

Fishy-Looking Liars: Deception Judgment From Expectancy Violation

Charles F. Bond, Jr.
Texas Christian University

Adnan Omar
Yarmouk University
Irbid, Jordan

Urvashi Pitre, Brian R. Lashley, Lynn M. Skaggs, and C. T. Kirk
Texas Christian University

To explain how people judge that others are lying, an expectancy-violation model is proposed. According to the model, deception is perceived from nonverbal behavior that violates normative expectation. To test the model, 3 experiments were conducted, 2 in the United States and 1 in India. In each experiment, people described acquaintances while exhibiting weird nonverbal behaviors, such as arm raising, head tilting, and staring. Other Ss watched the videotapes of the descriptions and made deception judgments. Consistent with the expectancy-violation model, both American undergraduates and Indian illiterates inferred deception from weird behaviors. Implications of the model are discussed.

The study of deception arose in response to a practical problem: the need to detect lies. Physiological researchers developed the polygraph, which came to be widely used (Saxe, 1991). Skeptical of physiological methods, psychologists envisioned behavioral technologies for lie detection (Ekman, 1985), although these remain to be perfected.

Alongside the scientific efforts are lay attempts to uncover deceit. Nonscientists make judgments of deception every day from a nonsystematic study of the liar's face, body, words, and voice. Although naive deception judgments may be largely inaccurate (Kraut, 1980), they are important. Some murder suspects are executed and others are freed because of jurors' judgments of the suspects' credibility. Some business negotiations succeed and others fail because of the negotiators' judgments of one another's truthfulness. In many settings, the consequences of a deception judgment do not depend on whether the judgment is correct (DePaulo, 1981).

In the present article, we attempt to explain how people judge that others are lying. We begin the article by describing a model that attributes naive deception judgments to violations of nonverbal behavior norms.

Expectancy-Violation Model

Our model of deception judgments begins with an analysis of norms for nonverbal behavior. Norms embody situation-based

expectancies that prescribe certain actions and proscribe others. Thus, norms for nonverbal behavior prescribe that people make eye contact with one another and that they avoid speech errors. When nonverbal norms are violated, dramatic effects can ensue (Burgoon & Walther, 1990).

According to the expectancy-violation model, perceivers accept at face value nonverbal behaviors that are expected and scrutinize unexpected behaviors. Nonverbal violations of normative expectation demand an explanation (Feldman & Chesley, 1984). They raise suspicion. They prompt perceivers to review prior doubts about the actor (Toris & DePaulo, 1984) and to analyze motivational factors that bear on the likelihood of deception (Kraut, 1978). Perceivers infer deception from nonverbal norm violations when they have reason to question the actor's veracity and when innocent explanations for the unexpected behavior seem less credible.

Traditionally, deception judgments were thought to be based on a small set of behaviors stereotypically associated with deception. Gaze aversion, speech disturbances, postural shifts—these are stereotypic judgment cues. Consistent with this traditional analysis, research has shown that people have beliefs about liars' behaviors (Zuckerman, Koestner, & Driver, 1981) and attribute deception to those who act in stereotypically deceptive ways (C. F. Bond, Kahler, & Paolicelli, 1985).

Traditionally, deception judgments were thought to reflect verbal-nonverbal inconsistency. Expressive behaviors that contradicted verbal content were presumed to make a speaker look dishonest. Consistent with this notion, research has verified that perceivers infer deceit from contradictions between speech content and facial expression (Rotenberg, Simourd, & Moore, 1989).

The expectancy-violation model offers a new perspective on deception judgments. True, certain nonverbal behaviors may often violate normative expectation and often are used as a basis for inferring deceit; true, people may expect verbal-nonverbal consistency and therefore attribute deception from vio-

We are grateful to Swati Apte for help with this research and to Steve Cole, Rich Fenker, Kathy Mueller, and Bhaskar Shejwal for comments on an earlier draft. Charles F. Bond, Jr.'s contribution to Experiment 3 was supported by an Indo-American fellowship from the Indo-U.S. Subcommission on Education and Culture and by a paid leave of absence from Texas Christian University.

Correspondence concerning this article should be addressed to Charles F. Bond, Jr., Department of Psychology, Texas Christian University, Fort Worth, Texas 76129.

lations of a consistency norm. But according to our model, deception judgments are not tied to any small set of cues, nor do they presuppose a communicative contradiction. Theoretically, deception should be inferred from any nonverbal behavior that violates a norm.

Earlier work suggested that expectancy violation might play a role in deception judgments. Finding that a witness who avoided eye contact was judged to be lying, Hemsley and Doob (1978) surmised that high levels of eye contact are expected; hence gaze aversion is a "deviation from the normative state of affairs." Hemsley and Doob's results, however, are open to another explanation. Because it is stereotypic of deception, gaze aversion may function as one of a small set of cues used for deception judgment.

Baskett and Freedle (1974) noted a role for expectancy violation in judgments of response latency, a paralinguistic behavior. They videotaped subjects who were answering a series of questions aloud. Judges watched the videotape and tried to determine when the subjects were lying. In the videotapes, the time between the question and response was varied. Sometimes, the response was very rapid; sometimes very slow; sometimes intermediate in latency. Overall, responses were judged to be deceptive if they came too slowly or too quickly. The only responses to be judged truthful were those that followed an intermediate delay. As the authors suggested, judgments of deception may be based on a norm for response latency, and responses appear deceptive if their latency deviates from the norm in either direction. Unfortunately, Baskett and Freedle's demonstration was confined to a single behavioral dimension.

