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THE EFFECTS OF WARNING
AND LEFT AND RIGHT EXPRESSIVENESS
ON THE DETECTION OF DECEPTION

by

Les Benedict

B.S., Montana State University, 1966

Presented in partial fulfillment
of the requirements for the degree of

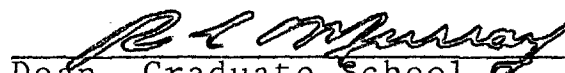
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The Effects of Warning and Left and Right Expressiveness on the Detection of Deception (95 pp.)

Director: William W. Wilmot *W.W.W.*

This study tested two research questions concerning the accuracy of detection of deception of forewarned and unwarned subjects, and the differences between the left and right sides of the face in expressing deceptive cues.

Five subjects were asked to lie about two of four areas in videotaped interviews. Based on holistic nervousness ratings a mid-range deceiver was chosen for final presentation to experimental subjects.

In a 2 X 2 design, sixty-eight subjects viewed either a normal videotape or reversed image videotape of the deceptive interview, and were either warned or unwarned of possible deception by an instruction sheet in a questionnaire booklet. Subjects rated the four areas of the interview with four identical groups of semantic differential scales. An Honest-Dishonest scale embedded in each group measured the accuracy of detection of deception.

A two-way Analysis of Variance was used as a statistical procedure. The results indicate that warned S's rated the deceiver as significantly less honest than did unwarned S's in three areas, but that both warned and unwarned S's were unable to differentiate significantly between lying and truthful areas of the interview, achieving no better than chance accuracy. No significant relationship was found between left and right sidedness and accuracy of detection.

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He that has eyes to see and ears to hear
may convince himself that no mortal can
keep a secret. If his lips are silent,
he chatters with his finger-tips: betrayal
oozes out of him at every pore.
(Freud, 1959, 94)

RATIONALE

Deception, the willful distortion or negation of truth, is an established part of human intercourse. It ranges from humorous "put ons" (Stebbins, 1975) to the life and death seriousness of the courtroom (Miller & Fontes, 1978). The control of information to save face, to avoid tension and conflict, or simply to exploit occurs regularly. Only 38 % of 870 responses to friends, relatives, and acquaintances in a recent study were self-rated as being completely honest (Turner, Edgley, & Olmstead, 1975).

Given this propensity to use deceit as a communication strategy it is natural that the detection of deception is salient to a broad spectrum of communication settings; from intimate dyads to the business world. Research on deception has not ranged widely, however. In the area of intimate relationships the operationalizing of variables is an apparent problem, and pertinent literature is almost non-existent (Knapp, 1978, pp. 222-224).

The criminal investigation system has for a

great number of years put its faith in psychophysiological aspects of lie detection and while a good deal of literature exists in this area, much that it covers is directed toward the use of sophisticated mechanical devices attached to the deceptive subject, not an approach that is feasible in the majority of day to day interpersonal encounters.

A small but growing body of literature has examined some variables of deception applicable to business interviews (McClintock & Hunt, 1975), doctor-patient relationships (Ekman & Friesen, 1969), teacher-student confrontations (Maier, 1966; Maier & Thurber, 1968), and witness-juror testimony (Miller & Fontes, 1978). In these encounters the only cues available are verbal and nonverbal behaviors that are assessed by the sensitivity of the perceiver, either face to face or through an unattached recording medium such as videotape or film.

It was the purpose of this study to examine the ability of untrained observers to detect verbal and nonverbal deception cues presented in the form of a videotaped interview.

CHAPTER I

REVIEW OF LITERATURE

Dimensions of Deception

A simple and straightforward definition of deception is offered by Mixon (1974):

Deception usually implies misleading someone by getting the person to believe something that is not so. (pp. 89)

The concept of deception becomes somewhat more complicated when the participants involved in a deceptive encounter are separately taken into account. For the purposes of this study the person or persons generating deceptive cues will generally be called sender(s). Those potential victims of deception will be called receiver(s). Citing attribution theory, Miller and Fontes (1978) point out that truth/deception judgments made by the receiver may be influenced by past knowledge of the sender, or topic of discussion, and by prejudices concerning the status, race, sex, and other attributes of the sender. It is suggested that the receiver's truth/deception judgments of an intimate are based on knowledge concerning the sender's idiosyncrasies, this being termed stimulus discrimination. If the sender is a non-intimate, or stranger, the truth/deception judgments are based on stereotyping, termed stimulus

generalization. Stimulus discrimination judgments of an intimate are believed to be the most accurate although research in this area is needed (Miller & Fontes, 1978; Knapp et al., 1974; Knapp, 1978).

In opposition to that viewpoint, research in first impressions has shown stereotyping to be accurate in certain instances (Burgoon & Saine, 1978, chap. 6). That stimulus discrimination by a receiver may be accurate but misleading is also shown in the strategy of an inveterate deceiver who reports the truth in such a manner that others believe they are about to be "put on" again (Stebbins, 1975). In this case prior knowledge of deceptive behavior leads to deception. Stereotypes and attributes of both sender and receiver seem to have been generally ignored in deception literature. Only sex seems to have been examined and these findings are reviewed in the Accuracy of Detection section.

Miller and Fontes (1978) also point out that the intention of the sender must be taken into account. It is possible for a sender to unintentionally provide false information that is believed by the sender to be true. While this is misleading it is not intentional.

For their purposes deception was seen as communicative behavior emitted by the sender with the

intention of creating false beliefs in the receiver which the sender recognized as false or invalid. This definition of deception appears to be tacitly utilized by numerous researchers in the area (Miller & Fontes, 1978; Kanpp, et al., 1974; Motley, 1974; Fay & Middleton, 1941; Berrien & Huntington, 1943; Eckman & Friesen, 1974; Streeter, Krause, Geller, Olson & Apple, 1977).

When a sender intends to deceive it is theorized that spontaneous behavior is suppressed, and planned, or simulative behavior, is substituted (Miller & Fontes, 1978; Eckman & Friesen, 1969, 1975).

Degree of ego involvement with the topic of deception can effect the sender's spontaneity. If the topic is unimportant to the sender there are apt to be fewer cues to deception (Miller & Fontes, 1978; Matarazzo, 1970; Thackray & Orne, 1968; Gustafson & Orne, 1965).

The physiological and psychological make-up of the sender also has a bearing on the success of the deception. More than fifty years ago Marston (1920) divided deceivers into positive, or unsuccessful liars and negative, or successful liars, plus mixtures of these two types, based on psychophysiological reactions. Ekman and Friesen (1975) identify eight styles for displaying affect in the face; (1) withholders, who tend not to be expressive, (2) revealers, who automatically

reveal what they feel, (3) unwitting expressors, who aren't aware of how expressive they are, (4) blanked expressors, who think that they are expressing emotions but aren't, (5) substitute expressors, who have a preemptive expression that occurs to the exclusion of other expressions, (6) frozen affect expressors, who seem locked into one particular emotion, (7) ever-ready expressors, who start almost all situations with the same expression before passing into the proper expression, and (8) flooded-affect expressors, who, although rare, have only one or two expressions that continually flood the face.

These dimensions of deception, attribution, intentionality, ego involvement, and ability of the sender give a rather large continuum of possible deceptive behavior. Most researchers have polarized this continuum by examining deceivers versus non-deceivers rather than degrees of deception (Exline, Thibaut, Hickey & Gumbert, 1970; Ekman & Friesen, 1974; Knapp et al., 1974; McClintock & Hunt, 1975).

Indicators of Deception

Folklore and anecdotal evidence tends to characterize a dishonest person, liar, or deceiver as one who becomes flustered, won't look anyone in the eye, or is reticent to talk about certain topics (Knapp,

et al., 1974). Beyond these traditional homespun cues the field of criminal investigation has for many years been aware of psychophysiological changes that supposedly indicate emotion connected with deception (Marston, 1920; Goldstein, 1923).

Among the commonly monitored body responses are respiration rate, blood pressure, pulse and heart action, and galvanic skin resistance (Ewing, 1965; Thackray & Orne, 1968; Cutrow, Parks, Lucas, & Thomas, 1972). These particular responses must of necessity be recorded by sophisticated mechanical devices which are physically attached to the subjects being examined.

There are a certain number of responses generally measured mechanically which also fall into the realm of possible visual or aural observation by a person interacting at normal conversational distance. These cues include voice latency, voice pitch, eye blink rate and latency, and pupillary responses.

Voice latency is the time it takes for a subject to verbally react to a question. Researchers have found that deceptive answers tend to be longer in coming, or more latent (Marston, 1920; Goldstein, 1923; English, 1926; Matarazzo et al., 1970). Motley (1974) has also found that, acoustically, deceptive answers are fractions of a second shorter in duration than honest responses. Although supposedly beyond

conscious human discrimination it is posited that subconsciously these minute differences might be detectable.

There is some indication that voice pitch in male subjects tends to be higher during lying than during truth-telling, and that the difference is somewhat greater when the deceptive act is more stressful. Raters apparently do not ordinarily use pitch cues as cues to deception, however, except when the semantic content of the speech is unintelligible (Streeter et al., 1977). Ekman, Friesen and Scherer (cited in Weitz, 1979, pp. 349) also found that voice pitch increased among student nurses, presumably female, during deceptive responses.

Eye blink rate has been reported to show both increases and decreases under tension-producing situations. When lie stimuli are present both eye blink rate and latency have been found to be significantly inhibited (Cutrow et al., 1972).

The pupil of the eye seems to show a slow dilation followed by a very rapid constriction or a sudden change in stability when deceit is attempted (Berrien & Huntington, 1943).

Studies of human behavior from an interpersonal, non-mechanistic viewpoint have found certain patterns correlated with deception. Ekman and Friesen (1969,

1972, 1974, 1975), proponents of a meaning-centered approach to nonverbal communication, suggest that the body may emit more deception cues than the head. These findings have been confirmed by other researchers (McClintock & Hunt, 1975; Miller & Fontes, 1978; Knapp et al., 1974).

Three classes of nonverbal behavior from a rather complex and sometimes repetitive taxonomy developed by Ekman and Friesen (1969, 1972) seem especially relevant to deception.

Emblems are those acts which have direct verbal translations, are usually known by most members of a group or culture, are intentionally sent, and are well-understood by the receiver. Emblems can include any part of the body although typically they involve the hands, head orientation, facial movement, or posture.

Illustrators are acts that accompany speech on a moment-to-moment basis. They pictorialize what is being said. Illustrators do not have as precise a verbal definition as emblems, and do not occur without conversation.

Adaptors are movements first learned as part of an effort to satisfy self or body needs. Self-adaptors would be exemplified as picking, preening, rubbing or squeezing some part of the body. Object-

adaptors involve the use of an object or prop such as a pencil, cigarette, or item of clothing for nervous touching or handling.

Specifically during deception there was found to be an increase in frequency of: (1) self-adaptors such as the chin stroke, the lips press, the mouth cover, the nose touch, the cheek rub, the eyebrow scratch, the earlobe pull, and the hair-groom, (2) the hand shrug emblem, a turning outward of the hands which has the meaning of helplessness or inability, and (3) body shifts, or squirming. There was a decrease in the use of illustrators or simple gesticulations made with the hands (Ekman & Friesen, 1972, 1974; Morris, 1977). In a further replication Ekman, Friesen and Scherer (cited in Weitz, 1979, pp. 349) found that hand illustrators also showed an increase during deceptive responses.

