

THE EFFECT OF PROBING ON DECEIVERS AND TRUTHTELLERS

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ABSTRACT: This study examined the effect of probing for additional information on the accuracy of deception detection. One hundred forty-eight experimental interactions were analyzed to see whether deceivers and truth-tellers behave differently when probed and whether probing improved deception detection. Probing produced a number of changes in nonverbal behavior, several of which differed between deceivers and truth-tellers. Probing may have communicated suspicion or uncertainty; therefore, deceptive sources were motivated to control their nonverbal demeanor to mask deception-related cues and appear truthful. Probing did not improve detection. Instead, probing receivers considered all sources more truthful. It is suggested that suspiciousness and prior knowledge may affect probing's efficacy.

An assumption underlying research on deception is that receivers attend to behavioral nuances in attempting to detect deception; however, deciphering nonverbal cues may make up only part of the detection process. Prior research shows that observers are rarely able to detect deception at above chance levels, even though nonverbal cues change when deception occurs (see also DePaulo, Stone, & Lassiter, 1985a; Kraut, 1980; Zuckerman, DePaulo, & Rosenthal, 1981). This has led several researchers to speculate that receivers must employ additional detection strategies such as probing for more information to detect deception accurately (DePaulo, Zuckerman & Rosenthal, 1980b; Knapp & Comadena, 1979; Kraut, 1980; Zuckerman, DePaulo, & Rosenthal, 1981). Despite this rather obvi-

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ous assertion, only one study (Stiff & Miller, 1986) has investigated the efficacy of probing. The present project was designed to examine the role of probing in deception detection by ascertaining whether probing (a) affects the sources' behavior and (b) improves honesty judgments.

Stiff and Miller (1986) predicted that probing questions elicit nonverbal cues that could aid deception detection. Instead, they found that probing produced only small differences between the nonverbal behavior of deceivers and truth-tellers. Furthermore, the nature of probes (accepting versus suspicious) affected sources' nonverbal behavior and observers' attributions of honesty. Suspicious probes produced fewer nonverbal arousal cues—fewer blinks and smiles and shorter response latencies—and higher ratings of truthfulness than accepting probes, irrespective of actual deceit. Thus neither accepting nor suspicious probes increased overall detection accuracy.

While their study provided a first look at probing, Stiff and Miller failed to collect data on baseline behavior prior to probing; therefore their results are open to two alternative explanations. First, only one of their two types of probing may have produced a change in anxiety and concomitant arousal cues. For instance, suspicious probes may have produced changes while accepting probes did not. Second, sources in the suspicious condition may have behaved differently than those in the accepting condition throughout the conversations, and the observed difference is a carry-over from baseline behavior, not an effect of probing.

Another shortcoming is that Stiff and Miller did not examine how the behaviors changed over time in the conversations. Recently, Buller and Aune (1987) showed that behaviors related to deception are dynamic. Some behaviors emerge early in deceptive conversations but dissipate in later periods. Others do not appear until the middle or end of the deceptive conversations. These authors concluded that very few deception-related behaviors are maintained throughout the conversation. It is likely that changes produced by probing also will be dynamic. Tests of probing, then, must examine both changes in the level of a behavior and the stability of those changes.

In explaining their results, Stiff and Miller proposed that, when confronted with probes that communicate suspicion, liars monitor and control their behavior in an attempt to appear sincere. A monitoring explanation is not unique to their study. Kraut and Poe (1980) speculated that deceivers can effectively manage their impressions to appear truthful and this skill accounted for the lack of differences between their deceivers and truth-tellers. Toris and DePaulo (1985, p. 1071) proposed that, in face-to-face interactions, deceivers may detect receivers' suspiciousness and manage

"their impressions even more carefully, and perhaps even actively [retaliate] with special antidetection strategies," producing lower detection accuracy. Hocking and Leathers (1980) suggested that deceivers control those nonverbal behaviors which most people stereotypically associate with deception. Consistent with this, Buller and Aune (1987) reported that deceivers encoded fewer arousal cues than truth-tellers and attempted to minimize initial changes in behavior.

