

How People Really Detect Lies

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A primary focus of research in the area of deceptive communication has been on people's ability to detect deception. The premise of the current paper is that participants in previous deception detection experiments may not have had access to the types of information people most often use to detect real-life lies. Further, deception detection experiments require that people make immediate judgements, although lie detection may occur over much longer spans of time. To test these speculations, respondents (N = 202) were asked to recall an instance in which they had detected that another person had lied to them. They then answered open-ended questions concerning what the lie was about, who lied to them, and how they discovered the lie. The results suggest people most often rely on information from third parties and physical evidence when detecting lies, and that the detection of a lie is often a process that takes days, weeks, months, or longer. These findings challenge some commonly held assumptions about deception detection and have important implications for deception theory and research.

Deception detection has been a major focus of research on deceptive communication, and a large literature spanning several decades exists on the topic.¹ The results of this research are remarkably consistent, leading to several commonly accepted conclusions. Despite both the sheer quantity of research and the consistency of findings there is a history of researchers voicing dissatisfaction with various features of earlier studies. With few exceptions, altering various limiting features of research designs has had little impact on the general conclusions drawn from the literature. The failure of numerous suspected moderators to change the basic character of the collective results has surely enhanced researchers' confidence in the conclusions drawn from the literature.

Traditional deception detection research and its critics alike, however, have shared one common and unquestioned assumption. Virtually all research on human deception detection is based on the implicit or explicit premise that people detect deception in others, at the time the lie is told, based primarily on the nonverbal and verbal behaviors of the person whose message is under scrutiny. This paper questions this pervasive assumption.

The current study contends that previous research on deception detection has deprived people of the types of information most commonly used when detecting lies in many nonresearch settings. Specifically, it is suspected that people often rely on information from third parties, the consistency of statements with prior knowledge, the consistency of messages with physical evidence, or confessions when rendering judgments about the veracity of others' messages. Such information is not available to participants in most deception detection experiments. Therefore, previous detection experiments may differ in important ways from participants' nonre-

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search deception detection experiences, and the results of deception detection research may have limited application to nonresearch settings. That is, previous detection experiments may have forced people to make decisions differently than they would have outside the research laboratory.

Central to the current argument is the contention that people most often rely on information other than the verbal and nonverbal behaviors of the liar when deciding if they have been deceived. The study reported here offers a test of this speculation. Before describing this study, the literature on deception detection is reviewed, and the rationale for the current study is developed more fully.

Traditional Research on Deception Detection

Although there is a large and diverse literature on deception detection accuracy, the vast majority of experiments use variations on the same basic experimental design (Miller & Stiff, 1993; Park & Levine, 2001; Vrij, 2000). One group of participants is recruited to serve as message sources. Sources are either instructed or induced to either lie or tell the truth, or both. A different group of participants is recruited to judge the honesty of the sources' messages. Judges are typically exposed to a number of messages where half of the messages are true and the other half are lies. Each message is judged for honesty, most often with a dichotomous truth-lie judgment. Accuracy is then calculated as the proportion of correct truth-lie judgments to total judgments.

The consensus among deception scholars is that people's ability to distinguish truths from lies tends to be significantly, but only slightly, better than chance levels. Across studies, meta-analysis indicates that the mean accuracy rate is about 57% (Kraut, 1980), and literature reviews conclude that the accuracy rates reported in individual studies almost always fall within the range of 45% to 70% (e.g., Kalbfleisch, 1994; Miller and Stiff, 1993; Vrij, 2000). A review of the literature shows that these conclusions are almost universally accepted (e.g., Burgoon, Buller, Ebesu, & Rockwell, 1994; DePaulo, Kirkendol, Tang, & O'Brien, 1988; Feeley, deTurck, & Young, 1995; Kalbfleisch, 1994; Millar & Millar, 1995; Stiff & Miller, 1986; Vrij, 1994).

Perhaps the most widely accepted explanation for poor performance in deception detection is that research-naïve people seem to focus on the wrong behaviors when trying to distinguish truths from lies (Miller & Stiff, 1993; Stiff & Miller, 1986). Correlates of deception have been isolated (e.g., Kraut, 1980; Zuckerman, DePaulo, & Rosenthal, 1981), as have several behaviors that research-naïve participants tend to rely upon when making deception judgments (e.g., Stiff & Miller, 1986; Zuckerman et al., 1981). When comparing the "authentic" deception cues to the behaviors that people tend to use, it appears that people are often influenced by some behaviors that lack predictive utility and people often ignore other diagnostically useful behaviors (Fiedler & Walka, 1993; Miller & Stiff, 1993).

