677	.601
-		
Impression	5.109	6.000
Certainty	2.297	2.281
Other's Cont.	.382	.207
Self Cont.	.363	.273

Table 43 (continued 3)

	Ethnicity	
	White	Hispanic
- Face, + Voice, - Script		
Expectation		
None		
Impression	8.016	7.597
Certainty	1.952	2.274
Other's Cont.	.121	.328
Self Cont.	.136	.347
+		
Impression	8.316	8.079
Certainty	2.145	2.289
Other's Cont.	.188	.204
Self Cont.	.136	.189
-		
Impression	7.859	7.531
Certainty	2.266	2.203
Other's Cont.	.092	.094
Self Cont.	.128	.163
- Face, - Voice, + Script		
	Ethnicity	
	White	Hispanic
Expectation		
None		
Impression	6.694	7.274
Certainty	2.065	1.952
Other's Cont.	.315	.214
Self Cont.	.286	.202
+		
Impression	7.197	7.447
Certainty	2.250	2.197
Other's Cont.	.384	.438
Self Cont.	.242	.227
-		
Impression	6.063	7.313
Certainty	1.984	2.047
Other's Cont.	.467	.251
Self Cont.	.497	.282

Table 43 (continued 4)

	- Face, - Voice, - Script	
	Ethnicity	
	White	Hispanic
Expectation		
None		
Impression	8.855	8.452
Certainty	1.839	1.887
Other's Cont.	.247	.342
Self Cont.	.277	.418
+		
Impression	8.822	8.421
Certainty	2.026	1.974
Other's Cont.	.492	.347
Self Cont.	.268	.147
-		
Impression	8.531	8.469
Certainty	1.906	1.875
Other's Cont.	.093	.067
Self Cont.	.224	.107

Table 44

Analysis of Variance on Impression Scale—

Black, Hispanic, and White Subjects

Source	df	ms	F
S's Ethnicity	2	4.786	.743
Unit	94	6.441	-----
Ethnicity	1	7.860	4.818*
S's Ethnicity X Ethnicity	2	1.396	.856
Ethnicity X Unit	94	1.631	-----
Face	1	1435.944	433.800***
S's Ethnicity X Face	2	11.769	3.555*
Face X Unit	94	3.310	-----
Voice	1	322.100	143.357***
S's Ethnicity X Voice	2	.025	.011
Voice X Unit	94	2.247	-----
Script	1	2464.463	252.321***
S's Ethnicity X Script	2	.461	.047
Script X Unit	94	9.767	-----
Ethnicity X Face	1	2.619	2.331
S's Ethnicity X Ethnicity X Face	2	1.216	1.082
Ethnicity X Face X Unit	94	1.123	-----
Ethnicity X Voice	1	19.824	12.545***
S's Ethnicity X Ethnicity X Voice	2	3.189	2.018
Ethnicity X Voice X Unit	94	1.580	-----
Face X Voice	1	3.623	2.418
S's Ethnicity X Face X Voice	2	.506	.338
Face X Voice X Unit	94	1.130	-----
Ethnicity X Script	1	30.651	27.127***
S's Ethnicity X Ethnicity X Script	2	.086	.076
Face X Script	1	208.605	106.526***
S's Ethnicity X Face X Script	2	.790	.403
Face X Script X Unit	94	1.958	-----

Table 44 (continued)

Source	df	ms	F
Voice X Script	1	53.308	30.434***
S's Ethnicity X Voice X Script	2	.154	.088
Voice X Script X Unit	94	1.752	-----
Ethnicity X Face X Voice	1	25.459	24.566***
S's Ethnicity X Ethnicity X Face X Voice	2	.188	.181
Ethnicity X Face X Voice X Unit	94	1.036	-----
Ethnicity X Face X Script	1	8.602	4.144*
S's Ethnicity X Ethnicity X Face X Script	2	4.245	2.045
Ethnicity X Face X Script X Unit	94	2.076	-----
Ethnicity X Voice X Script	1	.161	.092
S's Ethnicity X Ethnicity X Voice X Script	2	3.805	2.169
Ethnicity X Voice X Script X Unit	94	1.754	-----
Face X Voice X Script	1	1.378	.660
S's Ethnicity X Face X Voice X Script	2	1.206	.578
Face X Voice X Script X Unit	94	2.088	-----
Ethnicity X Face X Voice X Script	1	.913	.959
S's Ethnicity X Ethnicity X Face X Voice X Script	2	.402	.422
Ethnicity X Face X Voice X Script X Unit	94	.952	-----
Total	1551	5.446	

Note. Ethnicity refers to encoder's ethnicity.
Note. S's Ethnicity refers to subject's ethnicity.
*$p < .05$.
**$p < .01$.
***$p < .001$.

