

Telling Lies

Bella M. DePaulo and Robert Rosenthal
Harvard University

Men and women (20 each) were videotaped while describing someone they liked, someone they disliked, someone they were ambivalent about, someone they were indifferent about, someone they liked as though they disliked him or her, and someone they disliked as though they liked him or her. Accuracy at detecting that some deception had occurred was far greater than accuracy at detecting the true underlying affect, and people who were good at detecting that deception was occurring were not particularly skilled at reading the speakers' underlying affects. However, people whose deception attempts were more easily detected by others also had their underlying affects read more easily. Speakers whose lies were seen more readily by men also had their lies seen more readily by women, and observers better able to see the underlying affects of women were better able to see the underlying affects of men. Skill at lying successfully was unrelated to skill at catching others in their lies. A histrionic strategy (hamming) was very effective in deceiving others, and this strategy was employed more by more Machiavellian people, who also tended to get caught less often in their lies. Methodological considerations and systematic programs for future research are discussed.

Studies of skill at detecting lies from verbal and/or nonverbal cues usually focus on observers' ability to distinguish truthful responses from deceptive ones (e.g., Ekman & Friesen, 1974; Fay & Middleton, 1941; Harrison, Hwalek, Raney, & Fritz, 1978; Kraut, 1978; Littlepage & Pineault, 1978; Maier & Janzen, 1967; Maier & Thurber, 1968; Zuckerman, DeFrank, Hall, Larrance, & Rosenthal, in press; Krauss, Geller, & Olson, Note 1). Most published studies of

We thank Russell A. Eisenstat and Susan Finkelstein for their help in collecting these data, and Judith A. Hall, Charles M. Judd, and Miron Zuckerman for their helpful comments on an earlier version of this manuscript.

Preparation of this article was supported by the Milton Fund of Harvard University, Biomedical Sciences Support Grant 5S07 RR07046-12 from the National Institutes of Health to Harvard University, and the National Science Foundation. During the conduct of this research, the first author was supported by a National Science Foundation Fellowship.

Requests for reprints should be sent to Bella M. DePaulo, who is now at the Department of Psychology, Gilmer Hall, University of Virginia, Charlottesville, Va. 22901.

human lie detection have found that people are substantially more accurate than chance at distinguishing veracity from mendacity (Fay & Middleton, 1941; Feldman, 1976; Harrison et al., 1978; Kraut, 1978; Littlepage & Pineault, 1978; Maier, 1966; Maier & Janzen, 1967; Maier & Thurber, 1968; Matarazzo, Wiens, Jackson, & Janaugh, 1970; Zuckerman et al., in press; see also DePaulo, Zuckerman, & Rosenthal, in press).

Discerning the degree of deceptiveness of a given response, however, is only one of several senses in which one might be said to be skilled at detecting a lie. In the case of a lie that involves the cloaking of a felt emotion with a feigned one, for example, skill at detecting the lie might be conceptualized as the ability to see through to the underlying affect that the deceiver is trying to hide. Using Ekman and Friesen's (1969) terms, this latter skill (identifying the concealed information) will be called *leakage* accuracy, whereas the former (recognizing that deception is or is not occurring) will be labeled *deception* accuracy. Although it might seem quite plausible that people who are especially good at detecting deceptiveness

will also be particularly skilled at reading leakage, this empirical question has not yet been addressed.

Two-tiered lies, in which an underlying or "true" affect is covered up by a dissimulated or "sent" affect, come in many varieties. For instance, they may involve the covering up of a positive emotion with a negative one or the covering up of a negative emotion with a positive one. In the few studies that have examined these kinds of lies (Ekman & Friesen, 1969, 1974; Feldman, 1976), the liars were always attempting to send positive cues. In the Ekman and Friesen (1974) study, for instance, nurses watching a very disconcerting film pretended to be watching a very pleasant one; in Feldman's study, teachers either liked or disliked a student who had performed either well or poorly, but in all conditions teachers were instructed to give only positive feedback to the student. We cannot know from these studies whether skill at detecting these sugar-coated lies (in which the feigned affect is positive) is related to skill at detecting lies in which the dissimulated affect is negative.

Paralleling our lack of knowledge about the generality of skills at detecting different kinds of lies is a lack of knowledge about the generality of skills at decoding different kinds of liars. For instance, are people who are especially skilled at identifying deceptiveness in women also particularly successful in recognizing deceptiveness in men?