Liars, though, may not be completely successful at appearing truthful. In Buller and Aune's study, deceivers did not eliminate all arousal cues nor constrain them from emerging as the deceptive conversations unfolded. DePaulo (DePaulo, Zuckerman, & Rosenthal, 1980a; DePaulo, Stone, & Lassiter, 1985b) argues that, when motivated to control deception cues, deceivers should be more successful in nonverbal channels with greater controllability, sending capacity, and feedback (Ekman & Friesen, 1969, 1974). That is, they should be able to control facial cues but display cues to deception in the body and voice. Thus it is likely that some deception-related cues will occur in response to probing; however, they may be fewer in number and shorter in duration as deceivers attempt to mask them.

The next issue is whether deceivers and truth-tellers manifest different changes when probed. A study by deTurck and Miller (1985) suggests that they will. In that study, arousal induced by deception produced changes which differed in degree or level from changes produced by arousal unrelated to deception. For example, deceivers displayed more hand gestures and longer response latencies, whereas aroused nondeceivers decreased their display of these cues. Also, deceivers increased their adaptors 10 times more than aroused nondeceivers and decreased their talking time twice as much. If one assumes that probing arouses truth-tellers, as well as challenges deceivers, then probing should produce changes in all sources, but deceivers should display a different degree of behavior change than truth-tellers.

In sum, behavior during probing should distinguish deceivers from truth-tellers, and differences are likely to be manifested in the magnitude, as well as the type, of behavior change. In addition, to the extent that sources faced with probes monitor and control their displays, differences between deceivers' and truth-tellers' behaviors should be greatest immediately following the onset of probing but should decrease over time as deceivers manage their behavior. It is possible, though, that a few deception-related changes will persist or emerge over time, particularly in less controllable channels such as the voice and body. The following study employed a cross-sectional interrupted time series design to explore the

changes in deceivers' and truth-tellers' behaviors when faced with probing questions. In addition, the effect of probing on attributions of honesty was examined.

Method

Overview

In 148 interactions, a receiver interviewed a source about her/his responses to a personality scale. After one minute of interaction, half of the receivers probed for additional information. Receivers completed a posttest which assessed honesty attributions. The nonverbal behavior of all sources was coded in 15-second time periods during the 30 seconds prior to and after the onset of probing. This constituted a cross-sectional interrupted time series design.

Participants

Two hundred thirty-nine (239) undergraduate students from a large southwestern university were recruited from lower division communication courses and given extra credit for participating. Ninety-one (91) participants served as receivers. Of these, 57 interacted with two sources, and 34 interacted with only one source (23 sources failed to appear).

Self-Report Measures

Source Pretest. The source pretest consisted of either Crowne and Marlowe's (1964) Social Desirability scale or Snyder's (1974) Self-Monitoring scale. Sources answered each question true or false and their responses were used as topics for the experimental interviews.

Source Posttest. Following each interaction, the source completed a two item posttest designed to check the deception manipulation. The first question asked sources whether they told the truth or lied and the second asked what percentage of their responses was truthful.

Receiver Posttest. After each interview, the receiver completed a 44-item version of Burgoon and Hale's (1987) relational message scale. Embedded in this scale were two items measuring attributions of honesty: He/she was honest; he/she was not sincere. They were summed to form an initial honesty attribution scale. After completing both interactions, the receiver was informed that the sources may have been lying and was asked to judge whether each source was telling the truth or lying. This was a second measure of the honesty attribution.

Procedure

Participants arrived at the research lab in groups of three. The experimenter explained that the study examined how people communicate in natural conversa-

tions. The sources were taken to a separate room where they completed their pretests. Meanwhile, the receiver was seated in one of two chairs positioned approximately 3.5 feet from each other.

The receiver was told that he/she would interview each of the sources separately about their answers to the personality scales; however, the actual purpose of the study was to see how people respond to different styles of questioning. In the *probing* condition, the receiver was asked to be a "confederate" and manipulate question-asking behavior. The receiver was instructed to begin by simply asking the source whether he/she answered true or false to each question. Then, when the experimenter walked through the room and into an adjoining room, the receiver was to change her/his questioning, by first asking for the true-false answer and then asking why the source gave that answer. The receiver was to ask follow-up questions until he/she understood the reason for the answer. Each successive answer was to be probed with indepth questions until the experimenter stopped the interaction. In the *no probe* condition receivers were told to read each question and ask whether the source answered "true" or "false," but not to discuss any of the answers. The receiver was not informed that deception was being manipulated.