The other well documented and commonly accepted finding from deception detection research is the truth-bias (McCornack & Parks, 1986; originally labeled the *truthfulness bias* by Zuckerman, DePaulo, et al., 1981). Truth-bias refers to the tendency to judge more messages as truths than lies (Anderson, Ansfield, & DePaulo, 1997). Independent of actual message veracity, individuals are much more likely to ascribe truth to other's messages than deceit (Levine, Park, & McCornack, 1999; Zuckerman, DePaulo, et al., 1981). Consequently, people tend to be more

accurate at judging truths than lies, and accuracy rests on the percentage of the messages that are truths and lies (Levine et al., 1999; Park & Levine, 2001).

Previous Criticisms and Extensions of Traditional Research

Several limitations in older deception detection studies have been addressed in more recent research. For example, many older studies used participants who were not acquainted and were not allowed to interact face-to-face, where the deception was sanctioned by the researcher, and where only low-stakes lies were studied. More recent research has addressed each of these concerns.

One of the first critiques of deception detection research was that sources and judges in deception detection experiments were most often unacquainted, and that detection accuracy might be higher if judges had relational or idiosyncratic knowledge of the message source (e.g., Brandt, Miller, & Hocking, 1982; Comadena, 1982; Miller, Mongeau, and Sleight, 1986). Almost twenty years of research, however, suggests that familiarity and relational closeness have, at best, only modest effects on accuracy. The effects of familiarity on accuracy tend to be small (Feeley et al., 1995) and the effect of relational closeness is mediated by confidence and truth-bias (DePaulo, Charlton, Cooper, Lindsay, & Muhlenbruck, 1996; Levine & McCornack, 1992; McCornack & Parks, 1986).

A second critique of older studies is that participants had only rarely been allowed to interact face-to-face (Buller & Burgoon, 1996; Stiff & Miller, 1986). These researchers reasoned that accuracy in face-to-face interaction might be different from watching a videotaped source because interaction is more cognitively demanding and because communication adaptation would change the pattern of observable behaviors. Here too, subsequent research has shown the findings of traditional research to be remarkably robust. Although face-to-face interaction does seem to increase truth-bias slightly (Buller, Strzyzewski, & Hunsaker, 1991), accuracy remains slightly, but significantly, above chance (Burgoon, Buller, Dillman, & Walther, 1995).

A third commonly voiced concern has been that lies are often sanctioned by the researcher (Miller & Stiff, 1993). This argument holds that liars telling sanctioned lies should be less aroused than those telling unsanctioned ones. Consequently, unsanctioned lies should be more easily detected than sanctioned lies, and detection accuracy might be better if more researchers studied unsanctioned lies. The only study to compare explicitly sanctioned and unsanctioned lies, however, found that sanctioning made little difference (Feeley & deTurck, 1998).

Most recently, attention has started turning toward the distinction between everyday lies and high-stakes lies (e.g., DePaulo, Kashy, Kirkendol, & Epstein, 1996; Ekman, O'Sullivan, & Frank, 1999). High stakes lies are those in which the consequences of detection are severe (Vrij, 2000). Similar to the sanctioning argument, it can be argued that accuracy should be higher for high stakes lies because there should be more nonverbal leakage when the stakes are high. To date, there is not sufficient research on high stakes lies to draw firm conclusions, although early results suggest that accuracy may be higher for high stakes lies under some conditions (Ekman et al., 1999).

The Assumed Centrality of Verbal and Nonverbal Behavior in Deception Detection

As is evident in the preceding review of the literature, there exists a ubiquitous and unquestioned assumption regarding the centrality of verbal and especially nonver-

bal behavior in deception detection (e.g., see Buller & Burgoon, 1996; Miller & Stiff, 1993; Vrij, 2000; Zuckerman, DePaulo, et al., 1981). Whether implicit or explicit, virtually the entire literature has operated under the assumption that people rely primarily on the verbal and nonverbal behaviors of the message source in deciding the honesty of that source. The pervasiveness of this assumption can be seen in the questions researchers have asked, the research designs used to study deception detection, the directions the literature has taken, and the theories used to predict and explain the results.