The same kinds of questions that are asked about people trying to detect lies can also be asked about people who are attempting to spread lies. That is, are those persons who are especially adept at hiding their attempts at deception also especially successful at concealing their true feelings? Are people who are especially good at hiding an underlying positive affect also particularly skilled at hiding an underlying negative affect? Are people who are particularly transparent to women also especially transparent to men? Finally, are people who are good liars also good lie-detectors; that is, does it take one to know one?

To study these and other questions, we asked subjects to describe several people whom they knew: someone they liked, some-

one they disliked, someone they felt ambivalent about, and someone they felt indifferent about. To elicit deception, we asked them to describe the liked person while pretending that they really disliked him or her, and we also asked them to describe the disliked person while pretending that they really liked him or her. Thus, the design included underlying positive affect covered by feigned negative affect and underlying negative affect covered by feigned positive affect. It also included "pure" positive affect (liking), "pure" negative affect (disliking), and simultaneously occurring positive and negative affect (ambivalence). We asked the same subjects to return to judge these various descriptions. We believe that this paradigm, in which the observer is called upon to discriminate among a wide variety of affects, is more valid ecologically than is the scenario characteristic of most deception studies, in which the subject is asked merely to decide whether the speaker is lying or telling the truth.

This design also permitted us to study a particular style of lying—one that we call *hamming*. We think that a reasonable operational definition of a ham is someone who when pretending to like someone he or she actually dislikes, expresses *more* liking than when describing a person he or she really does like. Another kind of ham is one who exaggerates dissimulated disliking—that is, one who expresses more disliking when pretending to dislike someone he or she actually likes than when describing someone he or she really does dislike.

We wanted to know several things about this style of lying:

1. How common is this hamming strategy?
2. Is there really just one kind of ham, or might there be at least two? That is, are the people who exaggerate liking the same people who exaggerate disliking?
3. Does hamming work? That is, do people who ham it up get caught in their lies less frequently than those who use a less exaggerated style? Conceivably, hamming could backfire if an observer got the impression that the speaker "doth protest too much."

Because Machiavellianism is commonly thought to be linked to success at lying—

and in one study (Exline, Thibaut, Hickey, & Gumpert, 1970) has in fact been shown to be so related—we administered the Mach scale (Christie & Geis, 1970) to all of our subjects.

Method

Subjects

Subjects were 40 Harvard summer school students (20 males and 20 females) recruited for a study of "person descriptions" and paid for their participation.

Procedure

Subjects were asked to take 1 minute to describe each of the following persons: someone they liked, someone they disliked, someone they felt ambivalent about, and someone they felt indifferent about. (Ambivalence was defined as strong feelings of both liking and disliking; indifference was defined as no strong feelings of liking or disliking.) To elicit deception, subjects were also asked to describe the person they liked as if they really disliked him or her (like-as-though-dislike or LD condition) and to describe the person they disliked as if they really liked him or her (dislike-as-though-like or DL condition). These six descriptions were given in one of nine different orders (randomly assigned). Half of the subjects (10 males and 10 females, randomly assigned) described males; the others described females.

During the sessions, the experimenter remained behind a one-way mirror and videotaped the descriptions. Subjects were aware of this, and also knew that the experimenter was not informed of the sequence of their descriptions. They were urged to try to be very convincing in all of their descriptions.

From these descriptions, two hour-long videotapes were made, composed of the middle 20 sec of each description, plus rating pauses. The order of appearance of the senders on these tapes was randomized. (Only the middle 20 sec were used to keep the rating task—described below—to a more manageable length.) All subjects returned to judge one of these videotapes. Subjects always judged a videotape on which they did not appear. Subjects saw the videotape they were judging twice: the first time, they rated the descriptions on 9-point scales of liking, ambivalence, and deception; the second time, they rated the descriptions on 9-point scales of disliking, discrepancy, and tension.¹

Accuracy Scores

An accurate decoder of deception would rate the deceptive descriptions as very deceptive and the

pure like and dislike descriptions as not very deceptive at all. Thus, deception accuracy was defined as a subject's mean deception rating of the like-as-though-dislike and dislike-as-though-like descriptions minus their mean deception rating of the pure like (L) and dislike (D) descriptions. Separate subscores were computed analogously for the LD and DL descriptions and for the decoding of male and female speakers.

