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Sender credibility and deception detection

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ABSTRACT

Recent research has demonstrated that the most important determinant of deception detection success was the perceived credibility of the sender. If so, then what accounts for differences in perceived sender credibility, especially when communication is conducted solely via computer-mediated communication modes where sender and receiver cannot see each other? We investigated the relationships between credibility, its antecedents, deception detection success, and the generation of false alarms. We conducted an experiment involving 74 pairs of undergraduate students. We found that the perceived credibility of the sender significantly affected both detection success and false alarms, such that the less credible the sender, the better the detection and the more false alarms generated. We also found significant relationships between three of the four antecedents and credibility: participants who were trained to detect cues to deception, who were motivated to find deception, and who communicated via e-mail were more likely to perceive senders as not credible, compared to participants who were not trained, not motivated, and who communicated via VOIP. Our findings have implications for both research and practice.

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1. Introduction

Deception is quite common, a regular part of everyday discourse (DePaulo, Kashy, Kirkendol, Wyer, & Epstein, 1996; Hancock, Thom-Santelli, & Ritchie, 2004). This is the case in business organizations as well as in daily life (Grover, 1993, 2005; Shulman, 2007). Despite the frequent occurrence of deception, most people are not very good at detecting it, with success rates in general at about 54%, slightly better than chance (Bond & DePaulo, 2006).

This widely-known success rate is the average for all of the thousands of subjects that have participated in various deception detection experiments over the decades. Since this is an average, it follows that some people are better at detecting deception than others, and if true, it would follow that these people would vary on certain traits associated with their detection abilities. For example, women might be better at detection than men. For organizations seeking to uncover deception, being able to identify these people would be valuable.

However, little evidence has been found of such differences and of characteristics that clearly point to differences in detection ability (Bond & DePaulo, 2008). In fact, some argue that differences in detection success depend more on the liar (the sender) than on the person being lied to (the receiver) (Bond, Kahler, & Paolicelli, 1985), as some liars appear to be more credible than others (DePaulo & Rosenthal, 1979). In a recent meta-analysis of 142 studies, focused on deception detection and individual differences, Bond and DePaulo (2008) looked at differences in receiver ability, receiver credulity, sender detectability, and sender credibility. They found that:

> The largest determinant of a deception judgment . . .is the credibility of the person being judged – some individuals appear substantially more truthful than others. In fact, a person's credibility has a bigger impact than the person's honesty on whether s/he will be seen to be telling the truth. High credibility liars are more likely to be believed than low credibility truth-tellers (p. 487).

If successful detection depends largely on sender credibility, then it is important to understand what accounts for credibility differences. Past research has found that credibility assessment is heavily influenced by what is called the "demeanor bias." In other words, "the individuals who appear most honest when lying are the ones who appear most honest when telling the truth (Bond & DePaulo, 2008, p. 484)." Support for the relationship between the

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demeanor bias and sender credibility has been found in various other studies (Burgoon, Blair, & Strom, 2008; Porter & ten Brinke, 2009; Sabourin, 2007). Levine et al. (2011) conducted a series of studies where they investigated the differences between senders, where demeanor and veracity were matched and mismatched. Matching demeanor and veracity meant sincere truthtellers and insincere deceivers; mismatched meant insincere truthtellers and sincere deceivers. Where demeanor and veracity were matched, detection success rates were quite high, as high as 100% in some cases. Sincere truthtellers were regularly judged to be honest; insincere deceivers were consistently revealed to be dishonest. Where demeanor and veracity did not match, detection success rates were quite low, far below the 54% generally accepted success rate. Sincere deceivers were incorrectly judged to be honest; insincere truthtellers were wrongly judged to be deceptive. The demeanor of the sender on detection success, then, is apparently quite important in estimating veracity.

Yet support for the demeanor bias has only been found when the receiver, or judge, has been able to completely observe the actions and words of the sender. Would the demeanor bias still work under conditions of computer mediated communication (CMC), where only text or audio were available for receivers?

In the absence of face-to-face interactions between sender and receiver, what accounts for differences in sender credibility? A recently developed theory of credibility, the Prominence–Interpretation Theory (Fogg, 2003), developed primarily to explain how people evaluate the credibility of websites, suggests several antecedents to credibility. As the theory was created to deal with website evaluations, its antecedents to credibility judgments reflect a CMC environment where face-to-face and videoconferencing interactions are largely absent.