Table 45

Analysis of Variance on Certainty Scale—

Black, Hispanic, and White Subjects

Source	df	ms	F
S's Ethnicity	2	4.900	.624
Unit	94	7.859	-----
Ethnicity	1	.303	.705
S's Ethnicity X Ethnicity	2	.040	.092
Ethnicity X Unit	94	.544	-----
Face	1	.027	.050
S's Ethnicity X Face	2	.231	.425
Face X Unit	94	.544	-----
Voice	1	.238	.395
S's Ethnicity X Voice	2	.090	.150
Voice X Unit	94	.601	-----
Script	1	26.457	18.772***
S's Ethnicity X Script	2	4.479	3.178*
Script X Unit	94	1.409	-----
Ethnicity X Face	1	.611	1.173
S's Ethnicity X Ethnicity X Face	2	.164	.316
Ethnicity X Face X Unit	94	.552	-----
Face X Voice	1	6.291	12.146***
S's Ethnicity X Face X Voice	2	.374	.722
Face X Voice X Unit	94	.381	-----
Face X Script	1	38.085	51.186***
S's Ethnicity X Face X Script	2	1.255	1.687
Face X Script X Unit	94	.744	-----
Ethnicity X Script	1	.407	1.068
S's Ethnicity X Ethnicity X Script	2	.061	.159
Ethnicity X Script X Unit	94	.381	-----
Ethnicity X Voice	1	.234	.423
S's Ethnicity X Ethnicity X Voice	2	.094	.171
Ethnicity X Voice X Unit	94	.518	-----

Table 45 (continued)

Source	df	ms	F
Voice X Script	1	3.685	8.333**
S's Ethnicity X Voice X Script	2	.985	2.227
Voice X Script X Unit	94	.442	-----
Ethnicity X Face X Voice	1	.026	.054
S's Ethnicity X Ethnicity X Face X Voice	2	.336	.685
Ethnicity X Face X Voice X Unit	94	.490	-----
Ethnicity X Face X Script	1	1.874	3.975*
S's Ethnicity X Ethnicity X Face X Script	2	.208	.441
Ethnicity X Face X Script X Unit	94	.472	-----
Ethnicity X Voice X Script	1	1.699	4.680*
S's Ethnicity X Ethnicity X Voice X Script	2	.136	.376
Ethnicity X Voice X Script X Unit	94	.363	-----
Face X Voice X Script	1	.001	.002
S's Ethnicity X Face X Voice X Script	2	.062	.199
Face X Voice X Script X Unit	94	.550	-----
Ethnicity X Face X Voice X Script	1	.377	.686
S's Ethnicity X Ethnicity X Face X Voice X Script	2	.657	1.193
Ethnicity X Face X Voice X Script X Unit	94	.550	-----
Total	1551	1.051	

Note. Ethnicity refers to encoder's ethnicity.
Note. S's Ethnicity refers to subject's ethnicity.
*$p < .05$.
**$p < .01$.
***$p < .001$.

Table 46

Analysis of Variance on Other's Contribution Scale--Black, Hispanic, and White Subjects

Source	df	ms	F
S's Ethnicity	2	4.818	.409
Unit	94	11.778	-----
Ethnicity	1	3.620	.542
S's Ethnicity X Ethnicity	2	11.902	1.783
Ethnicity X Unit	94	6.674	-----
Face	1	161.540	19.688***
S's Ethnicity X Face	2	5.312	.647
Face X Unit	94	7.119	-----
Voice	1	.010	.001
S's Ethnicity X Voice	2	17.309	2.432
Voice X Unit	94	7.119	-----
Script	1	246.494	26.655***
S's Ethnicity X Script	2	7.445	.805
Script X Unit	94	9.248	-----
Ethnicity X Face	1	7.585	1.100
S's Ethnicity X Ethnicity X Face	2	12.462	1.807
Ethnicity X Face X Unit	94	6.897	-----
Ethnicity X Voice	1	3.241	.466
S's Ethnicity X Ethnicity X Voice	2	10.886	1.566
Ethnicity X Voice X Unit	94	6.950	-----
Face X Voice	1	2.050	.289
S's Ethnicity X Face X Voice	2	16.090	2.266
Face X Voice X Unit	94	7.102	-----
Ethnicity X Script	1	3.236	.487
S's Ethnicity X Ethnicity X Script	2	12.601	1.895
Ethnicity X Script X Unit	94	6.651	-----