In dealing with the more hidden facial deceit Ekman and Friesen (1975) indicate that recognition of leakage and deception clues are important. Leakage is defined as the non-intended betrayal of a concealed emotion. Deception clues reveal that facial management is occurring but not what the concealed emotion is. Four aspects of facial expression are suggested as sources of cues; the morphology, or

configuration of the face, the timing of an expression - how long it takes to appear, how long it remains, how long it takes to disappear; the location of the expression in relation to verbal behavior, and micro-expressions - expressions perhaps one-fifth to one twenty-fifth of a second in duration. Micro-expressions are believed to be the true emotions which are then masked with simulative behavior.

Knapp, et. al. (1974) in an analysis of non-verbal and verbal cues to deception found fourteen significant communicative differences. Subsumed under the deceiver/non-deceiver differences of uncertainty, vagueness, nervousness, reticence, dependence, and negative affect, the specific behavioral correlates are: (1) Confidence ratio: deceivers were less able to use language to fill in interaction time than non-deceivers. Ostensibly deceivers were concerned about verbal slips and chose to remain silent more often. This would seem to relate to voice latency findings. (2) Different words: deceivers used fewer different words than those who spoke truthfully. (3) Factual statements: deceivers made fewer factual statements. (4) Self-experience: deceivers mentioned their own experiences less. (5) Past reference: deceivers referred to past events less than non-deceivers. (6) Leveling terms: deceivers made

sweeping, non-specific statements and used allness terms in large quantity. (7) Adaptors: deceivers showed a strong increase in self and object adaptors such as fingering the creases in trousers, or fidgeting with glasses, confirming the findings of Ekman and Friesen (1974). (8) Total words: deceivers used fewer total words than non-deceivers. (9) Probes: by using fewer words the deceivers opened themselves to more probing questions by the interviewer (a receiver oriented cue). (10) Self-interest: deceivers referred to themselves less often. (11) Other references: deceivers made consistent reference to "them". This is seen as a disassociation phenomenon. (12) Group references: deceivers made fewer references to their affiliation groups (veterans). (13) Disparaging statements: deceivers made more unfavorable remarks about other persons, groups, and institutions. (14) Eye duration: deceivers had fewer mutual glances and maintained eye contact for shorter durations than non-deceivers.

Todd-Mancillas and Kibler (1979) in a test of the validity of these indices using the modified Flesch human interest score, and the modified Flesch reading ease score found support for the reticence measures; number of words spoken, messages duration, and probes, but not for disparaging statements,

leveling terms, factual statements, self-experience statements, or past references. Among possible reasons suggested for these differences were differences in operationalizing the variables, rigorous alpha levels in the validity test, gender differences among subjects, and as the most likely candidate, the indication that the indices put forward by Knapp et al. (1974) did not measure what they were purported to measure.

The finding of Knapp et al. (1974) on duration of gaze is in opposition to McClintock and Hunt (1975) who found more eye contact during deceptive responses. McClintock and Hunt suggest that the deceivers may have been trying to simulate a credible appearance of the attitudinal position opposite their own. Exline et al. (1970) indicate that highly Machiavellianistic deceivers tend to simulate non-deceptive responses by purposely maintaining eye contact during deceptive responses, but those with less manipulative tendencies more often look away. Differing male and female gaze patterns might also enter as an underlying factor (Burgoon & Saine, 1978, chap. 7; Cook, 1977).

Although researchers are not always in total agreement, certain postures, gestures, eye behaviors, facial expressions, and verbal nonfluencies, as re-

viewed above, seem to be correlates of deception, and are sometimes available for the receiver to decode. The problem of experimentally generating these cues for study will be taken up next.

Producing Deception in the Laboratory

In real life situations a researcher could never be certain that a potential deceiver was being deceptive at any given time. Furthermore, only in rare instances would a deceiver reliably reveal his deviousness. This lack of experimenter control has prevented most researchers from venturing into such areas of potential deception as criminal tribunals, politics, or business negotiations. Instead, most researchers interested in identifying behavioral correlates, or receivers' abilities to detect deception, have had to cope with the laboratory problem of inducing a sender to produce deceptive behavior on demand.

The psychophysiological field has examined the problem of laboratory deception in some detail. Gustafson & Orne (1964) suggest that two paradigms exist: the guilty information paradigm, and the guilty person paradigm.

A typical guilty knowledge experiment (Gustafson & Orne, 1963) required that subjects pick a card from

a deck where all the cards were numbered from two to nine, or lettered B to I. The subjects then memorized the number or letter. In order to make the selected card more significant they were given two minutes to write down all words beginning with that letter, or titles and expressions containing that number. The subjects were then told to lie down and relax and after five minutes they heard a taped series of letters or numbers, including their letter or number. Subjects in certain conditions were encouraged to deceive the polygraph. Physiological responses were measured to each of the numbers or letters played from the tape. In debriefing, the subjects who were successful at deceiving the polygraph indicated that they had done so by producing a physiological response to the wrong letter or number rather than by suppressing responses to their chosen number or letter. This was successful in the laboratory but it would not work in field conditions where the subject is concerned with convincing a polygraph operator that he is innocent - not that he is guilty of something else.

Accordingly a guilty person experiment was designed. In this case the subjects selected cards from a deck which had both blank and numbered or lettered cards. The subjects were especially in-

structed to respond as if they had drawn a blank card in all cases. In some cases they actually had drawn a blank card and did not have to feign innocence. In other cases they had to suppress the numbered or lettered card and act as if they had a blank card. This guilty person paradigm more closely approximated real life deception. The subject had to appear innocent in order to succeed.

In addition to the guilty person and guilty information paradigms the psychophysiological studies found that subjects were much more detectable in deception when the material withheld was personally relevant, or ego involving, such as a person's name and date of birth as opposed to colors, birds, or trees (Thackray & Orne, 1968a, 1968b; Cutrow et al., 1972). Davidson (1968) described a hunter game that was supposedly highly ego involving to university students. The game consisted of subjects hunting down and simulating the murders of unknown victims about whom they had been given basic identifying information. The victims were carrying envelopes containing varying amounts of money which they had to relinquish to the murderers. The victims were able to manipulate the situation with a safe-period device so that out of three assigned subjects one was a successful murderer, one had attempted murder and was

unsuccessful, and one had intended to murder the victim but hadn't had a chance to try. A fourth control subject who knew nothing about the victim gave the investigator a range from complete innocence to extreme guilt.

The technique of using highly ego involving material has generally been used in non-mechanistic studies as well. Fay and Middleton (1941) used such items as weight, height, left or right handedness, and color of necktie. Matarazzo et al. (1972) found that college major was more salient than living setting for a group of college students. Streeter et al. (1979) used person beliefs about politics, religion, the future, and values. Knapp et al. (1974) used the pros and cons of educational benefits for veterans. Ekman and Friesen (1974), instead of using topics of a personal/historical nature, showed nurses pleasant (undescribed) or unpleasant (limb amputation) films, and asked them to describe their feelings truthfully and non-truthfully.

Motivational appeals for subjects to be deceptive were found by Gustafson and Orne (1963) to increase detectability. They indicated to subjects that deception was extremely difficult and only people of superior intelligence and great emotional control were able to evade detection. Additionally

an extra dollar was offered for anyone who was a successful deceiver. A similar motivation, termed as arousal, was used successfully by Streeter et al. (1979). Ekman and Friesen (1974) told student nurses that success in deception was relevant to their professional career, had the Dean of their school invite them to participate in the experiment, and indicated that prior research had shown that skilled members of their profession were successful deceivers in previous runs of this particular experiment. Pilot studies apparently suggested that the last motivational factor was actually legitimate.

The spontaneity of deceptive replies has been manipulated to a small extent by researchers. Most experiments required the subjects to adopt a deceptive attitude toward certain predetermined topics or items. Some minutes later they entered the experiment and were expected to be deceptive (Gustafson & Orne, 1963, 1964, 1965; Thackray & Orne, 1968a, 1968b; Davidson, 1968; Cutrow et al., 1972; Matarazzo et al., 1970; Motley, 1970; Berrien & Huntington, 1943; Knapp et al., 1974). In a few cases researchers allowed the subjects to deceive at will on two out of four, or four out of eight items (Streeter et al., 1979; Marston, 1920; Goldstein, 1923; English, 1926). Whether the subjects chose the items on which to be

deceptive beforehand or spontaneously as each item came up is a moot point. Other researchers cued subjects to be deceptive with varying degrees of immediacy as the experiment proceeded. Ekman and Friesen (1974) inserted a title between the first and second minutes of their pleasant and unpleasant films. Shortly after that an interviewer began asking questions about the subjects' feelings as the subjects watched the films. Fay and Middleton (1941) utilized an announcer to ask each potential deceiver ten questions. After each question the announcer held cards up for the subjects to view which indicated either to lie or tell the truth. McClintock and Hunt (1975) cued subjects through an earphone as the interview proceeded.

The use of spontaneous cues such as display cards or earphones can be criticized on the basis of their artificialness. If a sender has intentions to deceive, he probably also knows well ahead of time the topics he will be deceptive about. This artificialness can also be seen as contributing to inflated accuracy of judgement scores. Senders cued through earphones or by cards probably exhibit slight reaction cues which in normal, pre-planned deception might be suppressed.

Role playing of deception has been the modus

operandi in some studies (Maier, 1966; Maier & Janzen, 1967; Maier & Thurber, 1968). This has been criticized for producing behavior which is not real deception, but rather deception as a role player believes someone who is lying acts (Miller & Fontes, 1978). As a technique this is believed to inflate the accuracy scores of receiving due to an over emphasis of lying behavior. Serious doubts have been raised about the use of role playing at all as a research technique because of the lack of realism and spontaneity (Freedman, 1969; Mixon, 1976).

Of all the studies reviewed only two have induced what might be termed realistic deception. In most cases the subjects knew that at least one of the experimenters was aware they were attempting deception. Exline et al. (1970) developed an induction procedure in the study of Machiavellianistic tendencies which lead the subjects to believe that they were actually deceiving the experimenter. Used again by Miller and Fontes (1978) the experiment was ostensibly a group problem solving study. The subjects were told that four, three, and two person groups, plus individuals were being asked to engage in the same task. A \$50 award was offered for the best performance by each sized group. All subjects were informed that they had been randomly assigned to a dyad group and matched

with a student from another class. The other student was actually the experimenter's confederate.

The task required the dyad to estimate the number of dots on a series of cards flashed in front of them for fifteen seconds each. After a few cards had been flashed the experimenter was intentionally interrupted by an "important phone call from the director of the project".

When the experimenter left the room the confederate obtained and read aloud the correct answers for the remaining cards from a folder the experimenter had left behind. If the subjects didn't report this on the experimenter's return for the continuation of the test they were automatically implicated in the act of cheating. In truthful modes the confederate did nothing while the experimenter was gone.

After completion of the task the experimenter would debrief the dyad. Always starting with the subjects, the first few questions were designed to produce truthful behavior and covered areas such as name, year in school, and previous research experience. The follow-up questions then asked what strategies the dyad had used to arrive at their answers, becoming more and more specific because "you did so well at the end". These questions produced realistic deceptive answers when the subjects knew they had cheated.