Our research questions in this paper, then, are as follows: (1) Does sender credibility affect deception detection success?, and (2) What are the antecedents of sender credibility in a CMC setting, where the demeanor bias would be mitigated or ineffectual? The rest of the paper is organized as follows. First we present the theoretical basis for our experimental study, leading to a research model and hypotheses. Then we discuss our research method, measures, and data analysis. We end the paper with a discussion of our findings and implications for both research and practice.

2. Theory and literature

Here we will review the literature on deception, its detection, credibility, and credibility assessment, leading to the development of a research model and hypotheses. Under deception and its detection, we will review the literature on detection success rates, Interpersonal Deception Theory, leakage theory, and the truth bias. Under credibility and its assessment, we will discuss the demeanor bias and other factors associated with credibility, culminating in a discussion of Prominence–Interpretation Theory, a theory first developed to explain how users assess the credibility of websites.

2.1. Deception and its detection

People are not completely honest in their everyday dealings with each other, yet not all interactions where people deviate from the truth are considered deception. To be considered deceptive, there must be an intent to deceive (Miller & Stiff, 1993). This is why deception is often referred to as "a message knowingly transmitted by a sender to foster a false belief or conclusion by the receiver" (Buller & Burgoon, 1996, p. 205). Deception not only includes outright lies. Evasions of the truth, equivocations, exaggerations, misdirection, deflections, and concealments are also considered deception (DePaulo et al., 1996; Turner, Edgley, & Olmstead, 1975). Thus, deception can be conducted in many ways, with the purpose ranging from personal gain to the benefit of others (DePaulo & Kashy, 1998).

The communication literature on deception shows that the average person is not very good at detecting deception. As mentioned earlier, many experiments on deception detection have reported an average detection success rate of around 54% (Bond & DePaulo, 2006). The way in which many deception detection studies are conducted helps explain this finding. Most deception studies separate those being deceptive from those judging their veracity (see for example Ekman & Friesen, 1969). Typically, a set of people are brought into an experimental setting and are asked to make some truthful statements and some dishonest statements. These statements are recorded, usually on video. The overall set of statements is then edited into a stimulus reel, with half of the statements being false and the other half being true. This reel is then shown to disinterested third parties who do not know the people on the reel and who have never interacted with them. The third parties are asked to judge the veracity of the people on the reel. Most often, this is a dichotomous choice – either the person is lying or not. Given enough examples to judge in such a situation, if a judge randomly guessed about the veracity of the people on the reel, her or his expected detection accuracy score should be close to chance, or near 50% accurate (DePaulo et al., 2003).

Interpersonal Deception Theory (IDT) provides an understanding of the process leading up to individuals' judgments about deception. During a communication event, deceivers and receivers make strategic changes to both the content of messages and their behavior, depending upon the reactions of the other party (Buller & Burgoon, 1996). Deceivers conceive of and deliver messages based upon their perceptions of communication characteristics such as social cues, immediacy, engagement, conversational demand and spontaneity of the receiver. They also continuously judge the reactions of receivers to their deceptive messages and assess the success or lack of success of their deception. If a deceiver perceives that deception is not as successful as intended (based on a receiver's behavior), they will likely modify their delivery style and message (Burgoon, Buller, White, Afifi, & Buslig, 1999).

Receivers, on the other hand, change their behavior during a communication event as they become more or less suspicious about deception. When a deceiver sends a deceptive message, a receiver, if sufficiently motivated and suspicious about deception, may search for deception (consciously or unconsciously), question the deceiver about potential deception, or become more active in the communication process.

According to IDT, this process of strategic deception and deception detection continues throughout a communication event, and at the end of the event, receivers perceive deceivers as being deceptive or truthful about the information they communicated. However, receivers are not always correct with their final judgments. Sometimes receivers generate false alarms. False alarms happen when there is no deception but deception is detected anyway. Past studies have investigated causes of false alarms and found that increased suspicion (Burgoon, Buller, Ebesu, & Rockwell, 1994; Miller & Stiff, 1993; Parasuraman, 1984), just-in-time training and warnings (Biros, George, & Zmud, 2002), and receivers who are highly motivated to find deception (Porter, McCabe, Woodworth, & Peace, 2007) lead to false alarms.

Leakage theory, another well-known theory related to deception, describes more about what leads receivers to become suspicious and make judgments about deception. Leakage theory holds that receivers are able to detect deception due to their perception of indicators or cues to deception on the part of the deceiver. Deceivers often unwittingly leak cues to deception, and these cues serve to alert individuals about potential deception (Ekman &

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