Theoretically, the expectancy-violation model of deception judgments should apply to all nonverbal behaviors that violate norms. As we pondered the kinds of evidence that would be needed to validate this model, we considered several research strategies. We considered following Baskett and Freedle's (1974) lead by focusing on one behavioral dimension (e.g., eye contact), determining a normative value along that dimension (say, 50% eye contact), and arranging for subjects to judge the deceptiveness of behaviors that varied along the dimension (either matching or mismatching the norm). Quite likely, though, this research strategy would invite a number of alternative explanations specific to the behavior studied; at best, it might complement Baskett and Freedle's evidence by showing that deception is inferred from norm violations along a second behavioral dimension.

Experiment 1: American Undergraduates

To show that deception is inferred from nonverbal expectancy violations, we pursued a different research strategy. We examined the impact on deception judgments of a diverse set of nonverbal behaviors, each indisputably strange. We videotaped American undergraduates who were telling the truth while posing a number of bizarre behaviors (such as raising a shoulder to the ear or extending an arm to the ceiling), then showed judges a few of these odd-looking truths amid a large number of normal communications. From nonverbal behavior, the judges attempted to discriminate lies from truths. We expected them to infer deception from the "fishy-looking" behaviors.

In designing this investigation, we tried to anticipate alternative explanations for the predicted results. In principle, deception judgments might reflect the impact of stereotypic judgment cues (Zuckerman, DePaulo, & Rosenthal, 1981). To avoid a stereotypic cue interpretation, we selected for study nonverbal behaviors that are rarely displayed in face-to-face interaction, that have never been mentioned as cues to deception, that are not stereotypically associated with deception, and that have never been mentioned as judgment cues. In principle, deception might be inferred from nonverbal messages that contradict the content of speech (Rotenberg et al., 1989). To circumvent a verbal-nonverbal inconsistency interpretation, we studied nonverbal behaviors that had no clear expressive meaning, forced subjects to judge deception from a video presentation with no sound, and manipulated judges' beliefs about the verbal messages on the videotape. According to the present hypothesis, deception should be inferred from any counternormative nonverbal action, even one that is not stereotypic of deception and has no expressive relation to the verbal content of the suspected lie.

Method

American undergraduates posed weird nonverbal behaviors while truthfully describing acquaintances. From a videotape with no sound that included a large number of normal-looking person descriptions and a few of these fishy-looking ones, an independent group of American undergraduates tried to determine when subjects were lying and when they were telling the truth.

Videotapes. Fifty-four undergraduates at Texas Christian University participated in making stimulus videotapes. These students were seated facing a male experimenter and a videotape camera over the experimenter's left shoulder. Forty-eight of the subjects (24 men and 24 women) participated in a lie-and-truth procedure. The other 6 subjects (3 men and 3 women) participated in a posed behavior procedure. The latter is of primary interest here.

Each lie-and-truth subject was asked to identify two acquaintances: a person they liked and a person they disliked. On videotape, the subject described: (a) the person they liked, (b) the person they disliked, (c) the person they liked as if they really disliked that person, and (d) the person they disliked as if they really liked that person. No behaviors were posed during any of these descriptions.

The 6 other subjects participated in a posed behavior procedure. Posed behavior subjects identified four acquaintances: two they liked and two they disliked. Subjects were then videotaped while giving a truthful description of each acquaintance. While describing two of the acquaintances (one whom they liked and one whom they disliked), the subject was unposed. While describing the other two acquaintances, the subject posed nonverbal behaviors specified by the experimenter. Two of the subjects held their eyes closed throughout one description and stared at the camera throughout the other. Two of the subjects held their right shoulder raised to the right ear throughout one description and their left shoulder raised to the left ear throughout the other. Two of the subjects held their right arm upward (toward the ceiling) throughout one of the descriptions and held it forward (toward the camera) throughout the other. The assignment of one behavior (vs. another) to the description of a liked (vs. a disliked) acquaintance was counterbalanced across subjects. These posed behavior subjects heard no reference to deception.

In all, we videotaped 216 person descriptions (4 descriptions from each of 54 subjects). The descriptions averaged roughly 1 min in length.

From each videotaped person description, we abstracted a 30-s segment that depicted an undergraduate who was seated, facing the videotape camera. It included the subject's head and body, down to the subject's knees. Four videotapes were made. Each contained 48 unposed lie-and-truth segments followed by 6 segments of truth telling: 3 with posed behaviors (1 involving the eyes, 1 involving the shoulder, and 1 involving the arm) and 3 unposed. Each subject contributed one person description to each of the four videotapes. Subjects appeared in the same order on each tape.

Subjects. One hundred ninety-two undergraduates at Texas Christian University participated in Experiment 1 to fulfill an introductory psychology course requirement.

Procedure. Subjects were tested in visually isolated groups of 6. Subjects were told that they would be watching a videotape of students describing their feelings about acquaintances. Some of the descriptions would be truthful and others would be lies. The judges were given information about the verbal message on the videotape. Forty-eight judges were told that all of the targets on the videotape were claiming to like someone; 48 were told that all of the targets were claiming to dislike someone; 48 were told that all of the targets were claiming to feel anxious; and 48 were told that all of the targets were claiming to feel relaxed. As all subjects were informed, some of the targets on the videotape would be lying and others would be telling the truth. The subject's job was to discriminate truths from lies.