Overall deception accuracy

$$= \frac{\text{deception ratings of LD} + \text{DL}}{2}$$

$$- \frac{\text{deception ratings of L} + \text{D}}{2}$$

Deception accuracy for LD

$$= \frac{\text{deception ratings of LD}}{\text{deception ratings of L}}$$

$$- \frac{\text{deception ratings of D}}{\text{deception ratings of L}}$$

Deception accuracy for DL

$$= \frac{\text{deception ratings of DL}}{\text{deception ratings of D}}$$

$$- \frac{\text{deception ratings of L}}{\text{deception ratings of D}}$$

Accuracy of encoding deception was defined analogously. A speaker whose lies were easily detected would be rated as very deceptive in the LD and DL conditions but not very deceptive at all in the liking or disliking conditions. Thus the encoding deception score was defined as the mean deception rating (by all judges who rated the speaker) of the LD and DL descriptions minus the mean deception rating of the pure like and dislike descriptions. Separate subscores were computed analogously for LD and DL and for judgments made by male and female observers.

Overall deception accuracy

$$= \frac{\text{rated deception on LD} + \text{DL}}{2}$$

$$- \frac{\text{rated deception on L} + \text{D}}{2}$$

Deception accuracy for LD

$$= \frac{\text{rated deception on LD}}{\text{rated deception on L}}$$

$$- \frac{\text{rated deception on L}}{\text{rated deception on L}}$$

Deception accuracy for DL

$$= \frac{\text{rated deception on DL}}{\text{rated deception on D}}$$

$$- \frac{\text{rated deception on D}}{\text{rated deception on D}}$$

A judge more skilled at seeing underlying affects (decoding leakage) would rate a speaker pretending to like someone she/he actually disliked as disliking

¹ Scale endpoints were labeled as follows: speaker does not like (dislike) the person at all (1), speaker likes (dislikes) the person very much (9); speaker is not very ambivalent (deceptive, discrepant, tense) (1), speaker is very ambivalent (deceptive, discrepant, tense) (9). Discrepancy was defined as the simultaneous communication of several different emotions.

the person relatively more than liking him or her. Similarly, a more accurate decoder of leakage would see relatively more liking than disliking in the LD descriptions. Thus, LD accuracy was defined as a subject's mean liking rating of the LD descriptions minus his or her mean disliking rating of those descriptions; for DL, liking was subtracted from disliking. These scores were also computed separately for judgments of male and female speakers.

Leakage accuracy for LD

$$= \text{liking ratings of LD} \\ - \text{disliking ratings of LD};$$

Leakage accuracy for DL

$$= \text{disliking ratings of DL} \\ - \text{liking ratings of DL}.$$

Encoding leakage (or betraying one's own true feelings) was defined as follows: for LD, the mean of judges' disliking ratings was subtracted from the mean of their liking ratings; for DL, liking was subtracted from disliking. Subscores were computed for judgments made by male and female judges.

Leakage accuracy for LD

$$= \text{rated liking on LD} \\ - \text{rated disliking on LD};$$

Leakage accuracy for DL

$$= \text{rated disliking on DL} \\ - \text{rated liking on DL}.$$

Hamming

A person who hams in the DL condition expresses greater liking of the truly disliked person (whom he or she is pretending to like) than of the truly liked person. Thus, ham like was defined as judges' mean liking rating of a speaker's DL description minus their mean liking rating of that speaker's true or pure *like* description. Analogously, "ham dislike" was defined as judges' mean dislike rating of a speaker's LD description minus their mean *dislike* rating of that speaker's true or pure *dislike* description.

Ham like = rated liking on DL - rated liking on L;

Ham dislike = rated disliking on LD
- rated disliking on D.

Results

Accuracy

To examine the relative accuracy of communication of different kinds of lies (leakage, deception, LD, DL), a 2 (Leakage/Deception) \times (LD/DL) analysis of variance (ANOVA) was computed, with repeated mea-

sures on both factors and accuracy scores as the dependent variable.

The main effect of leakage versus deception, $F(1, 36) = 132.04, p < .001; d = 3.83$,² showed that accuracy at recognizing when deception was occurring (deception accuracy) was substantially greater than accuracy at reading a speaker's underlying affect (leakage accuracy). Or, from the point of view of the speaker, the tendency to have one's attempts at deception accurately diagnosed was significantly greater than the tendency to have one's true underlying affect correctly identified. The main effect for LD versus DL and the interaction of LD/DL \times Leakage/Deception were both very small, showing that accuracy at communicating L did not differ significantly from accuracy at communicating DL, and that the magnitude of the accuracy difference between leakage and deception did not vary significantly according to the particular affect that was feigned or concealed.

The overall level of deception accuracy differed significantly from zero, which is the value that would be expected under the null hypothesis of no accuracy, $t(38) = 5.06, p < .001; d = 1.64$. Thus, observers were significantly more accurate than chance at detecting when deception was occurring. Accuracy at reading the underlying affect was significantly *worse* than chance, however, $t(38) = 6.04, p < .001; d = 1.96$. This means that on the whole, observers tended to read the affect that speakers *intended* to communicate rather than the affect that speakers really felt.

