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# Not Pollyannas: Higher Generalized Trust Predicts Lie Detection Ability

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## Abstract

This research used a job interview context to investigate the relationship between peoples' degrees of generalized trust—their default assessments of the likely trustworthiness of others—and their ability to detect lies. Participants watched videos of eight simulated job interviews: Half of the interviewees were completely truthful; half told a variety of lies to make themselves more attractive job candidates. Contrary to lay wisdom, high trusters were significantly better than low trusters were at detecting lies. This finding extends a growing body of theoretical and empirical work suggesting that high trusters are far from foolish Pollyannas and that low trusters' defensiveness incurs significant costs.

## Keywords

judgment, decision making, interpersonal processes, social interaction, person perception, organizational behavior, trust, generalized trust, lie detection

People vary in their trusting propensities: Some, who assume that others are generally trustworthy, make themselves vulnerable to their counterparts until evidence challenges their trustworthiness assumptions; others assume that people are generally untrustworthy and act accordingly until their counterparts demonstrate their trustworthiness gradually over time. The latter, “low-trust” orientation reflects the dominant, incremental, “rational” model of trust development (Kramer, 1999). However, newer models allow for the occurrence of greater risks early in relationships and argue that such risks are frequently adaptive and tend to yield positive results for “high-trust” risk takers (Weber, Malhotra, & Murnighan, 2005; Weber & Murnighan, 2008).

This investigation focuses more narrowly on individual-level dispositions. Interest in propensities to trust, or generalized trust, has a long history (Rotter, 1967, 1980). However, until recently the instruments for measuring such dispositions have generally had weak reliability and limited predictive validity even though everyday experience suggests that some people are clearly more inclined to trust than are others. Thus, despite weak empirical results, theorists have persisted in their assertions about the importance of generalized trust propensities (e.g., Mayer, Davis, & Schoorman, 1995). Fortuitously, Yamagishi & Kosugi (1999) developed a more reliable instrument for the measurement of generalized trust (see Appendix A for an English translation) and Yamagishi (2001) and his colleagues have demonstrated its predictive validity in several contexts.

Most economic models of decision making suggest that to avoid exploitation people should generally be defensive, low

trusters. Rational choice theories, for example, assume that all actors will seek to maximize their own personal utility in social interactions (i.e., behave self-interestedly): Decision makers will seek their own advantage as they guard against the effects of others' self-serving pursuits. Two parties in a prisoners' dilemma who are acting according to the precepts of game theory, for instance, will both choose self-interestedly, and both will suffer relative to other, more mutually rewarding, possible outcomes. In a commons dilemma, defensively self-serving choices lead to the famous tragedy of the commons (Hardin, 1968). The dominant, expected utility models of choice are inherently risk averse and socially defensive in orientation. Low trusters seem socially savvy in light of such models, and it is tempting to see high trusters as gullible Pollyannas. Yamagishi (1998), however, argued that high trusters may not be naïve but, instead, are sensitive to information that predicts whether those with whom they interact are trustworthy.

Yamagishi (2001) has theorized that generalized trust is a form of social intelligence that can be highly adaptive, counter to game theory's predictions. His model suggests that high trusters, who take more social risks and are, therefore, more vulnerable to exploitation, obtain more differentiating social data and learn more, e.g., “Ah, this is what someone who will deceive

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me does.” In contrast, by defending themselves from possible exploitation, low trusters seem to be suspicious of everyone: They send signals that limit the development of potentially beneficial relationships and, therefore, in the absence of differentiating social data, they learn less about distinguishing trustworthy from untrustworthy others. Thus, by defending themselves from the costs associated with exploitation, low trusters can incur potentially massive opportunity costs.

This study tests whether high trusters, who may have learned to be more sensitive to negative social information than low trusters have, will also be better at lie detection. If they are, their ability at lie detection may be one of the key reasons why high trusters achieve the kinds of social interaction successes that Yamagishi (2001) has documented.

Psychologists have long studied the ability to detect deception, with rather bleak conclusions: Human beings are surprisingly poor lie detectors. A recent meta-analysis concluded that “people achieve an average of 54% correct lie-truth judgments, correctly classifying 47% of lies as deceptive and 61% of truths as nondeceptive” (Bond & DePaulo, 2006). Although research finds variation across groups, this meta-analysis concluded that even professionals who work to detect lies—psychiatrists, judges, police, and so forth—do no better than the general public, and the mean performance of several of these professional groups was actually lower (although not significantly).

In the necessarily messy and ambiguous context of social interactions and perceptions, this logic also suggests that although high trusters should be better lie detectors they might not be better truth detectors. High trusters (who take more social risks according to Yamagishi’s, 2001, argument) will experience more betrayals and lies over time than will more risk-averse low trusters; therefore, they will have the opportunity to learn hard lessons from their errors. However, the error of assessing a truthful counterpart to be deceitful does not offer the same immediacy or clarity of developmental feedback; it just doesn’t hurt as much and isn’t as memorable. Thus, although they may have become attuned, consciously or unconsciously, to signals of potential betrayal, the remainder of a high truster’s experience is not likely to be filled with perfect predictions of others’ trustworthiness or even particularly good feedback; consequently, the likelihood of their errors in a primarily deceitless domain may be no better or worse than the likelihood of errors, overall, for low trusters. Our research investigated this potential pattern of differentiated accuracy.