Judges then saw 54 videotaped person descriptions with no sound: 48 unposed lie-and-truth segments followed by the 6 truth-telling segments of interest here. Twenty-four judges saw each of the four experimental videotapes. After each 30-s person description, subjects were given 10 s to record a binary lie-or-truth judgment.

Results and Discussion

According to the expectancy-violation model, perceivers should infer deception from weird behaviors. To assess this prediction, we had subjects tell the truth while posing weird nonverbal behaviors. Consistent with the expectancy violation hypothesis, the subjects were perceived as more dishonest when they were posing the weird behaviors than when they were not ($M_s = 60.33\%$ and 43.92% lie judgments, respectively), $t(191) = 5.02$, $p < .0001$.¹

While telling the truth, subjects posed one of six weird behaviors: closing the eyes, staring, raising an arm to the ceiling, holding an arm forward, raising the right shoulder, and raising the left shoulder. To ascertain judges' reactions to individual behaviors, we compared the 96 deception judgments targets received when posing a given behavior to 96 deception judgments they received when unposed. We conducted six separate chi-square analyses, one for each behavior. Results appear in Table 1.

Each of the behaviors listed in the table tended to make people look dishonest. Targets significantly reduced their apparent honesty when they did the following: closed their eyes, $\chi^2(1, N = 192) = 13.60$, $p < .001$; stared at the camera, $\chi^2(1, N = 192) = 9.60$, $p < .005$; held an arm forward, $\chi^2(1, N = 192) = 8.22$, $p < .005$; and raised their left shoulder to the left ear, $\chi^2(1, N = 192) = 4.25$, $p < .05$.

Verbal-nonverbal inconsistency. Perhaps certain of these weird behaviors made speakers look deceptive because they contradicted what the speaker said. In light of this verbal-nonverbal inconsistency explanation, we forced subjects to judge

Table 1
*Effect of Weird Behaviors on Apparent Dishonesty:
Experiment 1*

Behavior	Percentage deception judgments		χ^2 for difference ^a
	When target posed the behavior	When target did not	
Eyes closed	61.96	34.78	13.60**
Staring	60.96	40.22	9.60**
Arm to ceiling	57.30	50.00	0.69
Arm forward	61.29	39.13	8.22**
Raise right shoulder	58.89	55.32	0.24
Raise left shoulder	59.14	43.96	4.25*

^a $df = 1$, $N = 192$.

* $p < .05$. ** $p < .005$.

deception from a silent video and manipulated their beliefs about what the targets were saying. While watching the video, one fourth of the judges believed that each target was claiming to like someone; one fourth believed that each target was claiming to dislike someone; one fourth believed that each target was claiming to feel anxious; and one fourth believed that each target was claiming to feel relaxed. If strange behaviors made targets look dishonest because of expressive inconsistency with verbal content, this effect should have been moderated by judges' beliefs about verbal content. It was not. Judges' beliefs about verbal content did not interact with the nature of a video segment (as posed or unposed) to influence percentage deception judgments to the weird behaviors as a whole, $F(3, 188) = .23$, ns ; nor did the beliefs qualify any of the effects of individual behaviors on apparent dishonesty. In six $4 \times 2 \times 2$ log-linear analyses (one for each behavior in Table 1), the largest interaction between verbal belief (liking, disliking, anxiety, or relaxation), the nature of the video segment (as posed vs. unposed), and type of judgment (lie vs. truth) yielded $G^2(3) = 5.87$, $p > .10$. Verbal-nonverbal inconsistency cannot explain these experimental results.

Lie detection accuracy. Most people can barely discriminate lies from truths (C. F. Bond et al., 1985), whereas a few are gifted at lie detection (Ekman & O'Sullivan, 1991). Perhaps individual differences in lie detection are related to the tendency to infer deception from weird behaviors.

To assess this possibility, we examined our subjects' accuracy in detecting lies. Each subject saw a video presentation (without sound) of 24 people lying and 24 people telling the truth after

¹ We measured apparent dishonesty with a proportion: the proportion of subjects who judged a target person to be lying. As Kirk (1982) noted, some statisticians recommend that proportions be subjected to an arcsine transformation before data analysis. In the body of this article, we report analyses of untransformed proportions. In addition, we analyzed arcsine-transformed proportions. For every significant result on untransformed proportions reported in the text, the corresponding result on arcsine-transformed proportions is significant at the reported alpha level. For example, on arcsine-transformed measures, the subjects of Experiment 1 look more dishonest if they are posing a weird behavior than if they are not, $t(191) = 5.07$, $p < .0001$.

receiving false information about what the people on the tape were saying. Under these conditions, the average subject was not successful at discriminating lies from truths (mean detection accuracy = 50.12%), $t(191) = .24$, *ns*, yet subjects differed considerably in their detection accuracy. Nineteen of the subjects achieved more than 60% accuracy, whereas 10 achieved less than 40%. As shown by a correlational analysis, accurate detectors and inaccurate detectors were equally likely to infer deception from weird behaviors. For the relationship between lie versus truth discrimination accuracy and the difference in percentage deception judgments to weird versus normal behaviors ($r = -.09$, *ns*).

Limitations of Experiment 1. Although Experiment 1 seems to support an expectancy-violation model of deception judgments, its novel findings might be suspect. In Experiment 1, subjects judged deception from a video presentation with no sound after receiving false information about the verbal content of the videotape. These unnatural viewing conditions might have exaggerated the impact of weird-looking behaviors.