Telling Different Kinds of Lies

The correlation between skill at detecting deception and skill at reading leakage was .05 for LD and -.11 for DL.³ Both of these correlations were far from significant. Thus people who are especially good at knowing

² The index *d* is an estimate of the size of the effect expressed in standard deviation units (Cohen, 1977). As a rule of thumb, Cohen suggests regarding *ds* of .20, .50, and .80 as small, medium, and large effects, respectively.

³ *ns* varied from 38 to 40 because there was one missing leakage subscore and one missing deception subscore.

when deception is occurring are not necessarily particularly skilled at knowing the speaker's true affective state.

In terms of encoding, however, the relationship between leakage and deception is strongly positive (for LD, Pearson's $r = .50$, $p < .01$; for DL, $r = .54$, $p < .01$). Thus people whose deception attempts are readily detected tend also to leak their true underlying feelings.

The ability to recognize deception when the speaker is hiding positive affect (LD) is not significantly related to the ability to recognize deception when the speaker is hiding negative affect (DL; $r = -.18$). However, the ability to read a leaked positive cue is very strongly related to the ability to spot a leaked negative cue ($r = .75$, $p < .001$). For encoding, the tendency to get caught telling an LD lie is correlated only .13 (ns) with the tendency to get caught telling a DL lie. The analogous leakage correlation is similarly small and non-significant (.19), showing that people who leak their underlying positive feelings don't necessarily leak their underlying negative feelings.

Different Kinds of Liars and Lie Detectors

Speakers who get caught lying by women also tend to get caught lying by men (for LD, $r = .62$, $p < .001$; for DL, $r = .54$, $p < .001$), and speakers whose leaked cues are picked up by women also have their leaked cues picked up by men (for LD, $r = .76$, $p < .001$; for DL, $r = .77$, $p < .001$). Similarly, observers who are skilled at reading the leakages of women also tend to be skilled at reading the leakages of men (for LD, $r = .72$, $p < .001$; for DL, $r = .78$, $p < .001$). However, skill at knowing when women are lying is *not* significantly correlated with skill at knowing when men are lying (for LD, $r = .06$; for DL, $r = .27$).

Skill at Telling Lies and Skill at Telling Lies: Are They Related?

The four different kinds of ability to tell (detect) lies (detecting leaked liking and leaked disliking; detecting LD and DL lies) were correlated with the four different kinds

of ability to tell (get away with) lies. The 16 correlations ranged from .20 to $-.24$, and all were statistically insignificant. The median correlation was exactly zero. Thus, the ability to get away with one's own lies seems to be completely unrelated to the ability to catch other people in their lies.

Hamming

Only 13 of the 40 subjects earned *ham like* scores greater than zero; only 10 earned *ham dislike* scores greater than zero. Thus, the tendency to express more liking (or disliking) when lying than when really liking (or disliking) was not particularly common in this sample. Further, *ham like* scores were not significantly correlated with *ham dislike* scores ($r = .24$), suggesting that there are probably at least two different kinds of hams. Finally, hams who exaggerate feigned liking and hams who exaggerate feigned disliking are both tremendously successful at their deception attempts (between *ham like* and encoding deception, or getting caught in one's attempts to lie, $r = -.60$, $p < .001$; the r for ham dislike was identical).

Machiavellianism

A median split was calculated for Machiavellianism scores, and a Machiavellianism (High/Low) \times Type of Affect (LD/DL) \times Type of Lie (Leakage/Deception) ANOVA was computed with encoding scores as the dependent variable. A main effect for Machiavellianism showed that high Machs were slightly more successful at getting away with their lies than were low Machs, $F(1, 36) = 3.04$, $p = .09$; $d = .58$. The interaction of Machiavellianism with type of affect showed that high Machs were especially successful at deceiving when pretending to dislike someone they really liked, $F(1, 38) = 5.96$, $p < .05$; $d = .79$. The interaction of Machiavellianism with type of lie was not significant.

An analogous $2 \times 2 \times 2$ ANOVA was computed using decoding scores as the dependent variable. The main effect for Machiavellianism was very small, and the interactions of type of

lie and type of affect with Machiavellianism were also nonsignificant.

In this sample, Machs also tended to be hams—significantly so for *ham like* ($r = .31$, $p = .055$), though only weakly for *ham dislike* ($r = .14$, ns).