First, the research designs created to study deception detection have clearly been guided by implicit assumptions concerning the primacy of source behaviors. Virtually every prior deception detection experiment has precluded sources of information other than verbal and nonverbal source behaviors and (in fewer cases) receiver prior knowledge. Diagnostically useful information from third parties and knowledge of physical evidence are excluded by design. Further, almost all studies require judges to render a judgment soon after exposure to a source's message. Such design decisions are only reasonable if it is assumed that observing source verbal and nonverbal behavior is sufficient for making veracity judgments.

Second, the assumed importance of verbal and nonverbal communication can be seen in the research questions asked in the literature and the directions the literature has taken. Early detection research (e.g., Ekman & Friesen, 1974; Maier & Thurber, 1968) varied the type of behavior that detectors had witnessed. Research investigating familiarity predicted people familiar with a source's typical pattern of behaviors would enhance accuracy (Brandt et al., 1982; Miller et al., 1986). Research on detection in face-to-face interaction has focused on adaption patterns and accuracy (e.g., Burgoon et al., 1994; Burgoon et al., 1995). Researchers studying unsanctioned and high stakes lies argue that these factors affect accuracy because they should affect the verbal and nonverbal behavior displayed by sources (Ekman et al., 1999; Feeley & deTurck, 1998). Finally, studies of deception detection training (e.g., deTurck & Miller, 1990; Fiedler & Walka, 1993) train judges to look for verbal and nonverbal behaviors. These questions are all predicated on the assumption that source behaviors are the key to detection accuracy.

Finally, the pervasiveness of the source behavior assumption can be seen in their centrality to the theories and explanations that have guided most deception research. Ekman's (Ekman & Friesen, 1974) leakage hypothesis, Zuckerman, DePaulo, et al.'s (1981) Four Factor Theory, DePaulo's (DePaulo et al., 1988) motivation impairment effect, and Buller and Burgoon's (1996) Interpersonal Deception Theory all showcase the importance of source verbal and nonverbal behaviors in how deception has been understood.

Evidence for the Primacy of Verbal and Nonverbal Behaviors

Readers familiar with the deception literature may well respond to the arguments advanced here by asserting that there is a surfeit of empirical evidence documenting that people rely on the verbal and nonverbal behavior of message sources when making veracity judgments. Careful examination of this evidence, however, suggests that it is not as strong as is often assumed.

Direct evidence that research naïve people rely on source verbal and nonverbal behavior when making truth-lie judgments comes from research using three different approaches (Feeley & Young, 2000; Zuckerman, DePaulo, et al., 1981). The first paradigm has message recipients self-report the cues they used when making

veracity judgments (e.g., Feeley & Young, 2000; Zuckerman, Koestner, & Driver, 1981). The second type of study (e.g., Stiff & Miller, 1986) codes actual source behaviors and correlates those behaviors with the judgments made by message recipients. In the third approach specific verbal or nonverbal behaviors are experimentally induced (e.g., Henningsen, Cruz, & Morr, 2000) to see how they affect truth and lie judgments.

All three lines of evidence suggest that, in general, message recipients rely on verbal and nonverbal behaviors of message sources, although the different paradigms often yield different conclusions regarding specific behaviors (Zuckerman, DePaulo, et al., 1981). Nevertheless, all three approaches suffer from a common limitation. All three preclude, by design, alternative sources of information from consideration. That is, all three demonstrate that if the verbal and nonverbal behavior of message sources is the only information participants have to go on when making veracity judgments, and individuals are required to make truth-lie judgments, then they use this information. But, what if message recipients had access to other types of information? Would they still base their judgments exclusively on source behaviors, or might alternative types of information weigh more heavily?

Research Questions

The reviewed literature documents a longstanding and widespread assumption in deception research that people rely primarily on the verbal and nonverbal behavior of message sources when making veracity judgments. This assumption has guided what previous researchers have chosen to study (and consequently the directions the literature has taken), how researchers have designed their research, and the theoretical accounts offered to predict and explain the findings. This assumption is so fundamental and so pervasive that the conclusions drawn from more than thirty years of research rest squarely upon it.

Although there exists substantial empirical evidence consistent with the reliance on nonverbal and verbal behaviors, alternative possibilities have been precluded by the very methods used to generate this evidence. Therefore, the validity of the source behavior assumption is open to question, and alternative methods are required to test some previously ignored alternatives.