Immediately preceding the interaction, the source was informed that the receiver was going to interview her/him about the responses to one of the personality scales. For truthful sources, the final instruction was to answer the interviewer honestly. For deceptive sources, the final instruction was to lie about all the answers.

When the source was reunited with the receiver, the experimenter briefly reviewed the instructions and signalled the receiver to start the interview. After one minute of interaction, the experimenter entered the room and crossed into an adjoining room. After another minute, the experimenter stopped the interview. The receiver and source completed their posttests. During the interaction, the experimental assistant recorded the source's true/false responses, and these were compared to the source's answers on the pretest to check the deception manipulation. In addition, the behavior of the source was videotaped during the interaction.

The second interview proceeded in the same fashion. The receiver completed the final posttest revealing the deception manipulation at the conclusion of this interview. Roles, order of sources, personality scales, deception condition, and probe condition were alternated to avoid order effects.

Nonverbal Behavior Measures

Eight undergraduate students coded the nonverbal behaviors listed in Table 1. Behaviors were coded in 15-second intervals, beginning 30 seconds prior to the first probe and continuing 30 seconds after the first probe. A combination of frequency counts (speech errors, speaking turns, interruptions (simultaneous talk resulting in turn exchange), talkovers (simultaneous talk not resulting in turn exchange), responses to a question, gazes, shrug emblems, illustrators, adaptors (Friesen, Ekman, & Wallbott, 1979), head nods, smiles, and head shakes), timings (talking time, response latency, gazing time), and 5-point bipolar ratings (facial animation, facial pleasantness) were performed. Ebel's intraclass correlations were calculated to measure interrater reliability and were sufficiently high on all nonverbal behaviors except facial pleasantness which was omitted (Table 1).

TABLE 1

Interrater Reliability: Ebel's Intraclass Correlations

Behavior	Intraclass Correlation		Intraclass Correlation
Interruptions	.78	Shrug Emblems	.88
Talkovers	.82	Illustrators	.90
Pauses	.94	Brief Face & Head Adaptors	.65
Speech Errors	.78	Long Face & Head Adaptors	.90
Speaking Time	.97	Brief Body Adaptors	.74
Number of Turns	.92	Long Body Adaptors	.71
Response Latency Time	.93	Brief Object Adaptors	.77
Number of Responses	.98	Long Object Adaptors	.86
Nodding	.83		
Head Shaking	.89	Postural Shifts	.94
Smiling	.79	Gazing Time	.93
Facial Animation	.64	Number of Gazes	.85
Facial Pleasantness	.26		

Results*Manipulation Check*

The deception manipulation was successful. In the truth condition, 39 sources provided a truthful response to every "true/false" question. The 35 truthful sources who did not provide truthful answers to all questions averaged only 1.89 deceptive responses to an average of 16.6 questions per interview. Truthful sources also reported that on average 91.3% of their responses to the receivers were true. In the deception condition, 34 sources gave deceptive responses to every "true/false" question. The 37 deceptive sources who did not provide deceptive answers to all questions averaged only 3.0 truthful responses to an average of 15.1 questions per interview. Deceptive sources said that 16.0% of their responses were truthful.

Behavioral Analysis

Statistical analysis. Cross-sectional interrupted time-series analysis (Simonton, 1977) was performed on the behaviors in Table 1. Analyses were conducted separately on truth-tellers and deceivers, using the following regression equation:

$$Y_t = b_1 + b_2X_t + b_3Z + b_4t + b_5X_t + b_6X_t + b_7Zt + b_8X_tZt$$

In the analysis, b_1 is the pre-intervention intercept of the control (no probe) group; b_2 is the estimate of the difference between the pre- and post-intervention intercept of the control group (i.e., controls for historical artifact); b_3 is the estimate of the difference between the pre-intervention intercepts of the control and experimental (probe) groups (tests equivalence of control group); b_4 is the estimate of the pre-intervention slope of the control group (historical artifact); b_5 is the estimate of the difference between the post-intervention intercepts of the control and experimental groups (effect of intervention on level of behavior); b_6 is the estimate of change in the control group's slope after the intervention (historical artifact); b_7 is the estimate of the difference between the pre-intervention slopes of the control and experimental groups (equivalence of control group); and b_8 is the estimate of the difference between the post-intervention slopes of the control and experimental group (effect of intervention on rate of behavior).