Discussion

Consistent with at least ten previous studies of human lie detection (Fay & Middleton, 1941; Feldman, 1976; Harrison et al., 1978; Kraut, 1978; Littlepage & Pineault, 1978; Maier, 1966; Maier & Janzen, 1967; Maier & Thurber, 1968; Matarazzo et al., 1970; Zuckerman et al., 1979), we found that observers were able to identify accurately the occurrence of deception. However, we also found that observers were markedly unable to see through to a speaker's underlying affect when that affect was covered over by some other dissimulated display. Feldman (1976), too, in a study that examined both leakage and deception skill, found that observers could pick up the deception cues but not the underlying affect. Perhaps a convergent finding is the near-zero correlation between identifying deception and reading leakage. Apparently, an observer can have a keen sense of when "something fishy is going on," without necessarily being able to differentiate the feigned feeling from the true affect.

Except for the very small relationship between skill at hiding liking (LD) and skill at hiding disliking (DL) ($M r = .16$), the ability to lie successfully appears to be a fairly general one. People who effectively mask their deception attempts also effectively conceal their true affective states ($M r = .52$). Further, people who are especially adept at fooling women (whether in terms of leakage or deception) also tend to be particularly skilled at deceiving men ($M r = .67$).

There was also a considerable degree of consistency in the ability to detect different kinds of leakages. People who were especially skilled at noticing an underlying negative affect were also particularly adept at discerning an underlying positive affect. Similarly, people who were especially likely to read the leakages of women were also especially likely to read the leakages of men ($M r = .75$).

The tendency to read leaked cues, however, is not significantly related to the ability to recognize the occurrence of deception. Further, the ability to detect deception appears to be a much more disparate set of skills than is the ability to perceive leaked affects. People who can tell that a lie is occurring when liking is being concealed cannot necessarily detect a lie when disliking is hidden. Further, observers who know when women are lying do not necessarily recognize dissimulation by men. Using a "To Tell the Truth" format, Littlepage and Pineault (1978) also found a near-zero correlation between the ability to point to the impostorous male panelists and the ability to identify the impostorous women. Perhaps observers operate on the assumption that there is a single set of clues that tip people off to deception, when in fact women's deceit is revealed in ways different from men's. There is already some evidence suggesting that people's lay theories about clues to deception are not particularly accurate (Ekman & Friesen, 1974; Kraut, 1978; Maier & Janzen, 1967; Krauss et al., Note 1). The second part of the hypothesis, about sex differences in clues to deception, is still essentially an unanswered question. With the exception of a study by McClintock and Hunt (1975) and one by Mehrabian (1971, Experiment 2), most studies of deception cues tend to use subjects of only one sex or to exclude sex as a factor in the analyses (Ekman & Friesen, 1972; Ekman, Friesen, & Scherer, 1976; Harrison et al., 1978; Knapp, Hart, & Dennis, 1974; Kraut, 1978; Streeter, Krauss, Geller, Olson, & Apple, 1977). Both Mehrabian (1971) and McClintock and Hunt (1975) present evidence suggesting that there may in fact be sex differences in at least some of the behaviors emitted during deception.

The relative homogeneity of encoding skills compared to decoding skills is consistent with Kraut's conclusion that people are consistently successful or unsuccessful as liars but are not so consistent as lie detectors. The exception in our data to the general consistency of skills in encoding lies was the very weak relationship between lying successfully about underlying positive feelings (LD) and lying successfully about underlying negative feel-

ings (DL). The importance of the particular kind of affect that is being hidden or dissimulated was also apparent in (a) the weak correlation between detecting LD lies and detecting DL lies; (b) the nonsignificant correlation between exaggerating (hamming) feigned liking and exaggerating feigned disliking; and (c) the interaction between Machiavellianism and the type of affect being encoded. This suggests that conclusions drawn from studies involving just one variety of hidden affect or one kind of "sent" cue may in some cases be of limited generality.

The ability to lie effectively to others was entirely unrelated to the ability to detect the lies of others. Zuckerman et al. (in press) reported a similarly low and insignificant correlation (.20) between encoding and decoding deception. These results are consistent with the results of 17 studies of pure (non-deceptive) nonverbal communications: for those studies, the median correlation between encoding skill and decoding skill is .16 (DePaulo & Rosenthal, in press). The ability to express one's emotions accurately appears to be quite distinct from the ability to interpret the emotions of others accurately, whether those emotions are real or dissimulated.