As active deception researchers, we have sensed a growing dissatisfaction with the state of the deception literature. Authors are beginning to question if nonverbal behaviors are linked to deception. The writer of a recent anonymous review boldly asserted that deception detection research has been "the greatest waste of effort and resources in the history of social science, and was doomed from the beginning," and another reviewer has recently remarked that "perhaps we need to stop looking to prior deception literature for illumination about deception processes." Perhaps it is time to question the strongly held assumptions about deception.

We speculate that people rely on information from third parties, the consistency of statements with prior knowledge, the consistency of messages with physical evidence, or confessions when rendering judgments about the veracity of others' messages. We initially came to question the source behavior assumption through the nonscientific methods of intuition, nagging suspicions, and informal observations of nonrepresentative, even fictitious, interactions.

Consider a lie by a suspect in a television crime drama. How do the police detectives or prosecuting attorneys uncover the truth? They rely on witnesses and informants. They gather physical evidence. They compare the suspect's story with

what they know from other sources. They pressure or trick the suspect into confessing. Perhaps everyday people in everyday situations do many of the same things.

To summarize, we suspect that research participants in prior studies relied on the verbal and nonverbal behaviors of the message source because the research procedures required them to make an immediate veracity judgment, and because they had no other information available. Poor accuracy in such situations is not surprising. Further, we propose that these restraints often do not apply in nonresearch lie detection situations. These, however, are empirical questions. Therefore, we raise the following questions. What types of information do people report using when detecting lies in non research settings? Do people detect non-research lies at the time the lies are told, or are lies typically uncovered long after the lie was told? In short, we offer an empirical test of the assumption that people detect deception in others, at the time the lie is told, based primarily on the nonverbal and verbal behaviors of the person whose message is under scrutiny.

Method

Participants

The participants were 202 undergraduate students enrolled in classes at a large Midwestern university. Seventy-two percent of the participants were female. The respondents ranged in age from 17 to 33 ($M = 20.98$, $SD = 1.55$). All participants received extra credit in exchange for their participation.

Procedures

Each participant was asked to recall a recent situation in which they had discovered that someone had lied to them. They were instructed to take time and recall as much information as they could about what happened, and to keep this situation in mind while answering a short questionnaire containing five open-ended questions and two demographic items. Participants were asked to provide as much detail as they could, and ample space for the answers was given. They were told to ask questions if need be. Finally, they were informed that if they could not recall discovering a lie, that they could complete another short survey for an equal amount of extra credit. Eight (4%) of the 202 participants could not recall discovering a lie, and the remaining 194 participants completed the questionnaire. Following completion of the questionnaire, the participants were debriefed and thanked.

Measurement

Participants who could recall discovering a lie answered five open-ended questions. The first question asked about the recalled lie. This question was asked to ensure that the participants could recall the situation in detail, to verify that a lie had been told and detected (at least from the perspective of the respondent), and to provide the researchers with some basic information concerning the nature of the situations being reported. Specifically, the question asked:

Recall as much as you can about the situation in which the person originally lied to you. In as much detail as possible, describe the event where you were lied to: where did it happen? What was the lie about? If you can, be sure to write down the exact thing that the person said to you.

The next question asked, "How long ago did this event (the telling of the lie) originally take place?" Third, participants were asked, "What was/is the relationship between you and the person who lied to you?" The fourth question specifically addressed the discovery method. This question asked:

Now, think about how you found out that the person lied to you. Describe in as much detail as you can the events surrounding your discovery of the lie: how exactly did you find out that the person lied to you?

A final question addressed how quickly the lie was detected. The exact wording was, "How much time passed between the time when the lie was first told and the time that you knew for sure that the person had lied?" The questionnaire ended with demographic questions asking the participant's age and sex.

Coding

All completed questionnaires were coded independently by two trained coders. The coding scheme was developed by the authors on the basis of pretest data ($N = 100$) collected at a large Western university. Once the coding was complete, intercoder reliability (Kappa) was calculated, and all disagreements were resolved through discussion between the coders and a senior author. The post resolution data are reported in the results section.