If Experiment 1 indicates that perceivers infer deception from weird behaviors, it does not establish the specificity of this phenomenon. Perhaps perceivers are leery of all strange things and attribute dishonesty to people who are merely associated with an unusual occurrence, even if the people are acting normally. If so, the stimulus to deception judgments would not be weird behaviors, but weirdness per se. Perhaps the attributional response to weird behaviors is nonspecific, too. Perceivers who are judging an actor's honesty may infer deception from weird behaviors. But perhaps they would have judged the actor negatively on any evaluative dimension.

Experiment 2: Specificity of the Effect

Having found that perceivers infer deception from weird behaviors, we conducted an experiment to assess the specificity of this effect. In Experiment 2, subjects made judgments of people from an audiovisual presentation. Some people on the videotape were acting strangely, and others (although acting normally) were associated with a weird occurrence over which they had no control. Some of the subjects judged these people for honesty, as in Experiment 1. Others judged them for selfishness, a second evaluative dimension. We hypothesized that in an audiovisual presentation, deception would be inferred from weird behaviors but not weird occurrences and that the impact of weird behavior on deception judgments would not generalize to judgments of selfishness.

Method

Videotapes. Six undergraduates at Texas Christian University participated in making new videotape segments for Experiment 2. Each undergraduate was videotaped while truthfully describing four acquaintances: two whom the subject liked and two whom the subject disliked. These subjects were not told that the experiment concerned deception. The videotapes of two of the subject's person descriptions were normal. The videotapes of the other two descriptions presented weird occurrences. In these segments, 2 subjects were wearing a large nose bandage, 2 subjects were presented in a picture tilted 90° (with the

subject's head at the right of the television screen), and 2 other subjects were seen from a moving perspective (that reflected erratic camera movement at the time of taping). In all, we made 24 video segments of posed occurrences—12 that were normal and 12 that we hoped would be weird.

To validate our experimental manipulation of weirdness, we solicited ratings of 48 video segments: the 24 posed occurrence segments just described and the 24 posed behavior segments from Experiment 1 (12 that depicted weird behaviors and 12 that did not).

Twenty undergraduates at Texas Christian University who were unaware of our interest in deception saw an audiovisual presentation of the 48 segments (in one of two different orders) and rated each segment for strangeness on a scale that ranged from *not strange* (0) to *as strange as it can possibly be* (4). We examined the resulting data and noted the mean rating of each of the six weird behaviors in Table 1 and of each of three weird occurrences (subject wearing bandage, tilted picture, and moving perspective). A series of nine paired observation *t* tests showed that the ostensibly weird video segments were rated as significantly stranger than normal segments that depicted the same speaker (in each of the nine analyses, $p < .01$). Overall, segments that depicted weird behaviors were rated as stranger than normal video segments, $t(19) = 10.56$, $p < .0001$, as were segments that depicted weird occurrences, $t(19) = 9.14$, $p < .0001$ (for the strangeness ratings, $M_s = 1.35, 1.52$, and 0.27 for weird behaviors, weird occurrences, and normal segments, respectively).

For Experiment 2, we added six new video segments to each of four tapes used in Experiment 1. In three of the new segments, a person telling the truth was associated with a weird occurrence (a nose bandage, a tilted picture, or a moving perspective); in the other three segments, a person telling the truth was depicted normally.

Subjects. Eighty undergraduates at Texas Christian University participated in Experiment 2 for extra credit in a course. None of these subjects had participated in Experiment 1, nor had any participated in rating the strangeness of video segments.

Procedure. Subjects were run in visually isolated groups of 6. A male experimenter explained that the subjects would be watching a videotape of people describing acquaintances. He said that each person on the tape had taken a personality test. The subject was to make personality judgments. Subjects participated in one of two different experimental conditions. Half of the subjects were told that some of the speakers on the videotape were honest and others were dishonest. On seeing each video segment, the subject's job was to judge the speaker's honesty by circling either *honest* or *dishonest* on a written form. The other subjects were told that some of the speakers on the videotape were selfish and others were unselfish. The subject's job was to judge each speaker's selfishness by circling either *selfish* or *unselfish* on a written form. The experimenter said that the accuracy of the subject's personality judgments would be assessed.

Subjects then saw an audiovisual presentation of 60 videotape segments: 48 from the unposed lie-and-truth procedure of Experiment 1, 6 from the posed behavior procedure of Experiment 1, and 6 from the posed occurrence procedure designed specifically for the present experiment. The tape was presented in one of two different orders. Half of the subjects saw the posed behaviors in the middle of their rating task (as Segments 25–30) and the posed occurrences at the end (as Segments 55–60). The other subjects saw the posed occurrences as Segments 25–30 and the posed behaviors as Segments 55–60. On seeing a person on the video describing an acquaintance, subjects judged either the person's honesty or the person's selfishness. The experimenter said nothing about the veracity of the person descriptions on the videotape and made no attempt to manipulate judges' beliefs about the verbal content of the videotapes.

Table 2
Judgments of Weird Behaviors and Weird Occurrences:
Experiment 2

Variable	Perceived dishonesty (%)	Perceived selfishness (%)
Weird behaviors	45.27	46.71
Weird occurrences	29.03	47.50
Normal video segments	32.58	45.71

Results and Discussion

Subjects judged one of four videotapes. Preliminary analyses revealed some differences in judgments to the videotapes. Hence, this factor is included in the analyses below.