Table 46 (continued)

Source	df	ms	F
Face X Script	1	122.597	14.976***
S's Ethnicity X Face X Script	2	7.234	.884
Face X Script X Unit	94	8.186	-----
Voice X Script	1	.041	.006
S's Ethnicity X Voice X Script	2	18.745	2.702
Voice X Script X Unit	94	6.938	-----
Ethnicity X Face X Voice	1	3.005	.431
S's Ethnicity X Ethnicity X Face X Voice	2	12.414	1.779
Ethnicity X Face X Voice X Unit	94	6.979	-----
Ethnicity X Face X Script	1	9.333	1.366
S's Ethnicity X Ethnicity X Face X Script	2	10.873	1.592
Ethnicity X Face X Script X Unit	94	6.830	-----
Ethnicity X Voice X Script	1	8.042	1.186
S's Ethnicity X Ethnicity X Voice X Script	2	7.017	1.035
Ethnicity X Voice X Script X Unit	94	6.782	-----
Face X Voice X Script	1	2.842	.417
S's Ethnicity X Face X Voice X Script	2	14.219	2.087
Face X Voice X Script X Unit	94	6.812	-----
Ethnicity X Face X Voice X Script	1	5.028	.758
S's Ethnicity X Ethnicity X Face X Voice X Script	2	9.503	1.433
Ethnicity X Face X Voice X Script X Unit	94	6.631	-----
Total	1551	7.863	

Note. Ethnicity refers to encoder's ethnicity.
Note. S's Ethnicity refers to subject's ethnicity.
*$p < .05$.
**$p < .01$.
***$p < .001$.

Table 47

Analysis of Variance on Self Contribution Scale--
Black, Hispanic, and White Subjects

Source	df	ms	F
S's Ethnicity	2	3.657	.855
Unit	94	4.278	-----
Ethnicity	1	2.051	6.585*
S's Ethnicity X Ethnicity	2	.090	.289
Ethnicity X Unit	94	.312	-----
Face	1	67.449	42.275***
S's Ethnicity X Face	2	1.963	1.230
Face X Unit	94	1.595	-----
Voice	1	9.263	17.342***
S's Ethnicity X Voice	2	.427	.800
Voice X Unit	94	.534	-----
Script	1	111.850	44.466***
S's Ethnicity X Script	2	.258	.102
Script X Unit	94	2.515	-----
Ethnicity X Face	1	1.331	4.487*
S's Ethnicity X Ethnicity X Face	2	.017	.058
Ethnicity X Face X Unit	94	.297	-----
Ethnicity X Voice	1	3.085	12.484***
S's Ethnicity X Ethnicity X Voice	2	.085	.344
Ethnicity X Voice X Unit	94	.247	-----
Face X Voice	1	2.233	4.346*
S's Ethnicity X Face X Voice	2	.921	1.793
Face X Voice X Unit	94	.541	-----
Ethnicity X Script	1	3.345	8.239**
S's Ethnicity X Ethnicity X Script	2	.095	.234
Ethnicity X Script X Unit	94	.406	-----
Face X Script	1	48.664	26.508***
S's Ethnicity X Face X Script	2	2.786	1.518
Face X Script X Unit	94	1.836	-----

Table 47 (continued)

Source	df	ms	F
Voice X Script	1	9.341	15.113***
S's Ethnicity X Voice X Script	2	.672	1.087
Voice X Script X Unit	94	.618	-----
Ethnicity X Face X Voice	1	1.646	3.775
S's Ethnicity X Ethnicity X Face X Voice	2	.001	.003
Ethnicity X Face X Voice X Unit	94	.436	-----
Ethnicity X Face X Script	1	.450	1.906
S's Ethnicity X Ethnicity X Face X Script	2	.010	.043
Ethnicity X Face X Script X Unit	94	.236	-----
Ethnicity X Voice X Script	1	1.558	4.149*
S's Ethnicity X Ethnicity X Voice X Script	2	.040	.106
Ethnicity X Voice X Script X Unit	94	.376	-----
Face X Voice X Script	1	1.651	4.689*
S's Ethnicity X Face X Voice X Script	2	.229	.650
Face X Voice X Script X Unit	94	.352	-----
Ethnicity X Face X Voice X Script	1	2.101	6.690*
S's Ethnicity X Ethnicity X Face X Voice X Script	2	.007	.021
Ethnicity X Face X Voice X Script X Unit	94	.314	-----
Total	1551	1.087	

Note. Ethnicity refers to encoder's ethnicity.
Note. S's Ethnicity refers to subject's ethnicity.
*$p < .05$.
**$p < .01$.
***$p < .001$.