The Machiavellian subjects in our study, like those in the Krauss et al. (Note 1) study, were not especially skilled at detecting deception; like the Machs in the study by Exline et al. (1970), however, they were fairly successful as liars. We also found that Machs seem to favor an especially theatrical style of deceiving, particularly when feigning positive regard: they, more than their less Machiavellian counterparts, tend to be hams when they lie. Moreover, the hamming strategy appears to work quite well: people who tend to exaggerate sentiments of liking that they do not really feel, as well as people who exaggerate feigned feelings of disliking, are much less likely to get caught in their lies than are the less histrionic sorts. The future of the study of hamming looks promising. Already there is evidence suggesting both sex differences (Rosenthal & DePaulo, in press) and developmental differences (Feldman, Jenkins, & Popolla, in press) in this style of lying.

Methodological Considerations

The present study points to the advantages of distinguishing deception from leakage, of sampling a wide range of encodings, and of using designs that completely cross the affects that are actually experienced with those that are dissimulated or "sent." These design features should help to separate deceptive messages from discrepant but nondeceptive ones and to distinguish deception from stress or from unpleasant affects.

In our study, the lie detectors were the same persons who had previously served as liars; hence, they might have been predisposed to use particular kinds of cues or strategies. Moreover, in our study as in earlier investigations (e.g., Streeter et al., 1977), judges knew exactly what proportion of the time the senders would be lying. Research paradigms in which the judges are not given this information—and, furthermore, are not specifically informed about the content of the lie—might be more realistic. Finally, comparisons of posed deceit with spontaneous lies will shed light on the generalizability of the kinds of deceptions we most often stage in our laboratories, as will a more extensive sampling of deceptions in naturalistic settings.

Future Research in Deception: Toward a More Programmatic Approach

Studies of the abilities to detect lies and to deceive successfully comprise just one area in the psychological literature on deception. (We concern ourselves here only with lie detection that is unaided by physiological measurements or detection devices; for a more physiologically oriented review, see Lykken, 1974, 1979, Orne, Thackray, & Paskewitz, 1972, or Podlesny & Raskin, 1977.) A second line of inquiry looks at accuracy of lie detection as a function of differential access to different channels or modalities such as the face, the body, the tone of voice, the words, and various combinations of these cues (e.g., Ekman et al., 1976; Ekman & Friesen, 1969, 1974; Feldman, 1976; Littlepage & Pineault, 1978; Streeter et al., 1977; Zuckerman et al., in press; Krauss et al., Note 1). The appeal of these studies probably derives in part from

the suggestion that certain channels, such as the face, that under ordinary circumstances are extremely informative, can be especially misleading under conditions of deception. These studies demonstrate the kinds of information that *can* be gleaned from a particular channel when access is restricted to that channel; a further step would be to demonstrate whether this same information is in fact extracted when information from other channels is available, too (cf. Streeter et al., 1977). If it can be established that particular channels are especially misleading under conditions of deception, it might then be asked whether people adjust their attentional strategies in ways that seem to acknowledge these modality effects (DePaulo, Rosenthal, Eisenstat, Rogers, & Finkelstein, 1978), whether particularly skilled lie detectors are especially likely to make these adjustments, and whether attentional instructions or training procedures can increase accuracy of detection.

A third approach has concerned itself with identifying particular cues, such as smiling, speech errors, and pitch, which distinguish deceptive from nondeceptive responses (e.g., Ekman et al., 1976; Ekman & Friesen, 1972; Harrison et al., 1978; Knapp et al., 1974; Kraut, 1978; Luria, 1932; McClintock & Hunt, 1975; Mehrabian, 1971; Streeter et al., 1977; Alker, Note 2). This line of research might be advanced by a consideration of the relationships among (a) the cues that actually do distinguish truth from deception; (b) the cues that people say they use to distinguish truth from deception; and (c) the cues that people actually do utilize in their judgments (see Baskett & Freedle, 1974; Kraut, 1978).

Studies of veridical clues to deception, when they do examine comparable clues, sometimes yield disappointingly inconsistent results. The question "What are the clues to deception?" is probably too broad; instead, we may need to ask, "What are the clues to which kinds of deceit by which kinds of deceivers to which kind of receivers in which kinds of situations?"

A Matrix for Generating and Organizing Research on Deception

We can start, then, by sketching a taxonomy of lies, liars, lie detectors, and social

settings. Then, by locating specific studies of clues to deception within this matrix of lie types, setting types, deceiver types, and detector types, perhaps higher order consistencies will emerge. This four-dimensional approach should be equally relevant to the other two lines of inquiry. Thus, for example, we might want to know whether certain channels are especially misleading when communicating certain kinds of lies, or whether people are especially effective liars or lie detectors in same-sex or same-status dyads.