Exline et al. (1970) even went so far as to accuse their subjects of cheating, and then reminded them that they were in a school with an honor system and could be taken to the Dean. Presumably because of ethical considerations this rather drastic method of obtaining deceptive denials was not utilized by Miller and Fontes (1978).

Interpersonal deception in the laboratory has followed two basic lines of inquiry: one group of studies has examined the behavioral differences between deceivers and non-deceivers by using judges and raters (Exline et al., 1970; Matarazzo et al., 1970; Ekman & Friesen, 1972, 1974; Knapp et al., 1974; McClintock & Hunt, 1975; Miller & Fontes, 1978). The second line of inquiry has examined how accurately untrained receivers can detect deception (Fay & Middleton, 1941; Maier, 1966; Maier & Janzen, 1967; Maier & Thurber, 1968; Ekman & Friesen, 1972; Miller & Fontes, 1978).

A perceived weakness in the second line, detection of deception by untrained observers, is that in nearly all studies the observers were forewarned of possible deception on the part of the subjects (Knapp, 1978, pp. 223). Miller and Fontes (1978) explained the cheating implication procedures to their observers before the subjects were monitored in live, video, or

transcript channels. Fay and Middleton (1941) advertised the truth/lie radio broadcast in advance in order to get interested listeners who would respond. Maier and Janzen (1967) asked their participants to observe a role-played student/professor interview involving a question of honesty or dishonesty. Ekman and Friesen (1974) followed a similar approach with videotaped interviews.

Researcher Donald Lombardi (cited in Burgoon & Saine, 1978, pp. 268) posits a two staged model of detection of deception. In the first stage a receiver perceives signals that seem inconsistent with other verbal and nonverbal messages related to the topic at hand. At this point the receiver makes a decision about whether to shift attention from the topic of conversation to the possible deceptiveness of the sender. The receiver may decide that the signals are idiosyncratic, or accidental and return to the original topic. In stage two continued monitoring of the sender yields additional inconsistency and the receiver must decide whether to confront the sender, ignore the signals, withdraw from the interaction, or modify the topic. Lombardi believes that a similar process occurs for the deceiver. If he begins to suspect counter-deception, or discovery, he has somewhat the same choices. The two-stage model is seen

as a cycle of scanning, interpretation, and goal modification.

Because of forewarning, most detection of deception studies employing untrained receivers would seem to have entered stage two of the Lombardi model before the experiment is underway.

Receiver Accuracy in Detecting Deception

Whether untrained receivers are able to detect deception with an accuracy exceeding chance, which has been set at 50% by most researchers, is debatable. Miller and Fontes (1978) point out that this criterion may be somewhat arbitrary since not all sources in real situations may be expected to lie 50% of the time. Because of experimental control, however, numerous studies have required 50% of their subjects to lie and 50% to be truthful.

Using this criterion Fay and Middleton (1941) in the audio channel only (radio) found men speakers judged correctly 57.59% of the time, and women 53.90% of the time for a total average of 55.55%, only 5% in excess of chance.

Maier and Thurber (1968) found that the transmission channel seems to have an effect on accuracy of judgment. In their study of a role-played student/professor situation an average of 77.0% of those who

listened to an audio tape of the interaction were accurate, as were 77.3% of those who read a transcript. Those who watched and heard the live interaction had an accuracy of only 58.3%. These rather surprising channel findings were generally supported by Cline et al. (1972) in a study on accuracy of personality judgments using visual content only, sound only, visual and sound, and transcripts of filmed interviews. Miller and Fontes (1978), however, found accuracy scores of 56.7% for live viewing, 46.7% for videotape and transcript, and 31.6% for audiotape. It was suggested that the substantially lower accuracy in comparison to Maier and Thurber (1968) was due to deception induction procedures, that of realism versus role-playing. The fact that the transcript channel of information transmission scored higher than the audiotape was attributed to the ability to examine and reexamine the message (Miller & Fontes, 1978).

Differences in channel accuracy may be further explained by research in sensitivity to available verbal and nonverbal cues which suggests that some people respond better to nonverbal cues and others to verbal cues with those who are sensitive to nonverbal cues being somewhat more attuned to verbal cues as well (Shapiro, 1968; Creek & Watkins, 1972).

Miller and Fontes (1978) suggested that signifi-

cant differences in the ability to use nonverbal information and detect deception occurred in the literature as the result of sex differences, but they failed to cite references, or indicate direction of accuracy. Fay and Middleton (1941) found women to be slightly more accurate than men in a deceptive situation. Rosenthal, Hall, Archer, Dimatteo, and Rogers (1979) indicated that women in 80% of their samples ($N = 2,615$), and at several age levels, were more accurate in judging general nonverbal material in the PONS test (Profile of Nonverbal Sensitivity).

Whether untrained observers can specifically identify the cues that indicate deception is questionable. In an experiment on the reliability of reasons in making judgments of honesty and dishonesty, Maier and Janzen (1967) concluded that people make judgments with varying degrees of accuracy but that their judgments are based on impression or intuition rather than logic.

This indication of a global judgment of deception cues would seem to be reinforced by a study on the percentage of message impact that is nonverbal. Hegstrom (1979) in investigating Albert Mehrabian's hypothesis (cited in Hegstrom, 1979) that the total impact of a message is equal to 7% from the verbal channel, 38% from the vocal channel, and 55% from

the facial channel, suggested that the sum of individual channel effects often does not account for the effect of all channels. Rather than Mehrabian's additive model, Hegstrom (1979) posited a contextual model. In other words the whole is equal to more than the sum of the parts.

However, this does not suggest that analyses of individual channels are completely nonproductive. The perceived challenge is to discover how individual channel differences contribute to the overall effect. Accordingly, the next section will examine a phenomena that may enhance channel perception.

Left and Right Expressiveness

Recent findings on facial expressiveness due to left and right hemispheric differences in the brain would seem to be pertinent to nonverbal cue studies, although they apparently have not been integrated into analyses of deceptive cues.

Anecdotal and experimental evidence has suggested that the right and left sides of the face are asymmetrical in character according to Wolff (1943). He proposed that the right side of the face is consciously expressive and public, while the left side is more inhibited and private. He further claimed that the right side of the face is perceived as more similar to the whole face than the left side. This

second proposition has been examined experimentally by a number of researchers (Lindzey, Prince, & Wright, 1952; Gilbert & Bakan, cited in Sackeim, Gur, & Saucy, 1978).

To do this two identical photographs were made of each subjects face, one in correct orientation and one in reversed orientation. The correct and reversed prints were cut vertically through the midline of the face and the two left sides and the two right sides joined to make left side and right side composites, each being exactly symmetrical. In addition, reversed orientation prints were made which simply gave a mirror reversal of the original (Lindzey et al., 1952)

Generally the right side composite is judged more similar to the original face than the left, but it has been shown that when the mirror reversal photograph is included, subjects judge whichever side of the face appears more to their left to be more similar to the whole face than whichever side appears more to their right. The general conclusion is that facial asymmetry in expression is determined more by left oriented visual biases of the perceiver than by asymmetry in actual expression (Sackeim et al., 1978).

This does not negate the theory that the sides of the face differ in expressiveness, however, and Sackeim et al. (1978) examined this proposition.

Cross-cultural evidence indicated that at least six distinct emotions can be reliably recognized in the human face; happiness, surprise, fear, sadness, anger, and disgust (Darwin, 1872; Ekman & Friesen, 1975). Using a set of posed still photographs of these emotions collected from the work of Ekman and Friesen; Sackeim et al. (1978) asked a group of subjects to scale the intensity of emotion portrayed in left and right composites. As a result, the left side composites were judged to express emotions more intensely than the right side composites.

Sackeim et al. (1978) pointed out that the implication of these findings is that in a face-to-face interaction the least expressive, or right side of the face falls into each perceivers left visual field. This creates a situation in which the side of the face that is more intense in expression, the left, is projected to the hemisphere which is relatively inferior in facial recognition and in the processing of emotional information.

These implications would seem to apply directly to deception. Cues of deception expressed on the left side of the face may be hidden or unrecognized. The fact that receivers may be overlooking, or only partially processing important deceptive cues might explain both the low accuracy of detection findings

and the impressionistic rather than logical reasons offered for judgment of cues. As a further extension of these left-right facial differences it can be posited that there may be a left-right difference in body cues emitted, which would similarly apply to detection of deception.

Videotape

Since the control of variables in this study required that deceptive/non-deceptive material be presented to subjects on videotape, this section will review pertinent literature.

Miller and Fontes (1978) investigated a number of properties of videotape in relationship to courtroom use. Their technique for all but the deceptive material, previously reviewed as an example of realistic deception induction, was to reenact actual trials with changing and anglicizing of names and editing of dialogue to make the situation experimentally more valid.

In a comparison of a single camera panoramic view and a triple camera, split screen technique providing close-up views of the witness and attorneys respectively in upper left and right quadrants, and a panoramic view in the lower half of the screen, it was found that there was no significant difference

in attribution of negligence, money awarded by jurors who found for plaintiffs, juror retention of trial-related information, and juror interest or motivation in the trial. There was found to be a significant influence on the perception of attorney credibility with the split screen system.

A comparison of the split screen, three camera technique to a live version of the same trial found no significant differences for either type of presentation.

The use of a vertical half-and-half split screen with technical switching to appropriate shots of the witness, the examining attorney, and the seated attorney as testimony was elicited, or objections raised, was also compared to a full screen presentation. The results suggested that type of presentation did not significantly influence perceptions of attorney credibility, verdicts arrived at by jurors, or perceptions of physical attractiveness of attorneys. Participants viewing the full screen presentation found one attorney's nonverbal communication to be significantly more effective than in the split screen presentation.

Examining information retention across live, black and white, and color presentations, the researchers found videotaped information retained more in later segments of testimony than live information,

and that the retention effect was more pronounced for black and white than for color videotape.

Type of camera shot and angle in relationship to strong and weak delivery styles in witnesses was also examined. Camera shots employed were defined as (1) Close-up: tight focus on the head and shoulders of individual(s) (2) Medium shot: focus from the head to just above the waist of individual(s), and (3) Long shot: full focus of individual(s) from head to foot.

In terms of normal production the long shot provided viewers with an orientation of the actor in the setting or location. The medium shot brings the action closer to viewers and is used more often in television production. It directs attention toward one or two individuals within the frame and allows perception of some facial expressions and gestures. The close-up shot reveals expressions or details that might be overlooked in other types of shots. It is used for dramatic emphasis (Millerson, 1964; Madsen, 1973).

An angle of ninety degrees to the vertical plane was used for all camera shots because it produces minimal biasing effects (Miller & Fontes, 1978; Millerson, 1964).

Three cameras were framed simultaneously upon the witness to produce the close-up, medium, and long shots. No mention is made of angle to the sub-

ject, but it is assumed that a full frontal view from nearly the same lens axis was used.

The results of this study suggested that subjects perceived the strong witness as significantly more composed, qualified, and dynamic than the weak witness. Subjects also retained more information and expressed greater interest when exposed to the strong witness. Effect of size of camera shot indicated that the weak witness was perceived as significantly more composed in the close-up shot. According to the researchers this was conceivably because the nonverbal cues of discomposure emitted from the body of the weak witness did not appear in the tightly framed close-up.