Perceived honesty. According to the expectancy-violation model, weird behaviors should make a speaker look dishonest. To assess this prediction, we noted the percentage of dishonesty judgments each subject made to speakers who displayed weird behaviors and to speakers depicted in normal video segments. Means appear in the left-hand side of Table 2. Consistent with the expectancy-violation prediction, subjects attributed more dishonesty to people who were posing weird behaviors than those who were behaving normally ($M_s = 45.27\%$ vs. 32.58% attributed dishonesty), $t(36) = 2.21$, $p < .05$.

Perhaps the stimulus to deception judgments is strangeness per se, and perceivers would attribute deception to speakers who did not act weird but were merely associated with a weird occurrence. Results do not support this contention. Speakers who were associated with a weird occurrence (a nose bandage, a tilted picture, or a moving perspective) were perceived as no less honest than speakers depicted normally (M attributed dishonesty = 29.03% vs. 32.58%), $t(36) = -.60$, ns . These results do not reflect a lack of weirdness in the so-called "weird" occurrences. As noted above, pretest subjects had rated the weird occurrences as slightly weirder than the weird behaviors.

Perceived selfishness. If perceivers who are judging honesty attribute dishonesty from weird behaviors, perhaps this reflects their general tendency to derogate oddballs. To assess this possibility, we asked subjects to judge speakers for selfishness and noted the percentage of negative evaluations to weird behaviors along this second judgmental dimension. Relevant means appear in the right-hand column of Table 2. Analyses show that subjects attribute no more selfishness to speakers who are posing weird behaviors than speakers who are depicted in normal video segments (mean attributed selfishness = 46.71% vs. 45.71%), $t(36) = .17$, $p > .85$, and that they attribute no more selfishness to speakers who are associated with a weird occurrence than to normal speakers ($M_s = 47.50\%$ vs. 45.71% attributed selfishness), $t(36) = .28$, ns . The weird behaviors that make a person look dishonest do not make them look generally bad.

Lie detection accuracy. To determine whether individual differences in the ability to detect lies would be related to the tendency to infer deception from weird behaviors, we examined subjects' judgments of honesty. In Experiment 2, each subject judged 24 people who were lying and 24 people who were

telling the truth. In judging these segments, subjects were reluctant to attribute dishonesty ($M = 40.69\%$ dishonesty judgments), yet they averaged statistically significant lie versus truth discrimination (mean accuracy = 55.15%), $t(36) = 3.87$, $p < .001$. Subjects varied widely in the accuracy of their judgments, accuracies ranging from 70.83% to 37.50% . Accuracy in judging honesty in the 48 lie-and-truth segments was unrelated to the tendency to infer deception from weird behaviors. For the relationship between lie versus truth discrimination accuracy and the difference in deception judgments to weird behaviors versus normal video segments, $r = .15$, ns . As in Experiment 1, accurate perceivers were no less likely than inaccurate perceivers to infer dishonesty from weird behaviors. Here dishonesty was inferred from weird behaviors in a context in which lies were discriminable from truths.

Limitations of Experiments 1 and 2. Apparently, American undergraduates infer deception from weird nonverbal behaviors such as from eye closure, staring, arm raising, and shoulder raising. These are not the traditional judgment cues. Although Experiments 1 and 2 seem to support an expectancy-violation model of deception judgments, criticisms of these studies could be raised. Critics could question our videotapes. While posing nonverbal behaviors, our target subjects were invariably telling the truth. Hence, there were no veridical cues for inferring deceit. Moreover, the targets posed a weird behavior on one occasion but not on a second. Perhaps the act of posing is effortful, amusing, or embarrassing, and judges inferred deception from these psychological states, not from weird behaviors per se. Moreover, our judges were American undergraduates, an experimentally sophisticated sample. Perhaps to savvy students, the presentation of weird behaviors in a study on deception implies a demand to judge the behaviors as deceptive. If so, our findings could be laboratory artifacts.

Experiment 3: Indian Illiterates

While living abroad, we had an unusual opportunity to remedy these limitations and assess the cross-cultural validity of our findings. We had 8 urban Indians tell lies while posing a weird nonverbal behavior either on- or off-camera. We offered these subjects a financial incentive for lying, to maximize deception cues (DePaulo & Kirkendol, 1988), and we solicited judgments of these lies from a sample of experimentally naive Indians who lived in a remote village. If the expectancy violation model is valid, deception should be attributed from fishy-looking behaviors even if the people posing the behaviors are lying and even if the liars are motivated. Odd-looking nonverbal behaviors should have an impact on deception judgments that is separable from any influence of the act of posing, and this impact should be evident even if the judges are ill-equipped to infer experimental demands.

Experiment 3 differs from the earlier experiments in three ways: in the sampling of subjects, in presentation format, and in control procedures. Here, too, we planned a different operationalization of the independent variable. Experiments 1 and 2 documented reactions to a particular set of weird nonverbal behaviors: shoulder raising, arm raising, staring, and eye closure. In Experiment 3 we studied a new set of behaviors. We

hoped for a conceptual replication of our earlier findings under circumstances as different as possible from those in the earlier research (Carlsmith, Ellsworth, & Aronson, 1976) and a cross-cultural validation of theory that few social psychologists have the opportunity to attempt (M. H. Bond, 1988).