The question addressing how long ago the lie was originally told was coded into units of months and years. The reliabilities were Kappa = .97 for months and Kappa = .98 for years. The coding options for type of relationship included none listed, friend, family member, romantic partner (or former romantic partner), co-worker or professional, roommate, schoolmate, acquaintance, and other. Kappa was .95 for the relationship coding. The coding options for discovery method included none listed, third party information, physical information, solicited direct confession, unsolicited direct confession, at-the-time verbal and/or nonverbal behavior, inconsistencies with prior knowledge, combination, and other. Responses reflecting more than one method were coded as a combination, and the coders also coded each of the discovery methods comprising the combination. Kappa was .81. The question asking the time that had lapsed between when the lie was told and when the lie was discovered was coded into categories. These included immediate detection, less than one hour, less than one day, less than one week, less than one month, less than one year, more than one year, and no answer provided. Kappa was .92. In addition, the first coder was asked to create a typed synopsis of the content of each lie. The second coder typed examples of the various discovery methods.

Results

The first research question asked about the types of information people use to detect lies in non-research settings. The most commonly reported discovery methods were third party information (32.0%), a combination of methods (30.9%), and physical evidence (18.0%). At-the-time verbal and nonverbal behaviors were listed as the sole basis for detection in only four out of the 194 instances (2.1%).

The data were restructured to include specific discovery methods used in combination. This modification resulted in a total of 266 discovery method units used to detect the 194 recalled lies. Considering methods used in combination, the most common methods were third party information (52.1%), physical evidence (30.9%),

TABLE 1
FREQUENCIES OF RECALLED LIE DISCOVERY METHODS

Discovery Method	Initial Coding		Methods in Combination			
	<i>f</i>	%	<i>f_a</i>	<i>f_b</i>	% _c	% _d
Third Party Information	62	32.0%	39	101	52.1%	38.0%
Physical Evidence	35	18.0%	25	60	30.9%	22.6%
Solicited Confession	7	03.6%	29	36	18.6%	13.5%
Unsolicited Confession	16	08.2%	9	25	12.9%	09.4%
Verbal/Nonverbal Behavior	4	02.1%	18	22	11.3%	08.3%
Inconsistent with Knowledge	4	02.1%	8	12	06.2%	04.5%
Inadvertent Confession	4	02.1%	4	8	04.1%	03.0%
Combination	60	30.9%	—	—	—	—
Other	2	01.0%	0	2	01.0%	00.8%
Total	194		132	266		

Note. ^a denotes the frequency of individual's discovery methods within combinations, ^b is the total frequency in which the discovery method was observed, including use in combinations, ^c is the percentage of lie discoveries ($N = 194$) involving the method, and ^d is the percentage of total discovery units (266) that were the specific method.

and direct solicited confessions (18.6%). These percentages reflect the percentages of accounts containing the method, not the percentage of total method units. Because third party information and physical evidence were the most common, they were more likely to be used in combination.

Solicited confessions, however, were four times more likely to be used in combination than to be used in isolation. Examination of the raw data suggested that solicited confessions, when they happen, are most often obtained by confronting the liar with either third party information, physical evidence, or suspicious verbal and nonverbal behaviors. The combination of solicited confessions and third party information accounted for nearly one-quarter of all combinations, and more than one-half (55.6%) of the combinations involving solicited confessions also involved third party information. Of the remaining instances of combinations involving solicited confessions, all but one involved either physical evidence (22.2%) or suspicious source behaviors (19.4%).

At-the-time verbal and nonverbal behavior, although used more frequently in combination than as the only detection method, was listed as a discovery method in only 11.3% of the recalled lies, and constituted only 8.4% of the discovery method units. When verbal and nonverbal behaviors were used in combination, they co-occurred most often with third party information (38.5%), solicited confessions (26.9%), and physical evidence (19.2%). In several of these instances, at-the-time verbal and nonverbal behavior aroused suspicion, and those suspicions were verified with third party information, confessions, and physical evidence. A more frequent sequence, however, involved respondents having prior knowledge of truth (often from third party information or known-in-advance physical evidence). Knowing that a lie was being told, they attributed the source's behavior to deception. The complete results are presented in Table 1.

The second research question asked about the length of time that had passed between the time a lie was told and the time it was discovered. This question focused on whether discovery was usually immediate, or if it was more common for detection to be well after the fact. Only 14.9% of the uncovered reported lies were detected at the time they were told. Just under one-half (41%) were detected through a combination of methods. Only three lies (1.5%) were detected both at the

time they were told and on the basis of verbal or nonverbal behavior. Of the remaining lies, 4.1% were detected in less than one hour, 20.6% in less than one day, 20.6% in less than a week, 20.6% in less than one month, 17.5% in less than one year, and 1.5% were discovered more than one year after they were told. Reported differently, 80.9% of the lies were discovered more than an hour after they were told, 60.3% were detected more than a day later, and 39.7% were uncovered more than a week later. The reader should also note that these results might be biased in favor of shorter discovery times because respondents were instructed to recall a recent lie.