A necessary condition for applying the preceding equation is equivalence between the experimental and control groups (i.e., $b_3 = b_7 = 0$). For behaviors which had nonequivalent control groups,¹ the regression analyses were performed independently on each of the four groups in the study—probed truthtellers, control (i.e., no-probe) truthtellers, probed deceivers, and control deceivers—using the following equation (Simonton, 1977):

$$Y_t = b_1 + b_2X_t + b_3t + b_4X_t$$

In this analysis, b_1 is an estimate of the pre-intervention intercept, b_2 is an estimate of the difference between the pre- and post-intervention intercepts (effect on level of behavior), b_3 is an estimate of the rate of change in the behavior before the intervention, and b_4 is an estimate of the difference between the pre- and post-intervention regression slopes (effect on rate of behavior). Nonverbal behaviors demonstrating significant auto-correlations were corrected prior to the analysis (Simonton, 1977).

In the following report, only the significant effects of probing on level and rate (i.e., slope) of each behavior are presented.

Vocalic behavior. The analyses on vocalic behavior revealed several effects due to probing and a few differences between truthtellers and de-

¹Nonequivalent control groups existed for number of turns, number of responses (deceivers only), gazing time, number of gazes, brief face and head adaptors (truthtellers only), postural shifts (truthtellers only), head nodding (truthtellers only), smiling, head shaking, and facial animation.

ceivers. Probing significantly increased the number of speech errors (truth-tellers $t(1,272) = 2.24, p < .05$; deceivers $t(1,267) = 2.18, p < .05$) and pauses (truth-tellers $t(1,272) = 2.65, p < .05$; deceivers $t(1,267) = 3.47, p < .05$). Truth-tellers made more errors than deceivers throughout the conversations, while truth-tellers paused more than deceivers only during the periods preceding probing. After probing commenced, deceivers increased their pausing rate to match that by truth-tellers (Table 2). Probing also caused sources to talk longer (truth-tellers $t(1,272) = 5.82, p < .05$; deceivers $t(1,267) = 4.33, p < .05$). Although it naturally took more time to explain an answer than to reply true or false, deceivers consistently talked for less time than truth-tellers and displayed smaller gains in talking time when responding to probes. This suggests that deceivers were consistently more reticent than truth-tellers (Table 2).

The time-series analysis on number of responses to questions showed that deceivers answered more questions than truth-tellers immediately following the onset of probing (truth-tellers $t(1,272) = 1.93, p > .05$; deceivers $t(1,142) = 3.20, p < .05$) (Table 2). This may be due to deceivers providing shorter or less complete answers than truth-tellers. By the last time period, though, deceivers and truth-tellers responded to the same number of questions (significant post-interruption decreasing slope for deceivers $t(1,142) = 7.24, p < .05$). The analysis of response latency, however, showed that latency was not affected by probing, and truth-tellers and deceivers encoded similar length response latencies throughout the conversations. However, truth-tellers may have interrupted receivers more when responding to probes than deceivers (post-interruption slope for truth-tellers $t(1,272) = 1.71, p = .08$).

Eye contact. Probing increased eye contact by deceivers, $t(1,142) = 2.24, p < .05$, but not by truth-tellers, $t(1,156) = 1.70, p > .05$ (Table 2). Further, it appears that deceivers in the probing condition engaged in less eye contact throughout the conversations than truth-tellers (Table 2). Even when they attempted to increase it during probing, they did not display quite as much eye contact as truth-tellers.