Among the many kinds of lies are ordinary white lies, proffered in the service of smoothing social interaction, lies of self-aggrandizement for purposes of impression management or personal gain, and lies in which the deceived party is the intended beneficiary, as in physicians' careful cloaking of grim prognoses or parents' imaginative fabrications about sex and death.

Lies may involve facts that may or may not be verifiable by external criteria (as in police investigations), or they may involve attitudes or opinions or feelings about oneself or others. Lies vary also in the degree of guilt or stress that they cause for the deceiver, the degree of involvement that they engender in the topic of the lie, the consequences of getting caught in the lie, and whether the lies were planned and rehearsed or unpremeditated.

An important dimension of social settings is the degree of normative or situational support that they offer to the deceiver. Those who lie to parole officers (especially in "tough" neighborhoods) or to captors in a military setting probably find their deceit more readily justifiable than those who lie to priests, doctors, and close friends. Structural characteristics of contexts, such as the degree of formality or informality or of democracy or autocracy, may also importantly affect the cues used to detect deceit, the modalities used to convey deceit, and the overall ease with which lies are discovered or perpetuated. Still another important aspect of social settings is the people in those settings—the number of participants, their structural relationship to the deceiver and the deceived (e.g., whether they are outside observers or are directly involved in the interaction); their affective

relationship (whether they are more closely allied with the deceiver or with the deceived); and their expectations about the probability of occurrence of deception.

Relevant characteristics of both the deceiver and the detector include demographic characteristics (e.g., age, sex, race, socio-economic status); personality characteristics (e.g., adjustment, anxiety, Machiavellianism); social competence (e.g., nonverbal sensitivity); and cognitive competence (e.g., intelligence). The liar's and the lie detector's appraisal of success in deception (i.e., whether they view effective liars as clever and well adjusted or as immoral and psychopathic) might also predict the outcomes of deceptive transactions. These effects are probably best studied as two-way interactions in designs that cross characteristics of the deceiver with analogous characteristics of the detector.

Trait versus state aspects of lying might also mediate deception effects—that is, the deceiver may be an inveterate liar or an occasional liar who at the present moment is or is not telling the truth; similarly, the lie detector may be a chronic paranoid or a naive and unsuspecting soul who at the present moment is or is not suspicious of the deceiver's intent. The relationship of the deceiver to the deceived—spatially; temporally (is this a one-time meeting or will they see each other again in the future?); and personally (are they strangers, friends, intimates, or enemies? what is their relative status and power?)—should also be considered in future research efforts.

Reference Notes

1. Krauss, R. M., Geller, V., & Olson, C. *Modalities and cues in the detection of deception*. Paper presented at the meeting of the American Psychological Association, Washington, D.C., September 1976.
2. Alker, H. A. *Mystification and deception in presidential press conferences*. Paper presented at the meeting of the American Psychological Association, Washington, D.C., September 1976.

References

- Baskett, G. D., & Freedle, R. O. Aspects of language pragmatics and the social perception of lying. *Journal of Psycholinguistic Research*, 1974, 3, 117-131.