Supplemental Analyses

An analysis was conducted to determine the recency of the recalled lies. Forty-two point eight percent of the lies had been told within a month of the time the data were collect. The median recency was two months. Eighty-one percent of the lies were less than one year old and less than 8% were more than two years old.

Analysis was also conducted on the relationship between the liar and the respondent. Thirty-nine point five percent were friends, 32.8% were romantic partners, 9.7% family, 7.2% roommates, 4.6% co-workers, 4.6% acquaintances, 1.0% were coded as other, and 0.5% were coded as schoolmates. Discovery methods did not vary systematically by relationship type.

The topics about which people lied were diverse. Recalled lies included both minor lies such as a person not liking ice cream, and serious lies such as the marital status of a respondent's boyfriend. Examples of selected discovery methods and lies are presented in Table 2.

Discussion

This paper, we think, is unusual. The study was clearly exploratory and a priori hypotheses were neither advanced nor tested. The research design was unusually simple, consisting of only five carefully worded open-ended questions. Missing were the complex factorial designs, within subjects factors, induction checks, and multiple dependent measures which are typical in the literature. The sample size was neither especially large, nor randomly selected. Not a single significance test was reported in the results. Yet, we believe these results have unusually important practical and theoretical implications, and the potential to change completely how scholars research and understand deception detection. We hope that readers will not confuse the simplicity of the design, data, and analysis with the contribution made by these data.

The goal of this paper was to test the assumption, implicit or explicit, in the deception detection literature that people detect deception in others at the time the lie is told based primarily on the nonverbal and verbal behaviors of the person whose message is being judged. The study had participants recall non-research lies that they had discovered and answer open-ended questions about the discovery methods they employed and the length of time it took to discover the lie. The responses were coded and frequency distributions were reported.

The results suggested that at-the-time source behaviors were listed as a discovery method in only a small minority of recalled lies. Information from third parties and the consistency of the message with physical evidence were much more commonly listed discovery methods. Similarly, only a small proportion of the recalled lies were detected at the time they were told, and a much larger proportion was discovered an

TABLE 2
EXAMPLES OF THE DISCOVERY METHOD CATEGORIES

Third Party Information

Girl kissed respondent's boyfriend and lied about it. Friend told respondent that the girl had confessed to kiss.

Brother of the respondent told respondent that he could not take family truck back to school because their mother had said that the brother could use it. The mother, when asked, had no knowledge of the arrangement, showing that the brother has lied.

A friend claimed to have to leave in order to get home to her parents' house before midnight. A call to her house and a talk with her mother revealed that the friend was in fact staying with her boyfriend.

Co-worker claimed that he could not cover a shift for the respondent because he had friends in from out of town. Roommate of respondent knew this to be false and told respondent.

Physical Evidence

Boyfriend claimed to have quit smoking. Respondent smelled it on his breath.

Respondent could not find his Swiss army knife. He asked his cousin if he knew where it was, and cousin said no. Respondent found knife in cousin's room.

Respondent suspected boyfriend of talking to his ex on the phone, which boyfriend denied. Respondent punched redial on his phone and was connected to the ex's phone, showing that he had called her.

Roommate said she did not use respondent's computer. Respondent saw roommate's log-in name in the user window.

Man using handicapped identification asked respondent for a donation. He had a card saying he was deaf, and needed help. Respondent gave the man some money. Later, she saw the man ordering food from the intercom at McDonalds, having no trouble hearing the server's question. This revealed that he was, in fact, not deaf.

Solicited Confessions

Roommates tried to set up the respondent's boyfriend with another woman at a bar. Roommates initially denied it, but after respondent got angry, they confessed. Now there is much tension in the house.

Respondent's roommate was planning to move out of house but told respondent that she was staying. Respondent heard from a friend about her roommate's plan, and confronted roommates. Roommate confessed.

Unsolicited Confessions

Respondent's boyfriend went out on a date with respondent's roommate and hid the fact for a while.

Boyfriend spontaneously confessed at a later time when the relationship had become more serious.