In the close-up shot it was also found that the strong witness was perceived as significantly more authoritative than in the long shot. This was believed to be due to emphasized facial nonverbals.

Conversely, subjects exposed to a long shot of the weak witness retained more information than in either the medium or close-up conditions. The explanation posited for this was the reverse of that for composure; the nonverbal cues in the closer two shots may have been distracting. This interpretation was tempered by the results of the previously described findings for composure and the weak witness.

Overall, the interaction effects between type of camera shot and type of witness accounted for only 5% of the variance in juror evaluations of strong and weak witnesses. The presentational skills of the witness seemed to be more important than variations in types of shots.

An analysis of head, head and body, and body only views and black and white or color videotape in relation to detection of deception revealed more accuracy for emotional testimony in the body only condition, more accuracy for factual testimony in the head and body condition, and no statistically significant difference between color and black and white presentations.

Summary

Research has identified certain nonverbal and verbal behaviors which seem to accompany deception. The ability of untrained observers to detect these cues in relative strangers, however, seems only slightly better than chance, with some channels of transmission apparently being more accurate than others. A salient criticism of most detection of deception studies has been that receivers were forewarned of possible deception, thus biasing accuracy judgments (Knapp, 1978).

Three lines of future endeavor have been sug-

gested by researchers: (1) An investigation of detection of deception among intimates in an established relational setting (Miller & Fontes, 1978; Knapp, 1978; Knapp et al., 1974), (2) Cue analysis of the same individual's lying and truth telling behavior (Miller & Fontes, 1978; Maier & Lavrakis, 1976), and (3) Examination of the stereotypes people have of liars by comparing cues judged as deceptive with those judged as truthful (Miller & Fontes, 1978).

In another area of nonverbal research there is the suggestion that the sides of the face differ in expressiveness, and furthermore that the left and right visual fields differ in perceptiveness (Sackeim et al., 1978).

RESEARCH QUESTIONS

A review of the literature suggested that the accuracy scores of persons making deception judgments may have been inflated, or experimenter biased, because of forewarning of the receivers. This raised the question;

1. How accurate at detecting deception are untrained receivers who have been warned of possible deception in comparison with receivers who have not been warned?

Cue analysis of an individual's lying and truth telling behavior was also pointed out in the litera-

ture as a feasible line of further research. An intriguing approach to cue analysis was in the possible difference between left and right sidedness of the expression of cues, and the possible increased perception of those cues if they were maneuvered into a receiver's more discriminating left field of vision. This approach focused on no specific non-verbal cues, yet selectively examined a possible channel through which cues were emitted. Stated specifically the research question was;

2. Does presentation of a deceiver on videotape in a reversed, left-or-right orientation in comparison to a normal orientation make a difference in the accuracy of detection of deception by untrained receivers?

Based on the review of literature it was difficult to make one-tailed predictions about the expected findings for these questions. It was expected, however, that there would be a main effect for warning, a main effect for sidedness, and an interaction for the best mode of identification of deception.

CHAPTER II

METHOD

Experimental Design

In this experiment the independent variables were (1) two levels of warning receivers of deception; warned, and unwarned, and (2) two levels of the sidedness of the deceiver's image on videotape; normal and reversed.

The dependent variable was the accuracy of detection of deception by untrained receivers as measured by a paper and pencil instrument.

Subjects were asked to view two identical videotaped interviews containing deception. The conditions imposed on the subjects were (1) warned-normal, (2) unwarned-normal, (3) warned-reversed, and (4) unwarned-reversed.

Due to the nature of the independent variables this experiment used a posttest only design.

Subjects

Deceivers for the videotaped interview were recruited from upper level students at the University of Montana. Three women and two men were initially recorded, and one mid-range deceiver, a 24

year old caucasian woman, was chosen by a group of judges.

Subjects for viewing the videotaped deception were a randomly assigned sample of 104 undergraduate students enrolled in Interpersonal Communication courses at the University of Montana. Subject mortality due to incomplete data, knowing the person on the tape, or being left handed reduced the sample to 17 subjects per condition for a total of 68. Of the 68 subjects, 47 were females and 21 were males. Ages ranged from 18 to 43 with the average age being 21.

Materials

Materials used in conjunction with deceptive subjects included personal fact sheets, information sheets, an interview schedule, interviewer's rating sheets, informed consent sheets, and judge's rating sheets (See appendix A).

The interviews were recorded in the University of Montana's Instructional Materials Service studio using a Sony AVC 4600 television camera with zoom lens for the normal image, and a Telemation TMC 2100V television camera with zoom lens for the reversed image. An internal polarity switch was adjusted to achieve the reversed image. The images were recorded in black and white on 3/4 inch cassette

tapes by two Sony Umatic 2600 videocassette decks. The black and white format was chosen for convenience after a review of the literature revealed no significant differences in deception judgments made on color or black and white presentations (Miller & Fontes, 1978). Cassettes were used because of ease of handling for presentation.

For presenting the interview to receivers, two 19 inch RCA XL-100 television monitors were used in conjunction with two Sony Umatic V0 1800 Videocassette playback units.

Materials used with the subjects who made judgments of deception included instruction sheets for the experiment's administrators, warned and unwarned instruction sheets, and a questionnaire packet (See appendix B). The questionnaire packet consisted of five scales modified from the McCroskey Interpersonal Attraction inventory, and four identical groups of seven semantic differential scales covering each of the four areas of the interview. Embedded in each of these groups was a single unweighted scale, Honest-Dishonest, that was used to measure detection of deception. Various forms of Honest-Dishonest scales have been used by previous researchers (Maier & Janzen, 1967; Maier & Thurber, 1968), and the present scale seemed to have face validity. The semantic

differential is reported as having high face validity and an overall test - retest reliability coefficient of .85 (Osgood, Suci, & Tannenbaum, 1957).

Procedure

Deceivers for the videotaped interview were asked upon recruitment to fill out a 25 item personal fact sheet covering four areas; family background, educational background, work experience, and social activities. With this information secured, each subject was given an information sheet which described the project as a study on professional interviewing techniques. It asked the subject to take part in a short videotaped interview and to be deceptive about two areas; family background and educational background. These two areas were typed onto the zeroxed sheet in such a way as to imply that they had been randomly assigned. In reality all subjects were assigned the same two areas. To add to this illusion the experimenter asked, after each subject had agreed to participate in the project, "Which areas did you draw?" The two areas were then marked on the personal fact sheet which each subject retained as an aid in preparing deceptive answers. It was felt that this nuance would add an element of competitive motivation for the subjects, and prevent

them from being overly concerned about the reasons for those two areas having been chosen.

The information sheets also told the subjects that the interviewer would be a professional who had no knowledge that they were being deceptive. The interviewer would, however, complete a 4 point Hire - Don't Hire scale after each interview based on the poise and confidence of the interviewee. The information sheet further stated that persons who did well on this scale tended to do well in their chosen profession, and that this was correlated to above average intelligence and emotional control. Each subject was then informed that he or she could withdraw from the project at any time. None of the five subjects recruited took this option.

Based on the literature a number of the elements in the information sheet were designed to induce or enhance deceptive/non-deceptive differences. These included the implied rating of intelligence and emotional control via the Hire - Don't Hire scores (Gustafson & Orne, 1963; Streeter et al., 1979, Ekman & Friesen, 1974), the areas chosen to be deceptive about - family background and educational background (Thackray & Orne, 1968a, 1968b; Cutrow et al., 1972, Matarazzo et al., 1972), and the tension of not knowing in which order the interviewer

would cover the four areas (Gustafson & Orne, 1964).

The deceptive subjects were given 3 to 4 days to prepare their dishonest backgrounds. When they arrived for the interview they were not introduced by name to the interviewer nor the interviewer to them. This was done to provide a degree of confidentiality for subjects and interviewers in later showings of the tape, and to avoid any receiver bias toward names. For further identification the deceivers' interviews were alphanumerically coded.

In order to keep the amount of time spent in honest and dishonest areas approximately the same, a standard interview schedule was used by the interviewer. The schedule covered the areas in the order of social activities (truthful), family background (lying), work experience (truthful), and educational background (lying), thus alternating honest and dishonest material. This gave approximately a 50% split of honest and dishonest material, a strategy used by other researchers (Miller & Fontes, 1978). In addition it allowed a sample of honest behavior to be seen before deceptive behavior in keeping with the general concept of the Lombardi two staged model of detection of deception (cited in Burgoon & Saine, 1978, pp. 268). The interview schedule was compiled from the personal fact sheet, taking care to exclude

items that would allow receivers to base their judgments on cross-referencing of material rather than immediate verbal and nonverbal cues. For example, someone with a major in biology (lying area) would probably not belong to a special interest group such as the National Accounting Society (truthful area) so the question about interest groups was eliminated.

Because of scheduling constraints two interviewers were used, a male and a female, both mature adults. Both had interviewing experience, and both were unaware that the subjects would be deceptive. They were told to follow the interview schedule, to maintain good eye contact, to refrain from verbal and nonverbal approval of answers, and to wait until the interviewee finished speaking before asking the next question.

After completing each interview they were asked to fill out the Hire - Don't Hire rating sheets which had been placed conspicuously on a small table nearby. This again was a motivational device for the benefit of the deceivers. Although the Hire - Don't Hire sheets were used for motivational purposes only, it is interesting to note that all deceptive subjects but one were rated in the "Consider further, probably hire" category. One deceiver was rated in the "Consider further, probably not hire" category. This

same deceiver was later rated the most nervous by a group of judges.

Deceivers in the interviews were simultaneously videotaped by two cameras aligned as closely as possible to the same optical axis, and matched as nearly as possible in image size and picture contrast. One camera recorded a normal image and the other camera recorded a left-for-right reversed image. The first deceptive subject was recorded in a medium shot covering the head and upper torso. Subsequent subjects were recorded in close up head shots due to a perceived lack of detail in the medium shot. This concept is further discussed in the Implications section of this study.

The interviewers sat as near as possible to the optical axis of the cameras. This positioning was such that slightly more of the left side of the deceivers' faces were presented to the cameras as they faced the interviewers. It was felt that this would give the sidedness variable full play if the left side dominated the reversed image.

The interviews began with an off-camera cue to the subject who then nodded to the interviewer as a cue to ask the first question. This was to allow a short silent image of the deceiver for the receivers' appraisal before the first question was answered.

The interviews ended when the interviewer said "thank you very much" and the subjects made a final reply. The interviews were approximately five minutes in length.

Immediately after the interview each deceptive subject was taken aside and given the informed consent sheet to read. A verbal debriefing followed which explained the independent variables and the motivational devices used to elicit deceptive/non-deceptive differences. Further, it was carefully explained to each subject that success does not always correlate with successful lying. Subjects were then asked to sign the consent form if they were agreeable to the use of their videotaped interview. Confidentiality of name was assured. All subjects were agreeable. The interviewers were debriefed in much the same fashion after all interviews were completed.

When the interviews were complete the verbal responses in each interview were checked against each subject's personal fact sheet to determine if they were in fact lying in the assigned deceptive areas. All did with these exceptions; subject A1 gave truthful responses to mother's occupation, father's schooling, and knowledge of foreign language; subject A2 responded truthfully to honors or awards received; subject A4 gave truthful responses to birthplace,

father's occupation, and one out of the three most interesting courses taken.