Appendix A

Instructions and Rating Scale for Judging Verbal Content

The purpose of this study is to measure the meanings of some messages on a friendly-unfriendly scale. In rating the following statements please make your judgments on the basis of how friendly or unfriendly these messages seem to you.

If you feel that the statement would be said by someone who is very friendly you should place your check mark as follows:

Friendly x _ _ _ _ _|_ _ _ _ _ _ Unfriendly

If you feel that the statement would be said by someone who was moderately friendly you should place your check mark as follows:

Friendly _ _ _ x _ _|_ _ _ _ _ _ Unfriendly

These same directions apply for those statements you think would be said by a person who was unfriendly, using the other end of the scale.

Important:

Place your check marks in the middle of spaces, like this: x.
Be sure you make a mark on the scale for each statement.
Do not put more than one check mark on any one scale.

Please turn the page and begin.

Appendix A (continued)

1. You're hopeless. You're completely hopeless.

   Friendly _ _ _ _ _ _|_ _ _ _ _ _ Unfriendly

2. You're going to drive me out of my mind.

   Friendly _ _ _ _ _ _|_ _ _ _ _ _ Unfriendly

3. That's good. That's really great.

   Friendly _ _ _ _ _ _|_ _ _ _ _ _ Unfriendly

4. Thanks alot for your help.

   Friendly _ _ _ _ _ _|_ _ _ _ _ _ Unfriendly

5. You certainly have a nice group of friends.

   Friendly _ _ _ _ _ _|_ _ _ _ _ _ Unfriendly

6. I give up on you. You're impossible.

   Friendly _ _ _ _ _ _|_ _ _ _ _ _ Unfriendly

7. You're a complete idiot.

   Friendly _ _ _ _ _ _|_ _ _ _ _ _ Unfriendly

8. You really did a fine job.

   Friendly _ _ _ _ _ _|_ _ _ _ _ _ Unfriendly

Age____

Sex____

Appendix B

Instructions and Rating Scale for Judging Faces

This experiment is concerned with judging a person's emotional attitude by her facial expression. You will see some videotaped clips of a young woman speaking, but you will not hear the sound portion of the tape. Sometimes her facial expression will seem very friendly, sometimes it will seem very angry, and sometimes it will seem neither. Your task is to judge how friendly or how angry the woman is on the basis of her facial expression. Do not try to read her lips or try to determine in any other way what she is saying. It is not important. Base your judgments only on how friendly or how angry her facial expression seems to you.

For each videotape clip rate the woman's attitude on a friendly-angry scale from 1 to 9. For example, if you think the woman's attitude is very friendly, put a mark on the line for that clip under number 1, as shown below:

1	2	3	4	5	6	7	8	9
very friendly		somewhat friendly		neutral		somewhat angry		very angry
x	___	___	___	___	___	___	___	___

Each clip is very short, so please pay close attention. There are about 15 seconds between each clip, which should give you enough time to mark your answer.

At the bottom of the page please indicate your age, sex, and ethnic group identification. Do not put your name. Thank you.

Age:____years

Sex: M F

Ethnic group identification:_____

Appendix C

Instructions and Rating Scale for Judging Random-Spliced Voices

This experiment is concerned with judging a person's emotional attitude by her voice. You will hear sentences spoken by a woman in various tones of voice. These sentences will be very difficult to understand because the words are in scrambled order. You will not be able to make any sense out of the message, so do not worry about this. Pay attention only to the tone of voice of the woman speaker.

Your task is to judge how friendly or angry the woman's emotional attitude seems from the tone of her voice. Sometimes it will seem that the woman is using a friendly tone of voice, sometimes an angry tone of voice, and sometimes the voice will seem neither friendly nor angry. You will not always be sure of your choice and you will have to guess. Even if you are not at all sure, please guess.