Method

Urban Indians posed weird nonverbal behaviors while lying about acquaintances. From an audiovisual presentation that included a large number of unposed person descriptions as well as a few fishy-looking ones, illiterate Indian farm workers tried to determine when subjects were lying and when they were telling the truth.

Videotapes. Seventy-two residents of Pune, India participated in making stimulus videotapes for a monetary payment after responding to a newspaper advertisement. These subjects were seated in front of an Indian male research assistant who was bilingual in English and Marathi, the dominant languages of Pune. A videotape camera was positioned over the assistant's left shoulder. Sixty-four of the subjects participated in a lie-and-truth procedure. The other 8 subjects (all men) participated in a posed behavior procedure. The latter is of primary interest here.

As in Experiment 1, each lie-and-truth subject identified two acquaintances, one a person they liked and another person they disliked. On videotape, the subject described (a) the person they liked, (b) the person they disliked, (c) the person they liked as if they disliked that person, and (d) the person they disliked as if they liked that person. Half of the subjects spoke in Marathi, the other half in English. After giving all four person descriptions, subjects indicated in writing how they could tell when people were lying.

Each posed behavior subject was asked to identify two people he liked and two people he disliked. The subject was instructed to lie by claiming to like one of the people he disliked or to dislike one of the people he liked. For lying, the subject was offered a financial incentive. If he could convince the research assistant that his person description was the truth, the subject would win 20 Indian rupees (approximately an hour's wages for an Indian University Professor). The subject told four such lies, one about each of the four acquaintances. Each lie was videotaped, and for each lie, the subject was offered the 20-rupee financial incentive.

While lying, the subject was required to pose a weird nonverbal behavior either off- or on-camera. While lying about two acquaintances (one he liked and one he disliked), the subject raised the heel of one foot and the toe of the other foot off the floor. Although the subject would have presumed that these behaviors were being taped, the heel and toe raising were off-camera. While lying about the other two acquaintances, the subject posed one of four other weird behaviors. Two of the subjects tilted their head so that their left ear touched their left shoulder, two lifted their right leg and held it parallel to the floor, two bent their torso and told lies while touching both hands to the floor, and two spoke while holding their lower jaw to the left of their upper jaw. These poses appeared on-camera. The order of person descriptions and of posing off- versus on-camera was counterbalanced across subjects.

In selecting these nonverbal behaviors for study, we used results from our 64 Indian lie-and-truth subjects. Each of the five behaviors we chose to study were ones that none of these 64 Indians displayed and that none of the 64 reported to be indicative of deceit. None of these behaviors had been displayed by any of our American subjects, either, nor had any been mentioned as deception cues, judgment cues, or behavioral stereotypes in the Western deception literature. On seeing our videotape, Indian colleagues assured us that the head tilting, leg lifting, torso bending, and jaw thrusting were weird.

Subjects. The subjects were 120 Marathi-speaking Indians from Batori village, an isolated agricultural community in Western India. As farm laborers, the subjects earn 75¢ a day. Fifty-two of the subjects reported that they were illiterate. Although the remaining 68 claimed literacy, many had difficulty signing their names. These subjects rarely saw Americans (or any non-Indians). None had ever heard of psychology or experimental methods.

Procedure. Visually isolated from one another in the community's Hindu temple, the subjects participated for a monetary payment in groups of 5. A literate Indian female experimenter gave instructions in oral Marathi, noting that the subjects were in a study of deception, that they would be seeing some descriptions of people, that some of the descriptions would be truthful and others deceptive, and that the judges should try to discriminate lies from truths. The experimenter then showed the subjects a videotape of people describing acquaintances either truthfully or deceptively. After watching each person on the tape, subjects turned a thumb up if they thought that the person was telling the truth and turned a thumb down if they thought that the person was lying. These nonverbal responses were recorded by the experimenter and Charles F. Bond, Jr., both of whom were blind to the video segment being judged. In each 5-person group, 1 subject's responses were independently recorded by both scorers. Interscorer reliability was established, agreement rate = 97.35%.

For an unrelated study of lie detection across cultures, subjects began by judging unposed lie-and-truth segments of either 64 Indians or 80 non-Indians (40 of the American lie-and-truth subjects from the current Experiment 1 plus 40 Jordanians; see Bond, Omar, Mahmoud, & Bonser, 1990). They made these judgments from an audio, a video, or an audiovisual presentation. Afterward, each subject judged an audiovisual presentation of the eight segments of current interest. In four of the segments, men lied in Marathi while posing a weird behavior off-camera (with their feet); in the other four, they lied in Marathi while posing a weird behavior on-camera (once with a tilted head, once with a lifted leg, once with a bent torso, and once with a thrusting jaw). In all, each of the 32 posed behavior segments was judged by 30 rural Indians.

Results and Discussion

According to the expectancy-violation model, weird-looking nonverbal behaviors should make a person look dishonest. This prediction was supported. Each judge saw four targets who were lying while posing a weird behavior on-camera and four who were lying while posing a weird behavior off-camera. Subjects judged targets to be more dishonest if they were posing a weird behavior on-camera rather than off-camera ($M_s = 38.75\%$ vs. 30.83% lie judgments, respectively), $t(119) = 2.65$, $p < .01$. Although chi-square tests revealed no statistically significant effect of any particular weird behavior, judges showed a tendency to infer deception from each of the poses our subjects assumed: the tilted head, the lifted leg, the bent torso, and the thrusting jaw.