Respondent and her sister planned to buy gift for their father. Respondent said she could only afford \$50 and sister said she would pay of the rest. The gift was purchased on respondent's credit card for \$130.

When bill came, sister would not pay more than half and said she had planned that all along.

Respondent's boyfriend spontaneously confessed that he was married to another woman.

At-the-Time Verbal/Nonverbal Behavior

Respondent's girlfriend lied about having sex with previous boyfriend. Respondent knew her well enough to know she was lying based on her behavior.

Respondent suspected a friend of smashing a pumpkin. He denied it, but looked "guilty as sin."

Respondent suspected boyfriend of seeing his ex. She confronted him, and he "danced around the subject," used "ums," and was at a loss for words.

Inconsistent with Prior Knowledge

Friend claimed that furniture cost a certain amount. Respondent had been shopping for similar items, and the amounts did not match up.

Boyfriend claimed to be half Jewish when relationship started, but as time went by, it became evident that he did not have knowledge of Jewish customs at all Jews would know.

Inadvertent Confessions

Roommate denied drinking respondent's milk. Respondent later overheard roommate talking on the phone and saying "my roommate actually believed me about the milk."

Respondent overheard girlfriend talking on the phone about fooling around with another guy.

Friend had been covering up a conversation with respondent's boyfriend. After two months, friend slipped up by referring to the conversion.

hour or more after the fact. Some lies were detected months or even years later. In all, less than 2% of the recalled lies were detected both at the time they were told and on the basis of verbal or nonverbal behavior alone. These data suggest that deception detection experiments may be poor representations of at least some nonresearch deception detection. More conservatively, at the very least, the data provide evidence inconsistent with the primacy of the source behavior assumption that is commonly accepted in the deception literature.

Before discussing the implications of these results, readers should be cautioned about three unwarranted conclusions that might be drawn unwisely from these data. First, readers would be well advised to place little value on the specific percentages reported in the results. For example, one should not conclude that third party information is used to detect 52.1% of discovered lies, that information from thirds parties is used about one-half of the time, or even that third party information is the most frequently used discovery method. Our participants were not sampled randomly from any population, the recalled lies were certainly not a random sample of discovered lies, and even if these first two conditions were met the accuracy of recall data can always be debated. Further, the specific question wording used may have impacted the results. Had we asked about suspected deception, for example, the responses might have been different. For these reasons, margins of error or confidence intervals were not even calculated.

We, however, do not see these qualifications as serious limitations. The purpose of this study was not to generalize, but instead to test a generalization. To this end, the data serve well. The value of the current findings is in the documentation of results inconsistent with the primacy of source behavior assumption, and the methodological and theoretical implications of that point, not in the generality of the specific findings (cf. Mook, 1983). So, unless the quality of the sampling, recall, or measurement was so poor that an observed 1.5% might actually be greater than 50%, the conclusions we draw from these data are not in jeopardy.

Second, our goal was not to develop a new typology of discovery methods. Discovery methods, of course, had to be categorized before they could be coded. For that purpose, the categories seem well suited. Few methods were coded as other and inter-rater reliability was high. But, others could reasonably derive different categories that might work just as well. Thus, we hope that readers will resist the urge to reify our coding scheme into the types of deception discovery methods, or worse yet, deception detection strategies.

Finally, these data should not be interpreted as showing that verbal and nonverbal behaviors are unimportant in detection accuracy. Although our participants did not report relying on these behaviors often, it is not evidence that source behaviors lack diagnostic utility in some situations or that source behaviors cannot produce receiver suspicion.

Theoretical and Methodological Implications

Methodologically, depending on the researcher's interests, these findings might require the development of new methods for studying detection accuracy. Recall that most research designs in the extant literature precluded the use of information other than sources' behaviors, and required that truth-lie judgments be made in close temporal proximity to the original message. Such designs are reasonable if the researcher is interested specifically in people's immediate detection accuracy on the basis of source verbal and nonverbal behavior alone. The current results, however, suggest that deception judgments are often not immediate, and that they are often based on additional sources of information external to the initial message. New types of designs are required to assess accuracy under these less restrictive conditions.

More generally, this research provides an example of an insightful observation made by Rozin (2001). Rozin argues that many social scientific disciplines, in an effort to be more scientific, tend to value experimental research testing hypotheses with inferential statistics over descriptive research motivated by informed curiosity.