For each sentence rate the woman's tone of voice on a friendly-angry scale from 1 to 9. For example, if you believe that the woman's attitude is very friendly, put a mark on the line for that statement under number 1, as shown below:

1	2	3	4	5	6	7	8	9
very friendly		somewhat friendly		neutral		somewhat angry		very angry
x	___	___	___	___	___	___	___	___

The sentences are short, so please pay close attention. There are about 15 seconds between each sentence, which should give you enough time to mark your answer. Please rate every sentence. The first few sentences are for practice, just to show you what the sentences sound like. I will tell you when to begin.

At the bottom of this page please indicate your age, sex, and ethnic group identification. Do not put your name. Thank you.

Age: ___ years
Sex: M F
Ethnic group identification: _____

Appendix D

Mean Ratings for Scripts, Faces, and Random-Spliced Voices Presented as Single Channel Messages

Order	Script	Face	Voice	Encoder	Script Rating*	Face Rating**	Scrambled Voice Rating**
1	- (idiot)	-	-	WH 1	-4.62	8.50	8.31
2	+ (Thanks)	+	-	WH 2	+5.19	2.94	6.71
3	+ (Thanks)	-	-	WH 3	+5.19	6.88	7.00
4	+ (That's good)	+	+	H 1	+4.77	2.50	3.17
5	+ (Thanks)	-	-	H 2	+5.19	6.67	6.75
6	- (idiot)	+	+	WH 4	-4.62	2.78	3.57
7	+ (That's good)	-	-	WH 2	+4.77	8.63	6.85
8	+ (Thanks)	+	+	WH 4	+5.19	1.89	3.53
9	+ (That's good)	-	+	WH 2	+4.77	8.00	3.00
10	- (hopeless)	+	-	WH 3	-3.92	2.63	6.70
11	+ (That's good)	+	-	H 3	+4.77	3.44	6.57
12	- (idiot)	+	-	WH 3	-4.62	2.00	6.73
13	- (idiot)	-	-	H 2	-4.62	3.56	6.53
14	- (hopeless)	-	-	H 2	-3.92	7.56	7.69
15	+ (That's good)	-	+	H 1	+4.77	7.38	2.40
16	- (idiot)	+	-	H 3	-4.62	2.22	6.71
17	- (hopeless)	-	-	WH 4	-3.92	7.78	6.91
18	+ (Thanks)	+	-	H 3	+5.19	3.89	6.39
19	- (hopeless)	+	+	WH 2	-3.92	3.56	3.00
20	+ (Thanks)	-	+	H 1	+5.19	6.88	3.63
21	- (idiot)	+	-	H 1	-4.62	3.00	2.40
22	- (hopeless)	+	+	H 1	-3.92	3.00	3.50
23	- (idiot)	-	+	WH 2	-4.62	6.47	3.42
24	+ (Thanks)	-	+	WH 4	+5.19	6.89	3.64
25	+ (That's good)	+	+	WH 1	+4.77	1.88	3.00
26	+ (That's good)	-	-	H 3	+4.77	6.56	6.54
27	- (idiot)	-	+	H 1	-4.62	6.35	3.33
28	- (hopeless)	-	+	WH 2	-3.92	6.38	3.57
29	- (hopeless)	+	-	H 2	-3.92	2.56	6.63
30	+ (Thanks)	+	+	H 3	+5.19	1.87	3.57
31	+ (That's good)	+	-	WH 3	+4.77	1.88	6.62
32	- (hopeless)	-	+	H 1	-3.92	6.57	2.53

Note:
* -6=unfriendly, +6=friendly
**1=very friendly, 9=very angry
Order is random order 1
WH=White encoder, H=Hispanic encoder

Appendix E

Instructions for Judging Multichannel Messages

(These instructions were presented on audiotape to subjects. No written instructions were given.)

All groups except "No Context". Many charities depend on volunteers approaching strangers to (1) help make the charity more well known, (2) create a more favorable impression of the organization, as well as to (3) collect money. This study is investigating the kinds of impressions different people create when they are trying to raise money for a charity to benefit retarded children. On the TV screen you will see several CCNY students acting out different reactions to people whom they have just asked to donate money.

"Positive Expectation". In viewing the following scenes, you should know that in each case, the charity collectors are reacting to a person who has donated about $3.00 and said something like, "I'd like to give you more money, but this is all I have right now."