Lie detection accuracy. For a correlational analysis, we assessed individual differences in lie detection abilities. Before the audiovisual presentation of liars who were posing a weird behavior either on- or off-camera, the subjects of Experiment 3 judged lie and truth tellers from either an audiovisual, video, or audio presentation. In judging lie-and-truth segments that had been presented audiovisually (as had all the posed behavior segments), subjects were reluctant to attribute dishonesty ($M_s = 25.49\%$ deception judgments to truths and 30.34% deception

judgments to lies). The subjects averaged statistically significant lie-versus-truth discrimination ($M = 52.42\%$ accuracy), $t(39) = 3.76$, $p < .001$, but some subjects were better at lie detection than others, with accuracies ranging from 44.58% to 63.75%. Accurate judges were just as likely as inaccurate judges to infer deception from weird behaviors: The correlation between lie-versus-truth discrimination accuracy and difference in deception judgments to weird versus normal behaviors was $-.03$, *ns*. As these results indicate, even relatively accurate lie detectors infer deception from weird behaviors, and they do so in a context in which lies and truths are discriminable.

Possibility of incidental cues. In our research, subjects posed weird behaviors on-camera. Perhaps during the on-camera pose, they incidentally displayed cues that are stereotypic of deception.

To assess this possibility, we analyzed some of the incidental behaviors on our videotapes. From each videotape segment of a posed-behavior subject, we timed the segment and scored four behaviors that have been mentioned as cues for judging deception: eye contact, smiling, postural shifts, and self-manipulations (that is, self-touches and self-scratches). Eye contact and smiling were timed and measured as a percentage of the length of the video segment; postural shifts and self-manipulations were counted and measured in frequency per minute. Each behavior was scored by two independent judges and the two scorings were averaged for the analyses reported below. In general, the scores showed satisfactory reliability (effective $r_s = .99, .96, .99, .67$, and $.81$ for length of segment, eye contact, smiling, self-manipulations, and postural shifts, respectively).

In principle, posing a weird behavior on-camera might incidentally affect the rates of other behaviors. In fact, an analysis that combined data from our American and Indian videotapes shows that posing did reduce postural shifts ($M_s = .50$ postural shifts per minute when posing a weird behavior vs. 1.18 when not), $t(13) = 2.37$, $p < .05$, but had no significant effect on eye contact, smiling, or self-manipulations (each $p > .20$). In principle, weird behaviors might increase apparent dishonesty by reducing postural shifts, but correlational analyses do not support this conjecture. In fact, the effect of posing a weird behavior on apparent dishonesty was unrelated to its effect on postural shifts ($r = .22$, $p > .25$) and unrelated to its effect on eye contact, smiling, and self-manipulations as well (all other $p_s > .15$). A separate analysis of Experiment 3 yielded similarly nonsignificant results (no significant effect of posing a weird behavior on eye contact, smiling, postural shifts, or self-manipulations), as did an analysis of Experiment 1. Of course, these nonsignificant findings should be regarded with caution in light of the small number of target subjects in the data analysis and the large number of incidental behaviors that might, in principle, be scored. Still, it seems that weird behaviors make a person look deceptive independent of any incidental effects.

General Discussion

Deception Judgment as Nonspecific Activation

Deception is inferred from weird nonverbal behaviors that contradict no verbalization, that have never been mentioned as

cues to deception judgment, that are not stereotypic of liars, and that liars (as well as truth tellers) rarely display. The tendency to infer deception from nonverbal norm violations is pervasive. It is displayed by literate and illiterate judges, Western and non-Western judges, judges who are relatively good at lie detection, and those who are not good. Naive judges infer deception from a variety of weird behaviors, not just one.

In holding that nonverbal expectancy violations arouse suspicion, our model of deception judgments builds on earlier work. Ellsworth and Langer (1976) regard staring as a “nonspecific activator”—a behavior that can stimulate perceivers to a variety of responses, depending on the social appropriateness of the stare. Ours is a complementary notion. If staring is a nonspecific activator, deception judgments are a “nonspecific activation”—a judgmental tendency aroused by socially inappropriate behavior.

As a nonspecific activation, deception judgments are not tied to any fixed set of actions—not to gaze aversion, not to speech disturbances, not to cues of tension or cognitive difficulty (Kurasawa, 1988), and not even to the odd-looking poses our subjects assumed. Here Americans inferred deception from eye closure, staring, arm raising, and shoulder raising, but we doubt that these actions would invariably suggest deceit. We can imagine situations in which these poses would not be weird; where, instead, they would be expected. Eye closure, for example, would be expected in a prayer group and arm raising in an exercise class. There, suspicion would be attached to different actions—not to eye closure but to eye opening, not to arm raising but to failures to raise the arm. Deception might even be inferred from odd-looking facial features (Mueller, Thompson, & Vogel, 1988).

In ways, deception judgments resemble lay psychiatric diagnosis (Jones et al., 1984). Like deception, mental illness is inferred from norm violations. As with deception, the signs of mental illness may be subtle and vague. Allegations of mental illness have a self-confirming nature. Having judged a person mentally ill, the perceiver can account for any action, seeing it as a pathological symptom. And so it is with deception judgments. As a “master attribution,” the hypothesis that someone is lying can explain anything—staring, gaze aversion, confession, and denial all can be construed as evidence of deceit.