To choose a deceiver for final showing to experiment receivers, five judges consisting of graduate students in the Interpersonal Communication department at the University of Montana were recruited. They were asked to make holistic judgments about the amount of nervousness displayed by the deceivers in the four areas of the interview. Scores were based on 5 point scales for each area. The judges were not aware the deceivers were lying. The videotape with normal image was used as a matter of conservatism.

Nervousness scores for the two truthful areas were totaled and compared with the totaled scores for the two lying areas. The smaller sum was then subtracted from the larger sum to obtain a final score, with a plus value indicating more nervousness in the truthful areas and a minue value indicating more nervousness in the lying areas. It was reasoned that the use of a mid-range deceiver would be a realistic test of receivers' abilities to detect deception; too much nervousness would be patently obvious, too little nervousness would be unfairly severe. With the subjects ranging from a +1.9 to a -0.1, two mid-range deceivers with scores of 0 emerged (Table 1). Since one of these subjects,

A1, was recorded in medium shot, and had also given some truthful responses in lying areas, it was decided to use the mid-range deceiver, A5, recorded in a close up shot.

Table 1

| <u>Deceivers' Nervousness Scores</u> | |
|--------------------------------------|--------------|
| <u>Subject</u> | <u>Score</u> |
| A2 - male | +1.9 |
| A3 - male | +0.2 |
| A1 - female | 0 |
| *A5 - female | 0 |
| A4 - female | -0.1 |

+ = more nervous in truthful areas
 - = more nervous in lying areas
 * = chosen deceiver

Untrained receivers from several lower level Interpersonal Communication classes were recruited in class to view the deceptive material. In two separate sessions, 3 sections of a morning class and 2 sections of an afternoon class were assigned to two viewing conditions by counting off odd, even, odd, even. While assignment by a table of random numbers was preferable it was felt that the odd-even method offered greater assurance of equal N's per condition. The viewing rooms were the classrooms in which two of the sections were meeting. A week later a third group of subjects were recruited for an evening viewing session, and were assigned in a similar manner as they arrived. The first two sessions accounted for 99 subjects. The third ses-

sion had a high mortality rate, probably because it was an evening session at the end of the quarter, and accounted for only 5 subjects for a grant total of 104.

Since the independent variable of warning would seem in some cases to be linked to experimenter bias, two female assistants who were blind to the experimental variables were enlisted to administer the experiment to the first two sessions. Two different female assistants administered the experiment for the third session. Both sets of assistants were briefed together and given a short list of instructions to read or paraphrase in the administering of the experiment.

When the classes had been assigned to the viewing rooms, the assistants rolled cart-mounted television monitors and cassette playback decks into the rooms and plugged them into electrical outlets. The television monitors were adjusted prior to the showings for equivalence in playback volume, contrast, and brightness. The normal and reversed image tapes were both cued up so that a short period of black appeared on the screen before the first picture. This was to allow the playback units time to stabilize the images and not to start the interviews amid "roll-over" bars. All power controls were turned

on so that when the assistants plugged into the electrical outlets all that remained to be done was activate the start and stop buttons.

Once the television sets were in place, questionnaire packets were handed out face down. The subjects were instructed to read the first page only and then turn the packets face down again and look forward so the assistants would know when to start the tapes. All packets were identical except for the instruction sheets on the first page. Warned and unwarned instruction sheets were randomly assigned among the packets. The instruction sheets informed subjects that they were about to view a preliminary job interview over four areas, social activities, family background, work experience, and educational background, and that they would then fill out a questionnaire about the person's personality. In the unwarned condition the instruction sheets said that the person would be judged on such qualities as poise and confidence. The warned condition instruction sheets added that the person would be judged on honesty, and that the person might or might not be lying about any or all of the four areas. The instruction sheets then asked the subjects not to speak or convey their perception of the person to anyone else while viewing the presentation or filling

out the questionnaire.

After the videotaped interviews were shown the subjects were asked to turn to the second pages of their packets, fill in their name, age, sex, and year in school, read the instructions and complete the personality profile. When all subjects appeared to be finished the assistants asked that they make sure all information was filled out, including the last page. The last page asked if the subject knew the person on the videotape, and if the subject was right or left handed. It was reasoned that if a subject knew the deceiver's name, then the subject would likely know the deceiver was lying about various background areas. Consequently these subjects were eliminated from statistical analysis.

The literature on handedness indicates that left handed people tend to process visual material differently than do right handed people (Gilbert, 1973; Nebes, 1971; Buchsbaum & Fedio, 1970, 1969; Nebes & Briggs, 1974; Zurif & Bryden, 1969). In all conditions data from the left handed subjects was discarded so that the sidedness variable would not be contaminated. In one condition a full 20% of the subjects were left handed. While disregarding the data contributed to subject mortality, it did control for a confounding variable.

With the experimental session at a close, the subjects were thanked for their help and told that they would be debriefed at a later date. The packets were then collected and the subjects dismissed. In the first two experimental sessions the two assistants were assigned to both normal and reversed image viewing conditions in order to control for their attribute variables.

After all sessions had been run the subjects were verbally debriefed in their original classroom by the experimenter. The point was stressed that the deceiver on the tape had been lying at the request of the experimenter, and did not lie as a normal matter of course. The variables were explained and the subjects were assured of confidentiality. They were asked to keep confidential any information they felt they had learned about the deceptive subject. Since the subjects were told only that the deceiver had lied half the time, it was pointed out that any conclusions drawn about the person from the interview material might be erroneous. Experiment assistants were debriefed in much the same way.

Statistical Procedures

Since there were two independent variables, warning and sidedness of image, and four areas in

which deception judgments were scored, a two-way ANOVA was utilized to determine variance in each judgment area. As supplementary analysis a two-way ANOVA for repeated measures was computed over the four areas. Additional two-way ANOVA's were computed for the reliability scales and for the attraction scale.

CHAPTER III

RESULTS

One hundred and four subjects were randomly assigned to view a videotaped interview which contained two truthful and two lying areas. Four conditions were imposed; the subjects were warned or unwarned of deception and viewed normal and reversed image videotapes. Detection of deception judgments over the four areas of the interview were made via four Honest-Dishonest scales embedded in a questionnaire. Subject mortality due to incomplete data, knowing the name of the person on the tape, or being left handed reduced the subject sample to 68, or 17 N's per condition. For this study an Alpha level of .05 was set.

An Ulrich-Pitz two-way ANOVA was computed for each of the four interview areas using the Honesty scale scores. On the seven point scale Honest was anchored at 1, and Dishonest anchored at 7.

The first area covered in the interview, social activities, a truthful segment, the computed ANOVA found a significant main effect for the variable of warning ($F = 7.60$, $df = 1$, $p = .007$). Table 2 contains this data. An examination of the mean

scores (Table 3) for warning indicated that warned receivers saw the deceiver as less honest. A strength of association measure, Eta squared, indicated that 10% of the variance for the social activities area was explained by the significant warning variable.

Table 2

Two-way ANOVA for Social Activities
(truthful) - Honesty Scale

| Source | SS | df | MS | F |
|----------------|-------|----|------|-------|
| Warning | 9.19 | 1 | 9.19 | 7.60* |
| Sidedness | 0.37 | 1 | 0.37 | 0.30 |
| Warn X Side | 0.72 | 1 | 0.72 | 0.60 |
| Within (error) | 77.41 | 64 | 1.21 | |
| Total | 87.69 | | | |

*p < .05 (Eta² = .10)

Table 3

Mean Scores and Standard Deviations
for
Social Activities (truthful) - Honesty Scale

| | | Warned | Unwarned | |
|----------|-----------|--------|----------|-----------|
| Normal | | 2.41 | 1.88 | 2.14 |
| Image | <u>SD</u> | (1.00) | (0.70) | |
| Reversed | | 2.76 | 1.82 | 2.29 |
| Image | <u>SD</u> | (1.56) | (0.95) | |
| | | 2.59 | 1.85 | \bar{X} |

The Ulrich-Pitz two-way ANOVA for family background, a lying segment (Table 4), found no significant effects although the main effect for warning approached significance ($F = 3.45$, $df = 1$, $p = .06$). Table 5 contains the mean scores and standard deviations for this area.

Table 4
Two-way ANOVA for Family Background
(lying) - Honesty Scale

| Source | SS | df | MS | F |
|----------------|--------|----|------|------|
| Warning | 8.47 | 1 | 8.47 | 3.45 |
| Sidedness | 0.53 | 1 | 0.53 | 0.22 |
| Warn X Side | 0.00 | 1 | 0.00 | 0.00 |
| Within (error) | 157.06 | 64 | 2.45 | |
| Total | 166.06 | | | |

Table 5
Mean Scores and Standard Deviations
for
Family Background (lying) - Honesty Scale

| | | Warned | Unwarned | |
|----------|-----------|--------|----------|-----------|
| Normal | | 2.82 | 2.12 | 2.47 |
| Image | <u>SD</u> | (1.88) | (1.27) | |
| Reversed | | 2.65 | 1.94 | 2.29 |
| Image | <u>SD</u> | (1.77) | (1.25) | |
| | | 2.74 | 2.03 | \bar{X} |

The Ulrich-Pitz two-way ANOVA for work experience, a truthful segment (Table 6), indicated a significant main effect for the variable of warning ($F = 4.29$, $df = 1$, $p = .04$). An examination of the mean scores (Table 7) indicated that warned receivers saw the deceiver as less honest. The strength of association measure, Eta Squared, indicated that 6% of the variance for work experience was explained by the variable of warning.

Table 6

Two-way ANOVA for Work Experience
(truthful) - Honesty Scale

| Source | SS | df | MS | F |
|----------------|-------|----|------|-------|
| Warning | 5.31 | 1 | 5.31 | 4.29* |
| Sidedness | 0.13 | 1 | 0.13 | 0.11 |
| Warn X Side | 1.19 | 1 | 1.19 | 0.96 |
| Within (error) | 79.18 | 64 | 1.24 | |
| Total | 85.81 | | | |

* $p < .05$ ($\text{Eta}^2 = .06$)

Table 7

Mean Scores and Standard Deviations
for
Work Experience (truthful) - Honesty Scale

| | | Warned | Unwarned | |
|----------|-----------|--------|----------|-----------|
| Normal | | 2.24 | 1.94 | 2.09 |
| Image | <u>SD</u> | (1.03) | (0.96) | |
| Reversed | | 2.59 | 1.76 | 2.18 |
| Image | <u>SD</u> | (1.37) | (1.03) | |
| | | 2.41 | 1.85 | \bar{X} |

The Ulrich-Pitz two-way ANOVA for educational background, a lying segment (Table 8), indicated a significant main effect for the variable of warning ($F = 6.05$, $df = 1$, $p = .02$). An examination of the mean scores (Table 9) indicated that warned subjects saw the deceiver as less honest. The strength of association measure, Eta squared, indicated that 8% of the variance was accounted for by the warning variable.