- Christie, R., & Geis, F. (Eds.), *Studies in machiavellianism*. New York: Academic Press, 1970.
- Cohen, J. *Statistical power analysis for the behavioral sciences* (rev. ed.). New York: Academic Press, 1977.
- DePaulo, B. M., & Rosenthal, R. Ambivalence, discrepancy, and deception in nonverbal communication. In R. Rosenthal (Ed.), *Skill in nonverbal communication*. Cambridge, Mass.: Oelgeschlager, Gunn & Hain, in press.
- DePaulo, B. M., Rosenthal, R., Eisenstat, R. A., Rogers, P. L., & Finkelstein, S. Decoding discrepant nonverbal cues. *Journal of Personality and Social Psychology*, 1978, 36, 313-323.
- DePaulo, B. M., Zuckerman, M., & Rosenthal, R. Humans as lie detectors. *Journal of Communication*, in press.
- Ekman, P., & Friesen, W. V. Nonverbal leakage and clues to deception. *Psychiatry*, 1969, 32, 88-106.
- Ekman, P., & Friesen, W. V. Hand movements. *Journal of Communication*, 1972, 22, 353-374.
- Ekman, P., & Friesen, W. V. Detecting deception from the body or face. *Journal of Personality and Social Psychology*, 1974, 29, 288-298.
- Ekman, P., Friesen, W. V., & Scherer, K. R. Body movement and voice pitch in deceptive interaction. *Semiotica*, 1976, 16, 23-27.
- Exline, R., Thibaut, J., Hickey, C., & Gumpert, P. Visual interaction in relation to machiavellianism and an unethical act. In R. Christie and F. Geis (Eds.), *Studies in machiavellianism*. New York: Academic Press, 1970.
- Fay, P. J., & Middleton, W. C. The ability to judge truth-telling or lying from the voice as transmitted over a public address system. *Journal of General Psychology*, 1941, 24, 211-215.
- Feldman, R. S. Nonverbal disclosure of teacher deception and interpersonal affect. *Journal of Educational Psychology*, 1976, 68, 807-816.
- Feldman, R. S., Jenkins, L., & Popolla, O. Detection of deception in adults and children via facial expressions. *Child Development*, in press.
- Harrison, A. A., Hwalek, M., Raney, D. F., & Fritz, J. G. Cues to deception in an interview situation. *Social Psychology*, 1978, 41, 156-161.
- Knapp, M. L., Hart, R. P., & Dennis, H. S. An exploration of deception as a communication construct. *Human Communication Research*, 1974, 1, 15-29.
- Kraut, R. E. Verbal and nonverbal cues in the perception of lying. *Journal of Personality and Social Psychology*, 1978, 36, 380-391.
- Littlepage, G., & Pineault, T. Verbal, facial, and paralinguistic cues to the detection of truth and lying. *Personality and Social Psychology Bulletin*, 1978, 4, 461-464.
- Luria, A. R. *The nature of human conflicts*. New York: Liveright, 1932.
- Lykken, D. T. Psychology and the lie detector industry. *American Psychologist*, 1974, 29, 725-739.
- Lykken, D. T. The detection of deception. *Psychological Bulletin*, 1979, 86, 47-53.
- Maier, N. R. F. Sensitivity to attempts at deception

- in an interview situation. *Personnel Psychology*, 1966, 19, 55-65.
- Maier, N. R. F., & Janzen, J. C. The reliability of reasons used in judgments of honesty and dishonesty. *Perceptual and Motor Skills*, 1967, 25, 141-151.
- Maier, N. R. F., & Thurber, J. A. Accuracy of judgments of deception when an interview is watched, heard, and read. *Personnel Psychology*, 1968, 21, 23-30.
- Matarazzo, J., Wiens, A., Jackson, R., & Manaugh, T. Interviewer speech behavior under conditions of endogenously present and exogenously-induced motivational states. *Journal of Clinical Psychology*, 1970, 26, 141-148.
- McClintock, C. C., & Hunt, R. G. Nonverbal indicators of affect and deception in an interview setting. *Journal of Applied Social Psychology*, 1975, 5, 54-67.
- Mehrabian, A. Nonverbal betrayal of feeling. *Journal of Experimental Research in Personality*, 1971, 5, 64-73.
- Orne, M. T., Thackray, R. I., & Paskewitz, D. A. On the detection of deception. In N. S. Greenfield & R. A. Sternbach (Eds.), *Handbook of psychophysiology*. New York: Holt, Rinehart & Winston, 1972.
- Podlesny, J. A., & Raskin, D. C. Physiological measures and the detection of deception. *Psychological Bulletin*, 1977, 84, 782-799.
- Rosenthal, R., & DePaulo, B. M. Sex differences in accommodation in nonverbal communication. In R. Rosenthal (Ed.), *Skill in nonverbal communication*. Cambridge, Mass.: Oelgeschlager, Gunn & Hain, in press.
- Streeter, L. A., Krauss, R. M., Geller, V., Olson, C., & Apple, W. Pitch changes during attempted deception. *Journal of Personality and Social Psychology*, 1977, 35, 345-350.
- Zuckerman, M., DeFrank, R. S., Hall, J. A., Lorraine, D. T., & Rosenthal, R. Facial and vocal cues of deception and truth. *Journal of Experimental Social Psychology*, 1979, 15, 378-396.

Received August 20, 1978 ■

New JPSP Format Delayed Until April

Recent issues of this journal carried an announcement that the *Journal of Personality and Social Psychology* would appear in January 1980 under new policies and in a new sectioned format. However, in order to publish the backlog of manuscripts accepted under present policies, the first three issues of 1980 will continue to carry articles accepted under Clyde Hendrick's Acting Editorship.

This journal will appear in April as a sectioned journal edited by Melvin Manis, Ivan D. Steiner, and Robert Hogan, as previously announced.

Robert S. Daniel, Chair, APA
Publications and Communications Board