"Negative Expectation". In viewing the following scenes, you should know that in each case, the charity collectors are reacting to a person who has donated just 5¢ and said something like "Here. As far as I'm concerned those retarded kids aren't worth a dime. Take this, and don't come back."

"No Context". On the TV screen you will see some women's reactions to people.

All groups ("No Context" alternate underlined). Each reaction of the (charity collector) woman is very short, so please pay close attention. Sometimes the (collector) woman will give a positive reaction, such as these (show two positive messages). Sometimes the (charity collector) woman will give a negative reaction, like these (show two negative messages). Now you are going to see more scenes of different (charity collectors) women like the ones I just showed you. For each scene I'd like you to tell me your impression of the (charity collector) woman by using this positive-negative scale. (See Appendix F for positive-negative scale.) For example, if your impression is extremely positive, remember the first two scenes you saw, put a mark on the line under number 10. In the same way, you can use any number to show how positive or negative your impression is of each (charity collector) woman. Do you have any questions?

After judging each scene, I'm also going to ask you how certain you were of your judgment. Therefore, after rating your impression of the (charity collector) woman in each scene, also rate how certain you are of your impression. You'll be using the following certain-uncertain scale: (See Appendix F for certain-uncertain scale.) For example, if you are moderately certain of your judgment of a scene, put a mark on the line under number two on the scale. In the same way, you can use any number on the scale to show your feeling of certainty for your judgment of each scene.

All groups except "No Context". In addition to judging the positive or negative impression of the charity collectors I'm also going to ask you to consider how much money, on the average, you think each collector would receive as a donation if she continued to react in the same way. Mark the space under the amount of money that comes closest to your guess on the other's contribution scale. (See Appendix F for other's contribution scale.) After you have done that, decide how much money you would give to this particular charity collector. Mark the amount of money that comes closest to your choice on the self contribution scale. For example, if you think you would contribute 90¢, put a mark on the line under $1.00. (See Appendix F for self contribution scale.)

All groups. Please rate every scene, even if you are sometimes not sure. For statistical purposes please fill in the information requested at the bottom of the first page of the rating sheet. Thank you for your participation.

"Positive Expectation". Again, as you make your judgments try to remember what the charity collectors are reacting to; in each case the person they are reacting to has donated about $3.00 and said something like, "I'd like to give you more money, but this is all I have right now."

"Negative Expectation". (Same as above, except substitute:) has donated just 5¢ and said something like, "Here. As far as I'm concerned those retarded kids aren't worth a dime. Take this, and don't come back."

Appendix F

Rating Scales for Judging Multichannel Messages

Positive

1	2	3	4	5	6	7	8	9	10
extremely positive	very positive	moderately positive	somewhat positive	slightly positive	slightly negative	somewhat negative	moderately negative	very negative	extremely negative

Negative

Certain

1	2	3	4	5	6
extremely certain	moderately certain	slightly certain	slightly uncertain	moderately uncertain	extremely uncertain

Uncertain

	0¢	5¢	10¢	25¢	50¢	$1	$2	$3	$5	$10
Other's contribution:	___	___	___	___	___	___	___	___	___	___
Self contribution:	___	___	___	___	___	___	___	___	___	___

Appendix G

Altruism Questionnaire

Please indicate whether you agree or disagree with each of the following statements by checking the appropriate space.

		Agree	Disagree
1.	Most people would stop and help a person whose car is disabled.	____	____
2.	The average person is conceited.	____	____
3.	Most people inwardly dislike putting themselves out to help other people.	____	____
4.	"Do unto others as you would have them do unto you" is a motto most people follow.	____	____
5.	People are usually out for their own good.	____	____
6.	The typical person is sincerely concerned about the problems of others.	____	____
7.	Most people try to apply the Golden Rule even in today's complex society.	____	____
8.	Most people with a fallout shelter would let their neighbors stay in it during a nuclear attack.	____	____
9.	It is only a rare person who would risk his own life and limb to help someone else.	____	____
10.	Most people will act as "Good Samaritans" if given the opportunity.	____	____

		Agree	Disagree
11.	Most people exaggerate their troubles in order to get sympathy.	____	____
12.	It's pathetic to see an unselfish person in today's world because so many people take advantage of him.	____	____
13.	Most people do not hesitate to go out of their way to help someone in trouble.	____	____
14.	People pretend to care more about one another than they really do.	____	____

Age:_____years

Sex: M F

Ethnic group identification: Black, Hispanic, Oriental,

White, other_____

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