Facial behavior. Facial animation may have been altered by probing (Table 2). While the analysis showed no significant effect for probing on deceivers' facial animation (effect of probing on level $t(1,142) = .34, p > .05$ and rate of animation $t(1,142) = 1.40, p > .05$), facial animation decreased when deceivers were not probed, (level $t(1,102) = 2.77, p < .05$; rate $t(1,102) = 6.90, p < .05$). Also, truth-tellers' facial animation decreased in the latter half of the interactions, $t(1,156) = 1.98, p < .05$. Thus probing

TABLE 2

Nonverbal Behavior by Time Period

Behavior	Condition		Time Period			
			1	2	3	4
Pauses	Truth	Probe	.09	.31	1.59	1.67
		Control	.14	.20	.27	.39
	Deception	Probe	.03	.12	1.53	1.59
		Control	.14	.18	.25	.16
Interruptions	Truth	Probe	.00	.02	.11	.05
		Control	.00	.00	.00	.00
	Deception	Probe	.00	.00	.05	.08
		Control	.00	.03	.03	.02
Speech Errors	Truth	Probe	.06	.03	.58	.57
		Control	.00	.00	.00	.00
	Deception	Probe	.01	.01	.36	.40
		Control	.00	.07	.03	.00
Speaking Time	Truth	Probe	1.28	2.22	9.41	9.07
		Control	.87	1.07	.90	1.09
	Deception	Probe	.89	1.47	7.05	8.26
		Control	.67	.85	.83	.96
Number of Responses	Truth	Probe	2.23	3.09	2.35	2.30
		Control	2.26	3.08	3.14	3.14
	Deception	Probe	2.08	3.30	2.84	2.31
		Control	1.93	2.70	2.51	2.54
Gazing Time	Truth	Probe	3.55	5.53	10.30	11.27
		Control	6.32	8.77	8.42	7.79
	Deception	Probe	3.08	4.40	9.32	9.52
		Control	6.79	9.46	9.41	9.20
Brief Face & Head Adaptors	Truth	Probe	.02	.18	.23	.16
		Control	.00	.00	.07	.04
Head Nodding	Truth	Probe	1.09	1.83	1.02	1.19
		Control	.75	1.05	.76	.75
Facial Animation	Truth	Probe	1.73	2.55	3.04	3.24
		Control	3.19	4.47	4.32	4.26
	Deception	Probe	1.74	2.45	3.19	3.42
		Control	3.09	4.41	4.38	4.26

may have motivated deceivers to maintain their pre-probe level of facial animation.

Head behavior. Truth-tellers significantly decreased their display of head nodding—a sign of agreement—when probed, $t(1,156) = 2.32$, $p < .05$ (Table 2). By contrast, deceivers' use of head nods was not significantly affected by probing, $t(1,261) = .60$, $p > .05$ (Table 2).

Summary. The results showed that probing had a significant impact on the behavior of all sources. Some of the behavior changes were a function of the qualitative change in the conversation once probing began and were manifested by both deceivers and truth-tellers. In particular, probing increased speech errors, pausing, and talking time. Other changes brought about by probing seemed to be influenced by whether sources were telling the truth or deceiving and suggested that deceivers may have monitored and controlled their behavior in response to probing more than truth-tellers. Specifically, when probed deceivers increased their gazing and maintained their facial animation. Further, deceivers made more responses and interrupted receivers less than truth-tellers. Finally, a few nonverbal behaviors distinguished deceivers from truth-tellers throughout the conversation, including fewer speech errors and pauses, and shorter responses by deceivers. These differences also suggested that deceivers monitored and controlled their presentations.

Attributional Analysis

Statistical analysis. The two honesty attribution measures were analyzed by 2 (deception) \times 2 (probing) within-subjects ANOVAs, employing a sequential sums-of-squares method. The sequential sums-of-squares method increased the power of the test on the probing factor, by including all interviewers in the equation. When testing the within-subjects deception factor, the analysis omitted interviewers who did not interact with two sources.

Honesty attributions. There was a significant main effect for probing on the two-item honesty measure, $F(1,89) = 4.45$, $p < .05$. Receivers who probed judged sources to be more truthful ($M = 11.25$) than receivers who did not probe ($M = 10.19$). This honesty judgment was not affected by the deception condition, $F(1,55) = 1.17$, $p > .05$, or by the interaction between deception and probing, $F(1,55) = .59$, $p > .05$. Thus probing did not increase detection accuracy; it merely increased attributions of truthfulness.