Drawing upon the views of Solomon Asch, the case is made that a thorough understanding of the phenomena under study should precede model development and testing. Social science has adopted a model of science that makes more sense for a more fully developed science, and often skips the necessary step of description.

The current data suggest that such might have been the case for detection accuracy research. Early researchers created experimental designs that appear to have excluded important types of information. Subsequent researchers systematically built upon earlier designs such that an entire literature developed around variations in a single basic design. Although this literature has certainly advanced knowledge, this knowledge may be much more limited than it might have been. Had early studies started with descriptive work, the literature may well have progressed differently and more efficiently.

The theoretical implications of these findings are also multifaceted. Most obviously, the current data are inconsistent with the primacy of the source behavior assumption that is central to much deception theory. Theories which make this assumption might need rethinking so that it is either avoided or qualified.

More generally, current deception theory seems to be diverging into two directions. The first is perhaps best represented by Buller and Burgoon's (1996) *Interpersonal Deception Theory (IDT)*. IDT focuses heavily on source and recipient behaviors in face-to-face interaction. Message sources are assumed to manage their behaviors strategically so as to create the impression of honesty, yet they inadvertently leak cues to deceit. Receivers too manage their behavior, but leak their suspicions. Both participants are thought to monitor actively the other's behaviors for signs of deception and suspicion, and adapt to the other's behaviors accordingly. In this view, deception and deception detection is a game of cat and mouse with moves and countermoves, and the ultimate outcome rests on the communicative performances and competencies of the participants.

A very different view of deception is gained piecing together Gilbert's (Gilbert, Krull, & Malone, 1990) work on believing and unbelieving, DePaulo, Kashy, et al.'s (1996) diary studies of everyday lies, and McCornack's (1997) work on the production of deceptive messages. These approaches view people as not especially mindful of deceit, and see few important differences between truthful and deceptive interactions. DePaulo, Kashy, et al. (1996) found that tellers of everyday lies tend not to be very anxious about the lies they tell, and they generally worry little about being caught. Similarly, McCornack (1997; also Vrij, 2000) argues that everyday lies may not be more arousal producing or cognitively effortful than truthful messages. If so, lies may not be so different from truths, and perhaps we should not expect pronounced behavioral differences between truths and lies in many situations. Gilbert et al.'s (1990) Spinozan model suggests that comprehending messages entails message acceptance, that believing is the default value, and that disbelief requires unbelieving. It follows that people should believe others' messages unless reasons exist to suspect a lie. Putting these arguments together suggests a theoretical view of deception in which the telling of everyday lies is not especially striking, where observable verbal and nonverbal behaviors are not especially useful in distinguishing truths from lies, and where message recipients typically ascribe honesty to others regardless of veracity or nonverbal behaviors.

The current findings, although more in line with the latter view, can inform both theoretical views of deception. IDT and traditional views of deception could be

expanded to include signs of deceit external to dyadic interaction. Similarly, the deception time line could be extended to allow for people to reconsider their judgments if new information is brought to light. Alternatively, the current results inform research on everyday lies by suggesting the types of situations in which people come to suspect deception, the types of information that lead people to conclude that another person has lied, and the time line that can be involved.

Conclusion

This paper tested the pervasive assumption in the deception detection literature that people detect deception in others, at the time the lie is told, on the basis of verbal and nonverbal source behaviors. The results suggested that few recalled lies were detected on the basis of at-the-time source behaviors and that the deception detection time line is often much longer than is assumed commonly. We believe that the data have important implications for deception theory and research. We hope that deception scholars reconsider how they design their studies and rethink commonly accepted assumptions and conclusions in the deception detection literature.

Footnote

¹The phrase deception detection is common in the literature and we use it here despite two recognized problems with the term. First, most deception detection studies (as well as the current study) examine lies, which represent only one type of deception. In this way the phrase *lie detection* is more accurate. We use the terms *lie* and *deception* interchangeably, even though we recognize that the two are not synonymous, because the distinction is not central to this study, because this usage is consistent with the literature most relevant to our study, and because it allows greater diversity in our writing. Second, the phrase *deception detection* usually refers more generally to distinguishing truths from lies. The reader should be aware that our use of the phrase at times refers to this more general meaning, and at other times to the more literal detection of lies. Finally, we are referring to instances where people have confidence in their belief that others lied to them. Thus, we are not equating mere suspicion with detection, and our focus is on the latter.

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