Table 8

Two-way ANOVA for Educational Background
(lying) - Honesty Scale

| Source | SS | df | MS | F |
|----------------|--------|----|-------|-------|
| Warning | 10.72 | 1 | 10.72 | 6.05* |
| Sidedness | 0.13 | 1 | 0.13 | 0.08 |
| Warn X Side | 4.25 | 1 | 2.40 | 0.12 |
| Within (error) | 113.41 | 64 | 1.77 | |
| Total | 128.51 | | | |

*p < .05 ($\text{Eta}^2 = .08$)

Table 9

Mean Scores and Standard Deviations
for
Educational Background (lying) - Honesty Scale

| | | Warned | Unwarned | |
|----------|-----------|--------|----------|-----------|
| Normal | | 2.29 | 2.00 | 2.15 |
| Image | <u>SD</u> | (1.26) | (0.87) | |
| Reversed | | 2.88 | 1.59 | 2.24 |
| Image | <u>SD</u> | (1.90) | (1.06) | |
| | | 2.59 | 1.79 | \bar{X} |

As a supplementary analysis of data an Ulrich-Pitz two-way ANOVA for repeated measures was computed over all four areas of the interview (Table 10). A significant main effect was found for the variable of warning ($F = 11.39$, $df = 1$, $p = .002$). The mean scores (Table 11) again indicated that warned subjects saw the deceiver as less honest. The fact that there was no effect for repeated measures indicated that neither warned or unwarned subjects significantly discriminated between lying and truthful segments of the interview. Eta squared indicated that 7% of the variance was explained by the significant variable of warning.

Table 10
Two-way ANOVA repeated measures
Honesty Scales

| Source | SS | df | MS | F |
|----------------------------|--------|-----|-------|--------|
| Warning | 33.18 | 1 | 33.18 | 11.39* |
| Sidedness | 0.09 | 1 | 0.09 | 0.03 |
| Warn X Side | 4.00 | 1 | 4.00 | 1.38 |
| Repeated Meas. | 2.33 | 3 | 0.78 | 0.62 |
| Warn X Repeat | 0.51 | 3 | 0.17 | 0.14 |
| Side X Repeat | 1.07 | 3 | 0.36 | 0.28 |
| Warn X Side X Rep. | 2.16 | 3 | 0.72 | 0.57 |
| Within (error) | 186.38 | 64 | 2.91 | |
| Within (error) X Repeat | 240.68 | 192 | 1.25 | |
| Total | 470.41 | | | |

* $p < .05$ ($\text{Eta}^2 = .07$)

Table 11

Mean Scores for Repeated Measures
Honesty Scales

| | Social (truth) | Family (lying) | Work (truth) | Educ. (lying) | |
|---------------------------|-------------------|-------------------|-----------------|------------------|---------------------|
| Normal <u>WARNED</u> | 2.41 | 2.82 | 2.24 | 2.29 | 2.44 <u>2.58</u> |
| Reversed | 2.76 | 2.65 | 2.59 | 2.88 | 2.72 |
| Normal <u>UNWARNED</u> | 1.88 | 2.12 | 1.94 | 2.00 | 1.99 <u>1.88</u> |
| Reversed | 1.82 | 1.94 | 1.76 | 1.59 | 1.78 |
| | 2.22 | 2.38 | 2.13 | 2.19 | \bar{X} |

To determine the accuracy of deception judgments made by warned and unwarned subjects the responses on the seven point Honest-Dishonest scales were condensed (following Maier & Thurber, 1968) into three categories; Correct (steps 1, 2, 3 for truthful areas and steps 5, 6, 7 for lying areas), Undecided (midpoint of scale, step 4), and Incorrect (steps 5, 6, 7 in truthful areas and steps 1, 2, 3 in lying areas). This data is presented in percentage form in Table 12. The results indicated that warned subjects were less accurate than unwarned subjects in the two truthful areas, and more accurate in the two lying areas. Over all four areas the averaged accuracy of correct judgments was 47% for warned subjects and 48% for unwarned subjects. Warned subjects were

less incorrect at 40% than unwarned subjects at 46%. This is due to a greater percentage of uncertainty for warned subjects, 13%, as compared to 6% for unwarned subjects. The 47% and 48% accuracy of correct judgments for warned and unwarned subjects, respectively, did not exceed a chance accuracy of 50%.

As a validity check of the Honest-Dishonest scales, an Ulrich-Pitz two-way ANOVA for repeated measures (Table 13) was computed for a set of scales in the questionnaire that seemed to pay the same dimension, Reliable-Unreliable. The result was the same as for the Honest-Dishonest scales, a significant main effect was found for the variable of warning ($F = 5.36$, $df = 1$, $p = .02$). Again the mean scores (Table 14) indicated that the warned subjects found the deceiver less honest, and again the absence of a repeated measures effect indicated that both warned and unwarned subjects saw no significant difference between lying and truthful segments of the interview. The strength of association measure, Eta squared, indicated that 4% of the variance was explained by the significant warning variable.

Table 12

Accuracy of Judgments of Deception

| | CORRECT | | UNDECIDED | | INCORRECT | |
|-------------------|-----------------|-----------------|----------------|----------------|-----------------|-----------------|
| | warned S's | unwarned S's | warned S's | unwarned S's | warned S's | unwarned S's |
| SOCIAL (truth) | 71% (N = 24) | 97% (N = 33) | 20% (N = 7) | 3% (N = 1) | 9% (N = 3) | 0% (N = 0) |
| FAMILY (lying) | 20% (N = 7) | 6% (N = 2) | 9% (N = 3) | 6% (N = 2) | 71% (N = 24) | 88% (N = 30) |
| WORK (truth) | 82% (N = 28) | 85% (N = 29) | 12% (N = 4) | 12% (N = 4) | 6% (N = 2) | 3% (N = 1) |
| EDUC. (lying) | 15% (N = 5) | 3% (N = 1) | 12% (N = 4) | 3% (N = 1) | 73% (N = 25) | 94% (N = 32) |
| \bar{X} | 47% | 48% | 13% | 6% | 40% | 46% |

NB: All percentages rounded.

Table 13

Two-way ANOVA repeated measures
Reliability Scales

| Source | SS | df | MS | F |
|-------------------------|--------|-----|-------|-------|
| Warning | 15.06 | 1 | 15.06 | 5.36* |
| Sidedness | 0.00 | 1 | 0.00 | 0.00 |
| Warn X Side | 1.78 | 1 | 1.78 | 0.63 |
| Repeated Meas. | 6.19 | 3 | 2.06 | 2.08 |
| Warn X Repeat | 6.68 | 3 | 2.23 | 2.25 |
| Side X Repeat | 0.26 | 3 | 0.09 | 0.09 |
| Warn X Side X Repeat | 2.25 | 3 | 0.75 | 0.76 |
| Within (error) | 179.88 | 64 | 2.81 | |
| Within (error X Repeat) | 190.12 | 192 | 0.99 | |
| Total | 402.22 | | | |

*p < .05 ($\text{Eta}^2 = .04$)

Table 14

Mean Scores for Repeated Measures
Reliability Scales

| | Social (truth) | Family (lying) | Work (truth) | Educ. (lying) | |
|-----------------|-------------------|-------------------|-----------------|------------------|-------------|
| Normal | 2.35 | 3.00 | 2.29 | 2.64 | 2.57 |
| <u>WARNED</u> | | | | | <u>2.65</u> |
| Reversed | 2.47 | 2.88 | 2.70 | 2.88 | 2.74 |
| Normal | 2.29 | 2.41 | 2.35 | 2.00 | 2.26 |
| <u>UNWARNED</u> | | | | | <u>2.18</u> |
| Reversed | 2.35 | 2.41 | 2.00 | 1.64 | 2.10 |
| | 2.36 | 2.67 | 2.33 | 2.29 | \bar{X} |

A supplementary analysis of data was made to determine if perceived physical attractiveness of the deceiver was affected in any way by the independent variables. An Ulrich-Pitz two-way ANOVA was computed (Table 15) based on the 5 point physical attraction scale contained in the questionnaire. "Strongly agreeing" that the deceiver was attractive was anchored at 1 on the scale, and "Strongly disagreeing" was anchored at 5. A significant main effect was found for sidedness ($F = 4.96$, $df = 1$, $p = .03$). An examination of the mean scores (Table 16) indicated that the deceiver was seen as more attractive on the reversed image videotape. The strength of association measure, Eta squared, indicated that 7% of the variance was explained by the significant sidedness variable.

Table 15
Two-way ANOVA Physical Attraction

| Source | SS | df | MS | F |
|----------------|-------|----|------|-------|
| Warning | 0.13 | 1 | 0.13 | 0.37 |
| Sidedness | 1.78 | 1 | 1.78 | 4.96* |
| Warn X Side | 0.38 | 1 | 0.38 | 1.03 |
| Within (error) | 22.94 | 64 | 0.36 | |
| Total | 25.22 | | | |

* $p < .05$ ($\text{Eta}^2 = .07$)

Table 16
Mean Scores and Standard Deviations
for
Physical Attraction

| | | Warned | Unwarned | |
|-------------------|-----------|----------------|----------------|-----------|
| Normal Image | <u>SD</u> | 2.47 (0.62) | 2.53 (0.80) | 2.50 |
| Reversed Image | <u>SD</u> | 2.29 (0.59) | 2.06 (0.24) | 2.18 |
| | | 2.38 | 2.29 | \bar{X} |

Conclusion

In conclusion the statistical results of this study indicated that warned subjects saw the deceiver as significantly ($p < .05$) less honest than unwarned subjects in three areas of the videotaped interview; Social Activities (truthful), Work Experience (truthful), and Educational Background (lying). In the area of Family Background (lying) warned subjects approached a significant difference ($p = .06$) in rating the deceiver as less honest. Warned and unwarned subjects did not significantly differentiate between lying and truthful areas of the interview. On a percentage basis the warned subjects were slightly less accurate than unwarned subjects in making correct judgments of deception. Both warned

and unwarned subjects were less accurate in making correct judgments than a chance occurrence of 50%. The results from the Honest-Dishonest scale were duplicated by the results of a similar scale in the questionnaire, Reliable-Unreliable.

No significance was found for the sidedness variable in terms of accuracy of detection. The deceiver was perceived as significantly more attractive by subjects viewing the reversed image videotape.

CHAPTER IV

DISCUSSION

Summary

Based on a review of literature it was suggested that experiments on the accuracy of detection of deception may have biased the results by explicitly or implicitly forewarning the receivers of possible deception. Nonverbal cues have been shown to be important in detecting deception. The nonverbal literature also suggested that the left side of the face is more expressive, but that receivers tend to be more visually aware of the right side of the face. The present study examined the effects of warning and left and right expressiveness on the detection of deception. The following research questions were posited;

1. How accurate at detecting deception are untrained receivers who have been warned of possible deception in comparison with receivers who have not been warned?
2. Does presentation of a deceiver on videotape in a reversed, left-for-right orientation in comparison to a normal orientation make a difference in the accuracy of detection of deception by untrained receivers?

A 2 X 2 design was operationalized by showing normal and reversed videotapes of an interview containing two truthful and two lying areas to receivers

who were warned or unwarned of possible deception by questionnaire instruction sheets. Deception judgments were made by four Honest-Dishonest scales embedded in a "Personality Profile" questionnaire.

The following results were found for the research questions;

1. Warned receivers were not significantly more accurate than unwarned receivers in detecting deception. Warned receivers did rate the deceiver as significantly less honest than did unwarned receivers.
2. Presentation of a deceiver in normal and reversed orientation on videotape made no significant difference in accuracy of detection of deception by untrained receivers.

Discussion

By conservative statistical standards the results of the present study indicate that warning has no effect on accuracy of judgments of deception, but that warned subjects are more suspicious than unwarned subjects.