The within-subjects ANOVA produced no significant main effects on the single dichotomous honesty judgment receivers made on the final posttest: probing $F(1,88) = .31, p > .05$; deception $F(1,55) = 2.73, p > .05$. The interaction between probing and deception condition also was nonsignificant, $F(1,55) = .34, p > .05$.

Discussion

Effects on Behavior

This study examined the impact of probing on the nonverbal behavior of truth-tellers and deceivers and on receivers' honesty attributions. Behaviorally, probing changed the nature of all conversations, by shifting from a very restrictive format involving single-word answers (i.e., "true" or "false") to a more extended discussion requiring longer responses.

However, probing also distinguished deceivers from truth-tellers. One explanation for these changes is that deceivers were more concerned with controlling their nonverbal behavior than truth-tellers. As mentioned, motivated deceivers may be able to control behaviors in those channels more amenable to control, like the face, but unable to control behaviors in less controllable channels, such as the body and voice (DePaulo et al., 1980a; DePaulo et al., 1985b). This greater control over the face is evident in gaze, which deceivers increased when probed. Deceivers may have been motivated to control gaze by the strong social stereotype linking less eye contact to deception (Hocking & Leathers, 1980; Hocking, Miller, & Fontes, 1978; Zuckerman, Koestner, & Driver, 1981; see Zuckerman, DePaulo, & Rosenthal, 1981, and Zuckerman & Driver, 1985, for similar behavior by motivated liars).

That deceivers talked less and responded to more questions than truth-tellers when probing first commenced suggests that deceivers were more reticent than truth-tellers. Reticence may have been a strategy to avoid providing information which deceivers feared would reveal their deceit. However, by being reticent, they may have provided insufficient answers, causing receivers to ask additional follow-up questions. By contrast, truth-tellers may have provided more information and therefore more adequate answers, stimulating follow-up comments rather than follow-up questions from receivers. Deceivers, though, may have noticed the inadequacy of their replies and adjusted them accordingly, since the number of responses by deceivers matched the number of responses by truth-tellers in the last time period.

Reticence also may account for less frequent interruptions by deceivers. Deceivers may have been content to allow receivers to ask entire questions, rather than respond hurriedly. Alternately, the lack of interruptions may have stemmed from deceivers' need to formulate deceptive responses. Prior research has found that deceivers take longer to respond to questions (cf., Zuckerman & Driver, 1985), a difference attributed to the higher cognitive effort required to formulate deceptive responses. While the current experiment did not find a difference in response latency, it is possible that deceivers took full advantage of the time needed to ask a question to formulate their responses. However, deceivers may have made a point of responding immediately after the question finished to mask their deceit, since response latencies are stereotypically associated with deceit (Hocking et al., 1978; Zuckerman, Koestner, & Driver, 1981). By contrast, truth-tellers required less time to formulate a reply and as a result often responded before questions were completed. Thus, deceivers actually took more time to answer than truth-tellers, but given the way truth-tellers behaved, this hesitancy appeared in the form of less interruptive behavior than as longer silences following a question.

Several of the behavioral changes produced by deception, irrespective of probing, further imply that deceivers monitored and controlled their nonverbal presentation. Increased speech errors and pauses, and longer responses, are stereotypically associated with deception (Hocking & Leathers, 1980; Hocking et al., 1978; Zuckerman, Koestner, & Driver, 1981); therefore, deceivers may have been motivated to inhibit these cues. On the other hand, that deceivers seemed to gaze less throughout the conversations may have reflected their anxiety (Zuckerman, DePaulo, & Rosenthal, 1981; Zuckerman & Driver, 1985). Even more interesting is the fact that deceivers actively increased gazing when probed but were unable to match the eye contact exhibited by truth-tellers. This supports Buller and Anne's (1987) contention that motivated deceivers are not entirely successful at controlling all facets of their nonverbal demeanor.

The behavioral analysis, then, showed that probing changed the nature of conversational behavior by requiring longer, more elaborate responses. However, probing also caused deceivers to modify their nonverbal behavior in order to appear more truthful, perhaps because the act of probing communicated suspicion, disbelief, or uncertainty about sources' responses. Moreover, deceivers actually may have appeared more truthful than truth-tellers, not only in response to probes but throughout the conversations. Deceivers, though, did not achieve entirely truthful presentations.