Our findings highlight some of the obstacles to naive lie detection. Most people are good at lying. Through years of practice, they learn to inhibit blatant signs of deceit (C. F. Bond et al., 1985). Although there are probably no behaviors that accompany every deception in every situation (Kraut, 1980), perceivers have a naive faith in the existence of telltale deception cues. Wanting to believe that lies are obvious, they may miss the subtle forms of evidence that in fact denote deceit and falsely infer deception from behaviors that stand out.

Theoretical Implications of the Model

Having discussed the expectancy-violation model in relation to other theories, we consider the contribution of the model to understanding deception judgments. The model provides new insight into several issues: (a) the usual cues for inferring deception, (b) stereotypes about deception, (c) deception judgment

from verbal–nonverbal inconsistency, and (d) deception judgment in long-term relationships.

Often, deception is inferred from a small set of behaviors: from gaze aversion, for example, and from speech errors. One goal for the expectancy-violation model is to explain why these behaviors and not others commonly function as cues for judging deceit. According to the model, deception judgments are based on nonverbal behaviors that violate perceivers' expectations. To find cues from which deception is usually inferred, the model requires us to find norms that are usually violated.

Many of the norms that govern nonverbal interaction prescribe that a certain behavior be displayed with a certain frequency or at a certain level. If a number of people made suspicious claims, we could note how often a given behavior was displayed and calculate a mean behavior frequency. Often, the mean frequency of a behavior will not equal its normatively prescribed frequency. Nonverbal norms will prescribe that some behaviors (like speech errors) never be displayed, even though they are; and that others (like eye contact) be displayed more often than is usual. Theoretically, the more frequently a person displays a nonverbal behavior that norms discourage, the more dishonest the person will appear. The more frequently a person displays a nonverbal behavior that norms encourage, the more honest the person will appear.

Zuckerman, DePaulo, and Rosenthal (1981) meta-analyzed research on the behavioral basis of deception judgments. Our expectancy-violation model can accommodate their results. The meta-analysis showed that people are judged honest when they smile and make eye contact. Norms, we would argue, prescribe more smiling and eye contact than the average person displays. The meta-analysis showed that people are judged dishonest when they make speech errors, hesitate in the middle of speaking, and shift their posture. These behaviors, although often observed, are normatively proscribed.

People have stereotypes about liars, as self-reports have shown (Zuckerman, Koestner, & Driver, 1981). The expectancy-violation model can account for these, too. Over a large number of interactions, a perceiver will note that certain normative expectations are routinely violated: that people do not make as much eye contact as they should and that they regularly commit speech errors. The perceiver would judge these norm violators to be liars and come to store their characteristics in memory. In this conception, a culture's stereotype of the liar reflects the culture's most commonly violated nonverbal norms.

Perceivers infer deception from verbal–nonverbal inconsistency. They attribute deceit to people who look sad while saying they are happy (Friedman, 1979). They infer deceit from various interchannel discrepancies: from inconsistencies between verbal content and facial expression (Rotenberg et al., 1989); and from inconsistencies among the face, body, and tone of voice (DePaulo & Rosenthal, 1979; Zuckerman, Driver, & Koestner, 1982).

According to a traditional analysis, verbal–nonverbal inconsistency poses a logical puzzle. To resolve a contradiction between communications (Lightfoot & Bullock, 1990), perceivers believe the message "leaked" by nonverbal cues (Ekman & Friesen, 1969) and discount the inconsistent verbiage.

According to the present analysis, the inference of deception from verbal–nonverbal inconsistency is only a special case. There is a norm that prescribes consistency among a speaker's several channels of communication. Violations of the consistency norm make a perceiver wary, but so do violations of other norms. True, a scowl looks funny on a person saying that he or she likes someone, but so do actions (like shoulder and arm raising) that imply nothing about liking. As our evidence indicates, suspicions are raised by any fishy-looking behavior regardless of whether it is expressively related to a speaker's remarks.

Having studied the attribution of deception to strangers, we now venture some comments on deception judgments in long-term relationships. People often lie to preserve relationships. They lie when they have transgressed a relational partner's perceived beliefs about ethical conduct (Millar & Tesser, 1988). Partners are receptive to these fabrications: They are less likely to attribute deception to intimates than to casual acquaintances (McCornack & Parks, 1986). No doubt, people tend to believe their long-term partners because relationships entail the development of trust, but we wonder whether the truth bias in long-term relationships might also reflect a second factor—familiarity with the intimate's behaviors. Because long-term partners rarely violate our nonverbal expectations, to us they seldom look fishy. Sometimes, of course, intimates act in unexpected ways. These deviations may be idiosyncratic and far more subtle than the ones we staged. But to the long-term partner even a minute departure from custom can reveal that something is amiss. If intimates excel at lie detection, it is because of their long-term exposure to a baseline of truthful communications (Miller, Mongeau, & Sleight, 1986). They know what to expect.

Conclusion

Having found that lay deception judgments are barely more accurate than chance, psychologists may be tempted to abandon this line of inquiry, feeling that there is little to explain. Yet deception judgments have important consequences even when the judgments are wrong. In the study of naive lie detection, there have been many exposés of judgmental inaccuracy but few attempts to understand how these fallible judgments are reached. To promote this understanding, we offer a cross-culturally validated explanation of deception judgments: an expectancy-violation model.

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Received December 4, 1991

Revision received July 15, 1992

Accepted July 28, 1992 ■