The deception literature offers little theoretical framework that relates directly to the warning variable since it falls into the realm of experimental bias, and has only been offered as a criticism of deception research (Knapp, 1978). Only the Lombardi two-staged model of detection of deception (cited in Burgoon & Sainè, 1978, pp. 268) seems relevant. In the first stage of the

model receivers are unsuspecting of deception until inconsistent cues from the sender elicit a decision to determine the truthfulness of the sender's messages. The receivers then enter the second stage of the model where continued monitoring of cues for deception takes place until additional deceptive cues motivate the receiver to confront, ignore, withdraw from, or modify the situation. The unwarned receivers in this study would assumably be in the first stage of the model, and the warned receivers in the second stage. Given these assumptions it might be expected that unwarned receivers would become suspicious and evolve into the second stage of the model, causing a shift of mean scores toward the Dishonest end of the scale. It might also be expected that warned receivers would demonstrate increased accuracy. Contrary to these expectations unwarned and warned receivers were unable to significantly differentiate between the lying and truthful segments of the interview as shown by a repeated measures ANOVA.

Previous findings in the areas of first impressions, stereotyping, and person perception (Burgoon & Saine, 1978; Rubin, 1973) would seem to be more relevant to the warning variable. Kelley (cited in Rubin, 1973, pp. 91) forewarned students of a "warm"

or "cold" temporary instructor by changing a single word in a brief biographical handout. Students rating the instructor after a short discussion session found him substantially more considerate, informal, sociable, popular, good-natured, and humane if they were told he was warm rather than cold. It is posited that this stereotyping effect took place in this study; warned subjects rating the deceiver as significantly less honest than unwarned subjects because they were informed that the person might be deceptive.

If heightened suspicion and not heightened accuracy is the only effect of warning, the argument that forewarning may have inflated the accuracy scores of previous studies seems questionable. The thrust of the argument would seem to revolve around the methods used to operationalize and measure the accuracy. In this study the warned subjects made fewer correct judgments and fewer incorrect judgments when the multistep scale was collapsed into correct, undecided, and incorrect categories. This was because heightened suspicion had the effect of shifting the scores of warned subjects into the undecided category. The biasing effect of warning on accuracy judgments initially measured in terms of a 2 point, correct-incorrect scale is difficult to predict and

deserves further investigation. Perhaps under this bipolar condition the effect of warning would emerge as a genuine form of experimental bias.

The accuracy of correct judgments by warned receivers was 47% and by unwarned receivers 48%, a figure that is below the 50% accuracy that could have occurred by chance. These percentages fall within the general range of 40% to 70% found by researchers investigating a variety of channels of presentation (Fay & Middleton, 1941; Maier & Thurber, 1968; Miller & Fontes, 1978). They compare quite closely with the recent findings of Miller and Fontes (1978) in a detection of deception study involving live, videotape, audio tape, and transcript modes of presentation of deceptive material. The accuracy of their untrained subjects in the videotape mode was 46.7%. The suggestion of Miller and Fontes (1978) that it is highly questionable whether untrained receivers can accurately detect deception on the part of strangers would seem to be reaffirmed by the present results.

Limitations and Implications

The suggestion that warning has little effect on accuracy of detection of deception should be tempered by several considerations. Although sub-

ject's scores covered the full range of the scale, 1 to 7, the mean scores of both warned and unwarned subjects fell at the Honest end of the scale, never reaching past a 3, much less approaching the neutral or undecided midpoint of the scale at 4. This could have been due to; (1) an uncontrollable variable within the subjects such as a general tendency to rate high because of low involvement with the experiment, or a desire to be "nice", (2) perceived attributes of the deceiver such as position (Resident Assistant at the university), or other variables associated with a high degree of honesty, or (3) a mode of presentation which reduced cues to deception, therefore influencing the honesty rating.

While the first two considerations have validity, they are difficult to prove or disprove; the latter consideration, however, was a perceived problem during the procedural stage of the experiment. The deceiver was presented in a close up head shot, eliminating body cues receivers have reportedly used in some studies to make more accurate judgments (Ekman & Friesen, 1974; McClintock & Hunt, 1975). Conversely, Miller and Fontes (1978) have indicated that deceptive emotional material is most accurately detected through the body, but that deceptive factual material is more accurately detected through the

head and body. Since the interview in this study consisted of factual material the close up head shot was chosen as a compromise to the sidedness variable. Only head shots were used in the pertinent expressiveness study (Sackeim et al., 1978) and it was felt that the lack of detail in a head and body shot on videotape would dilute the sidedness variable too much.

Although the image size of the deceiver replicated that used by Sackeim et al. (1978), the sidedness variable in this study proved non-significant. Three limiting factors can be suggested. The first is conceptual in nature. Previous sidedness, expressiveness, and handedness studies based the subjects' judgments on posed still photographs or projected slides (Sackeim et al., 1978; Ekman & Friesen, 1975; Gilbert, 1973; Buchsbaum & Fedio, 1969, 1970; Zurif & Bryden, 1969). Perhaps subjects' abilities to discriminate deceptive cues were reduced by the fleeting nature of expressions presented through the medium of videotape. The findings of researchers (Ekman & Friesen, 1975; Haggard & Isaacs, cited in Swensen, 1973, pp. 106) that there were micro-momentary facial expressions on the order of $1/5$ to $1/25$ of a second, supposedly too quick to be apparent in a motion picture run at normal speed, lends some cre-

dence to this possibility. Rosenthal et al. (1979) indicate, however, that in their PONS test (Profile of Nonverbal Sensitivity) correct judgments of emotion much greater than chance accuracy have been made for one-frame clips of projected motion pictures, a speed of 1/24 of a second, and that this accuracy increases dramatically when the clips are expanded to 3 frames or 1/8 of a second. This accuracy increase is considered to be the result of added motion or longer visual access or a combination of both.

The second limiting factor of the sidedness variable in this study was the need for the deceiver to face the interviewer, thus presenting more of one side of the face to the television cameras. A symmetrical head on shot was more desirable, but then the deceiver would not have had eye contact with the interviewer. Altered eye gaze patterns are supposedly an indication of deception (Knapp et al., 1974; McClintock & Hunt, 1975), and the elimination of this potential source of cues was considered too detrimental to the warning variable. Also, the unnaturalness of speaking directly to a camera while answering a live interviewer nearby could conceivably have caused the deceptive sender to emit spurious cues.

The third perceived limitation to the sidedness

variable was the use of two cameras to record normal and reversed images. Although care was taken to match the two separate images a slight difference in resolution of detail, contrast, and image size was apparent. The fact that receivers found the deceiver significantly more attractive on the reversed image videotape is probably due to this discrepancy in camera images and not a true sidedness difference.

While videotape was chosen for this project because of convenience and economy, it is suggested that any future research using the sidedness variable might eliminate the two camera image difference by the use of motion picture film. Double perforated film can be physically flipped over and refocused in a projector, thus showing the same image both normally and reversed. A double banded interlock projector would allow playback of a synchronous magnetic sound track with both images. Moreover, the sharper detail and larger projected image size of film should allow the use of a head and body shot, giving the body cues of deception a chance to influence accuracy judgments while still retaining the potential for sidedness differences.

The present study examined the ability of untrained receivers to detect deception. A variable which was believed to inflate accuracy scores, warn-

ing, was proved non-significant for increased accuracy. In a practical setting of employment interviewing, or other fact gathering situation, this finding suggests that knowing precisely what to look for is more important than merely being "on guard" and trusting in folk lore about how liars behave. Perhaps a more productive approach to the problem of human detection of deception lies in recognition training. Research directed toward comparisons of receivers differentially trained to be aware of eye gaze patterns, verbal patterns, or body movements, for instance, would presumably reveal the group of deception cues that are most recognizable by, and available to, the average person. The knowledge gained would hopefully increase the rather low accuracy rates presently reported by deception researchers.

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APPENDIX A

Deceiver Materials

PERSONAL DATA SHEET

Name _____

(will remain confidential)

Family Background

1. Birthdate _____ 2. Birthplace _____

3. What parts of the U.S.A. have you lived in? _____

4. Where did your grandparents and parents come from? _____

5. Numbers of brothers _____ 6. Number of sisters _____

7. Mother's occupation _____ 8. Father's occupation _____

9. Parent's education _____

Educational Background

10. What is your major? _____

11. What is your minor? _____

12. What courses have you found most interesting?

(name three) _____

13. Do you speak or write a foreign language? _____

14. Honors, awards, or scholarships received? _____

15. How many universities have you attended? _____

Work Experience

16. Most recent employer? _____

PERSONAL DATA SHEET
(continued)

17. Title of your position? _____

18. Description of your responsibilities? _____

19. What job skills do you have that are pertinent to
your major field of study? _____

20. What is the most interesting job you've had? _____

Social Activities

21. What are your hobbies? _____

22. What sports do you enjoy? _____

23. What kind of music do you enjoy most? _____

24. What type of literature do you read for enjoyment? _____

25. What organizations or special interest groups are
you involved in? _____

INFORMATION SHEET

You are being asked to take part in a project to determine how effective certain professional interviewing techniques are. Factors such as the order in which key information areas are covered, the time spent in each area, and attitudes toward interviewee nervousness will be examined.

If you agree to take part in this project you will participate in a videotaped interview of approximately ten minute duration.

Participants are being asked to be deceptive about the four areas you have just covered in the personal fact sheet - family background, educational background, work experience, and social activities.

You have been assigned to the group that will be deceptive about FAMILY BACKGROUND AND EDUCATIONAL BACKGROUND.

The person interviewing you will have absolutely no knowledge that you might be deceptive. He is a professional interviewer and has been told only to mark a recommendation sheet based on the poise, confidence, and general presentational style of the interviews. The recommendation sheet has four categories: (1) Hire (2) Consider further, probably hire (3) Consider further, probably not hire, and (4) Don't hire.

Research in similar projects has indicated that persons who are ranked in the "hire" or "consider further, probably hire" categories, no matter in how many areas they have been deceptive, tend to do well in their chosen professions. This is generally correlated, along with other factors, to above-average intelligence and ability to control emotions.

When the videotaped interview begins the interviewer may cover the four areas in any order he wishes. He may probe in one area and skim over another at his choice. Be prepared to talk about the four areas at random and at some depth in each.

To ensure accuracy for the project you must make all answers totally fictitious in assigned deception areas, and totally truthful in the remaining areas. Both deceptive and honest answers will be checked against your personal data sheet.

You may choose to withdraw from the project at any time.

SUBJECT _____

1. _____ HIRE
2. _____ CONSIDER FURTHER, PROBABLY HIRE
3. _____ CONSIDER FURTHER, PROBABLY NOT HIRE
4. _____ DON'T HIRE

INTERVIEWER _____

INTERVIEW SCHEDULE

LET'S TALK ABOUT YOUR SOCIAL ACTIVITIES . . .

1. What are your hobbies?
2. What sports do you enjoy?
3. What kind of music do you enjoy most?
4. What type of literature do you read for enjoyment?

I SEE, NOW YOUR FAMILY BACKGROUND . . .

1. Where were you born?
2. How many brothers and sisters do you have?
3. What is your mother's education and her present occupation?
4. What is your father's education and occupation?

NOW I'D LIKE TO ASK ABOUT YOUR WORK EXPERIENCE. . . .