One qualification to these data is that by measuring only two time segments before and after probing, the analysis did not test for curvilinear

trends in behavior changes (i.e., whether changes persisted or dissipated). Therefore, the lifespan of each behavior change is not known. A second concern is whether the deception task was sufficiently arousing to generate deception apprehension. Deceiving a partner who has the ability to interact should be more arousing than simply deceiving an observer (Buller & Aune, 1987). Moreover, the shift from true/false answers to elaborate explanations should have been arousing, since deceivers may have felt successful during the baseline period where their answers were unchallenged.

Effects on Honesty Attributions

Given the mixed set of nonverbal cues, it is not surprising that probing did not aid deception detection. By communicating suspicion or uncertainty about the sources' responses, probing may have caused both deceivers and truth-tellers to present some cues indicative of truthfulness. And, even though deceivers' modified their behaviors differently from those of the truth-tellers, receivers may have been misled by these truth-related cues. Faced with mixed messages, receivers may have discounted the deception cues, especially since they had no contextual cues that suggested deception as a possible explanation for the changes in nonverbal behavior (DePaulo et al., 1985a). That is, without situational cues to deception, receivers relied on their general assumption of veracity (Zuckerman, DePaulo, & Rosenthal, 1981) and attributed honesty to sources whom they probed, because these sources encoded behaviors linked to stereotypes of truth-tellers. By contrast, sources who were not probed may have exerted less control over their presentations, because they received a false sense of success when receivers did not pursue their reasons for the "true/false" answers.

The question that remains is whether probing can be an effective detection strategy. While the present data do not paint a very optimistic picture, two design decisions may have reduced probing's efficacy. First, the present experiment used strangers. The efficacy of probing is predicated on the idea that probes obtain additional information with which to check the veracity of source's statements. It follows that receivers with more knowledge about the source should be able to detect deception because they can recognize changes in behavior (Brandt, Miller, & Hocking, 1980a, 1980b, 1982) and verify the verbal portion of a response. The strangers in this experiment may have been handicapped by their lack of prior knowledge about the sources when attributing deception, making probing less efficacious. Likewise, the true/false responses prior to probing may have

provided limited knowledge of baseline behavior and further reduced the effectiveness of probing for strangers.

The second design decision that may have affected detection was to leave receivers naive to deception. It is possible that suspicion would improve the efficacy of probing. Suspicious receivers may pay closer attention to nonverbal channels likely to leak deception clues, such as vocal cues, and they may be more sensitive to the channel discrepancies arising from deceivers' attempts to minimize deception cues (Zuckerman, Spiegel, DePaulo, and Rosenthal, 1982). In addition, suspicious receivers may ask more challenging, pointed questions that trap deceivers. Challenging questions also may overmotivate deceivers to control their behaviors, resulting in substantial departures from truth-tellers' behavior or mixed messages produced by successfully controlling some behaviors but not others (Buller & Aune, 1987; DePaulo et al., 1985b).²

In sum, probing caused deceivers to manage their nonverbal presentations and minimize behaviors stereotypically associated with deception. As a result, probing did not improve deception detection, rather probers were more convinced that all sources were truthful. The utility of probing as a detection strategy may lie in how much prior knowledge the receiver possesses about the source, both in terms of baseline behavior and background information. In addition, suspicion may be instrumental. Sources may perceive suspicion in probes and manage their presentation. Suspicion also may affect how receivers probe and process responses.

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²Prior knowledge and suspicion do not guarantee probing efficacy. Receivers may be hesitant to attribute deception to well-known partners (Bauchner, 1978; Buller, 1987; McCornack & Parks, 1985; Miller, Bauchner, Hocking, & Brandt, 1981), because with greater intimacy comes an assumption of truth. Thus, probing may be effective only with acquaintances and friends, but not with intimates. Similarly, challenging questions from suspicious receivers may simply improve deceivers' control over nonverbal and verbal cues (Stiff & Miller, 1986) or suspicion may simply make receiver more skeptical of deceivers and truth-tellers, alike (Toris & DePaulo, 1985). Still, both factors warrant examination before making final conclusions about the efficacy of probing.

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