1. Who was your most recent employer?
2. What service or product did they offer?
3. What were your job responsibilities there?
4. What is the most interesting job you've had?

LET ME ASK YOU NOW ABOUT YOUR EDUCATIONAL BACKGROUND.

1. What is your college major?
2. Which three courses have you found the most interesting?
3. Do you speak or write any foreign languages?
4. Have you received any honors, awards, or scholarships in your college career?

THANK YOU VERY MUCH.

MAINTAIN GOOD EYE CONTACT.

DON'T NOD HEAD OR GIVE OTHER NONVERBAL APPROVAL OF ANSWERS.

DON'T GIVE VERBAL APPROVAL SUCH AS "GOOD", "FINE", OR "ALRIGHT".

DON'T OVERLAP THEIR ANSWERS WITH YOUR QUESTIONS - GIVE THEM TIME TO FINISH.

INFORMED CONSENT

You have just completed a videotaped interview designed to intensify the verbal and nonverbal differences between lying and truthful answers. Several elements were intentionally used to produce nervous tension. These include the areas chosen for deceptive replies - family and educational backgrounds, not knowing in which order the areas would be covered, and the implied ratings of intelligence and emotional control by the "hire - don't hire" scale. There is little or no research supporting the concept that lying is an indicator of success. If you are not a "good liar" do not feel that you are not intelligent or poised.

With your consent the videotaped interview will be reviewed by a group of judges and possibly selected to test the accuracy of forewarned and unwarned subjects in detecting deception.

The videotaped image will be presented in both normal and reversed versions to determine if the left or the right visual field of subjects is more sensitive to facial and body cues that indicate deception.

Your name will not be revealed to any of the

INFORMED CONSENT (continued)

subjects in this project, or used in any written report about the project. It will be carefully explained to all subjects at the completion of their testing that you were required to lie as part of the experiment, and that any information gathered from the interview is confidential, and perhaps untruthful.

This research will benefit knowledge of detection of deception and of the perception of nonverbal cues. A summary of the procedures and outcome of this project will be made available at your request.

In the event physical injury results from biomedical or behavioral research the human subject should individually seek appropriate medical treatment and shall be entitled to reimbursement or compensation consistent with the self insurance program for Comprehensive General Liability established by the Department of Administration under authority of Title 82, Chapter 43, RMC 1947 or by satisfaction of the claim or judgment by the means provided by RCM 1947 Section 82-4325. In the event of a claim for such physical injury further information may be obtained from the University Legal Counsel.

INFORMED CONSENT (continued)

I have read and understand the above statements.
I agree to allow the use of the videotaped inter-
view containing my image and words for the purposes
of this project. I understand that I am free to
withdraw consent for the use of my image and words
at any time.

Name

Date

Witness

RATING SHEET

Subject _____

AMOUNT OF NERVOUSNESS

SOCIAL ACTIVITIES (Hobbies,
sports, music, literature)

1. None at all
2. Slightly
3. Somewhat
4. A great deal
5. Totally

FAMILY BACKGROUND (Birthplace,
siblings, parents' education, etc.)

1. None at all
2. Slightly
3. Somewhat
4. A great deal
5. Totally

WORK EXPERIENCE (Recent employer,
job responsibilities)

1. None at all
2. Slightly
3. Somewhat
4. A great deal
5. Totally

EDUCATIONAL BACKGROUND (College
major, courses, honors & awards)

1. None at all
2. Slightly
3. Somewhat
4. A great deal
5. Totally

APPENDIX B

Receiver Materials

INSTRUCTIONS

1. I'm going to pass the questionnaires out.
Please read carefully the first page only and then turn the packet face down on the desk so I'll know when everyone is finished. (When they appear ready.) Everyone ready?
2. START AND STOP TAPE.
3. Please turn to the second page of your packet, fill in your name, age, sex, and year in school, read the instructions and complete the questionnaire.
4. (When all appear to be finished.) Please be sure you've filled out all information including the last page. Thank you for your help. You will be debriefed about this project at a later date. You may return to your own classroom.
5. COLLECT PACKETS

INSTRUCTIONS

You are about to view a short videotape presentation of a person in a preliminary job interview. They will be answering questions about four areas:

1. SOCIAL ACTIVITIES (Hobbies, sports, music, literature)
2. FAMILY BACKGROUND (Birthplace, number of siblings, parents' education & occupation)
3. WORK EXPERIENCE (Recent employer, services or products offered, job responsibilities)
4. EDUCATIONAL BACKGROUND (College major, interesting courses, foreign languages, honors or awards)

After viewing the presentation you will fill out a questionnaire about the person's personality. The person will be judged on such qualities as poise and confidence.

Please do not speak or otherwise convey your perception of the person to anyone else while viewing the presentation or filling out the questionnaire.

INSTRUCTIONS

You are about to view a short videotape presentation of a person in a preliminary job interview. They will be answering questions about four areas:

1. SOCIAL ACTIVITIES (Hobbies, sports, music, literature)
2. FAMILY BACKGROUND (Birthplace, number of siblings, parents' education & occupation)
3. WORK EXPERIENCE (Recent employer, services or products offered, job responsibilities)
4. EDUCATIONAL BACKGROUND (College major, interesting courses, foreign languages, honors or awards)

After viewing the presentation you will fill out a questionnaire about the person's personality. In addition to such qualities as poise and confidence, the person will be judged on honesty. The person may or may not be lying about any or all of the four areas.

Please do not speak or otherwise convey your perception of the person to anyone else while viewing the presentation or filling out the questionnaire.

NAME* _____ SEX _____

OCCUPATION _____ AGE _____
(if student, state year)

* All data will be treated confidentially.

PERSONALITY PROFILE

Please read carefully:

This is not a test. There are no "right" or "wrong" answers.

We are interested in your personal response to each of the scales.

For this general overview section please circle the number underneath the scale position you think appropriate. Only one position should be checked on any scale, but please check all scales.

| | <i>Strongly Agree</i> | <i>Agree</i> | <i>Undecided</i> | <i>Disagree</i> | <i>Strongly Disagree</i> |
|--|---------------------------|--------------|------------------|-----------------|------------------------------|
| 1. I think the person is physically attractive. | 2 | 1 | 0 | 1 | 2 |
| 2. I could never become a friend of this person. | 2 | 1 | 0 | 1 | 2 |
| 3. I would have confidence in this person's ability to get a job done. | 2 | 1 | 0 | 1 | 2 |
| 4. I think this person is above average intelligence. | 2 | 1 | 0 | 1 | 2 |
| 5. This person would be a poor problem solver. | 2 | 1 | 0 | 1 | 2 |

PLEASE READ CAREFULLY

In the following sections on specific feelings there are seven steps to each scale, ranging from "extremely" at each end to "quite" to "slightly" to "undecided" in the middle. For example, if you consider the concept to be extremely strong or weak you should place an X as follows;

STRONG X : _____ : _____ : _____ : _____ : _____ : _____ WEAK

or

STRONG _____ : _____ : _____ : _____ : _____ : _____ : X WEAK

If you consider the concept to be neutral, completely unrelated, or you are undecided then place your X in the middle space:

FAIR _____ : _____ : _____ : X : _____ : _____ : _____ UNFAIR

IMPORTANT ! Place your X's in the spaces, not on the boundaries;

| | |
|----------------|--------------|
| This | Not This |
| <u> X </u> : | _____ : X |

Use only one check mark per scale, but mark each scale.

PLEASE READ CAREFULLY

In the following sections on specific feelings there are seven steps to each scale, ranging from "extremely" at each end to "quite" to "slightly" to "undecided" in the middle. For example, if you consider the concept to be extremely strong or weak you should place an X as follows;

STRONG X : : : : : : WEAK

or

STRONG : : : : : : X WEAK

If you consider the concept to be neutral, completely unrelated, or you are undecided then place your X in the middle space:

FAIR : : : X : : : UNFAIR

IMPORTANT ! Place your X's in the spaces, not on the boundaries;

| | |
|----------------|----------------------------|
| This | Not This |
| <u> X </u> : | <u> </u> <u> X </u> |

Use only one check mark per scale, but mark each scale.

1. When the person spoke about SOCIAL ACTIVITIES (Hobbies, sports, music, literature) did you feel the person was

PLEASANT _____:_____:_____:_____:_____:_____:_____ UNPLEASANT

UNCERTAIN _____:_____:_____:_____:_____:_____:_____ CERTAIN

CONFIDENT _____:_____:_____:_____:_____:_____:_____ NERVOUS

DULL _____:_____:_____:_____:_____:_____:_____ DYNAMIC

HONEST _____:_____:_____:_____:_____:_____:_____ DECEPTIVE

SUBMISSIVE _____:_____:_____:_____:_____:_____:_____ AUTHORITATIVE

RELIABLE _____:_____:_____:_____:_____:_____:_____ UNRELIABLE

2. When the person spoke about FAMILY BACKGROUND (Birthplace, number of siblings, parents' education and occupation) did you feel the person was

PLEASANT _____:_____:_____:_____:_____:_____:_____ UNPLEASANT

UNCERTAIN _____:_____:_____:_____:_____:_____:_____ CERTAIN

CONFIDENT _____:_____:_____:_____:_____:_____:_____ NERVOUS

DULL _____:_____:_____:_____:_____:_____:_____ DYNAMIC

HONEST _____:_____:_____:_____:_____:_____:_____ DECEPTIVE

SUBMISSIVE _____:_____:_____:_____:_____:_____:_____ . AUTHORITATIVE

RELIABLE _____:_____:_____:_____:_____:_____:_____ UNRELIABLE

3. When the person spoke about WORK EXPERIENCE (Recent employer, services or products offered, job responsibilities) did you feel the person was

PLEASANT _____:_____:_____:_____:_____:_____:_____ UNPLEASANT

UNCERTAIN _____:_____:_____:_____:_____:_____:_____ CERTAIN

CONFIDENT _____:_____:_____:_____:_____:_____:_____ NERVOUS

DULL _____:_____:_____:_____:_____:_____:_____ DYNAMIC

HONEST _____:_____:_____:_____:_____:_____:_____ DECEPTIVE

SUBMISSIVE _____:_____:_____:_____:_____:_____:_____ AUTHORITATIVE

RELIABLE _____:_____:_____:_____:_____:_____:_____ UNRELIABLE

4. When the person spoke about EDUCATIONAL BACKGROUND (College major, interesting courses, foreign languages, honors or awards) did you feel the person was

PLEASANT _____ : _____ : _____ : _____ : _____ : _____ : _____ UNPLEASANT

UNCERTAIN _____ : _____ : _____ : _____ : _____ : _____ : _____ CERTAIN

CONFIDENT _____ : _____ : _____ : _____ : _____ : _____ : _____ NERVOUS

DULL _____ : _____ : _____ : _____ : _____ : _____ : _____ DYNAMIC

HONEST _____ : _____ : _____ : _____ : _____ : _____ : _____ DECEPTIVE

SUBMISSIVE _____ : _____ : _____ : _____ : _____ : _____ : _____ AUTHORITATIVE

RELIABLE _____ : _____ : _____ : _____ : _____ : _____ : _____ UNRELIABLE

PLEASE SUPPLY THE FOLLOWING DATA

Do you know the name of the person on the videotape?

YES _____ NO _____

Are you Left handed? _____ or Right handed? _____