## This Research

We predicted that high trusters would be better lie detectors but not better truth detectors than low trusters—that is, that generalized trust would be positively related to lie-detection but not truth-detection ability. Prior to testing these hypotheses, we wanted to understand whether people normally held these same beliefs because, on their face, our predictions seem counterintuitive. Thus, prior to conducting our main experiment, we surveyed 46 Master of Business Administration (MBA) students to assess lay expectations about lie-detection abilities. The

participants, who had several years of full-time work experience on average, each read a scenario about a recent spate of dishonesty in their organization’s recruitment and employment interviews. The problem had cost the organization “dearly in terms of employee time, divisional productivity, and frankly, morale.” Participants had to choose one of two senior managers, who were “comparable in terms of both their experience and job-relevant capabilities,” to interview new job applicants. As described, the only difference between managers was that one was a high truster and the other a low truster. (See Appendix B for the complete scenario text.)

A great majority of the participants (39 of 46; 85%) chose the low truster,  $\chi^2(1, N = 46) = 22.26, p < .001, p_{\text{rep}} = .99$ , confirming our expectation that people generally assume and believe that generalized trust and lie detection ability are negatively correlated—that low trusters make better lie detectors than do high trusters. Asked why they chose the low truster, the most common answers indicated a belief in the general gullibility and, to a lesser degree, the inferior intelligence of high trusters. These results indicate that our main hypotheses ran exactly counter to typical beliefs about the relationship between generalized trust and lie detection ability.

## Main Experiment

**Participants.** Twenty-nine participants, ranging in age from 19 to 36 ( $M = 22, SD = 3.16$ ), were recruited through on-campus invitations.

**Materials.** Stimulus materials were videos of 2nd-year MBA students in simulated employment interviews regarding a real job. The interviewees were provided with the job description and told that an expert in lie detection would interview them. The instructions explained that they would be randomly assigned to a truth condition, in which they should respond to all questions in an entirely truthful fashion, or a lie condition, in which they should lie about at least three significant things during the interview. Interviewees in the lie condition were told to create their own lies to make them appear to be more attractive job applicants. Interviewees dressed as they normally would for a real job interview.

All of the interviewees were instructed to do their best to “get the job.” In the truth condition, the instructions emphasized that they should not lie under any circumstances; in the lie condition, the instructions emphasized that they should tell at least three substantial lies that they thought would significantly increase their chances of getting the job. All interviewees had a chance to review the kinds of standard interview questions they could expect in advance. Interviewees were guaranteed payment of \$20; they were told that they would receive an additional \$20 if the lie detection expert believed that they were telling the truth. The financial incentive for being believed applied in both conditions. Past lie detection research has made it clear that the targets of lie detection judgments must have significant incentives to create worthwhile

stimuli (DePaulo et al., 2003). In reality, the interviewer had no special lie detection expertise, but it was clear that the interviewees believed that he did.

Of 16 videos initially created, 8 were selected for the final study—4 from the lie condition and 4 from the truth condition—based on gender balance, appropriateness of attire, comprehensibility, and the number and substance of lies told, with a preference for interviews that contained more, and more substantial, lies.

**Procedure and measures.** Several days in advance, participants completed a web survey that included an English translation of Yamagishi & Kosugi's (1999) measure of generalized trust (Cronbach's  $\alpha = .803$ ; see Appendix A). Each participant viewed the eight videos, one at a time, in random order, and made a series of judgments about each interviewee immediately after each video. Their judgments included (a) whether the interviewee had lied; (b) how confident they were about this conclusion; and Likert-type evaluations of (c) interviewees' overall truthfulness ("this person was truthful in response to the interview questions"), (4) interviewees' global honesty ("in general I think this person is honest"), and (5) their hiring intentions ("I would hire this person for this position"). At the end of the study, participants were also asked to describe the aspects of interviewees' behavior to which they had attended when making their truthfulness judgments.

**Analytic strategy.** Detecting liars amid truth tellers is an exercise in correctly discerning signal from noise. Thus, we used signal detection theory (SDT) to analyze the data (Abdi, 2007; Green & Swets, 1966). SDT analyses recognize that accuracy at tasks like this requires the consideration of two separate parameters:  $d'$  ( $d$  prime), which represents participants' ability to detect the signal of interest (sensitivity), and  $C$  (criterion), which represents the strategic bias of a participant (bias).<sup>1</sup> The relationship between  $d'$  and generalized trust reveals whether the task of picking out liars from among truth tellers is more or less difficult for people as a function of their level of generalized trust. The relationship between  $C$  and generalized trust reveals whether people are differentially biased in their judgments as a function of their generalized trust inclinations. For example, if high trusters guess "liar" every time, they will detect every liar but only because of a biased strategy. (See Abdi, 2007, for an overview of SDT.)

In addition to the SDT dependent variables, we also computed three other accuracy variables: (a) overall accuracy, which represented how many of the eight job candidates were accurately categorized as a liar or a truthful candidate; (b) lie detection accuracy, which represented how many of the four liar candidates were correctly classified as liars; and (c) truth detection accuracy, which represented how many of the four truthful candidates were correctly classified as truthful. In addition, we categorized and analyzed participants' responses to a series of open-ended questions concerning aspects of the candidates' behavior that had attracted their attention.

## Results and Discussion

Regression analyses using the SDT-relevant dependent variables indicated that, contrary to lay expectations, high trusters were more accurate in detecting liars than were low trusters. Generalized trust scores predicted sensitivity to deceit (i.e.,  $d'$ ),  $F(1, 27) = 8.44, p = .007, p_{\text{rep}} = .96, R^2 = .24$ : Higher trusters were more sensitive to signals of deception. However, bias was not significantly related to generalized trust scores (i.e.,  $C$ ),  $F(1, 27) = 2.32, p = .14, p_{\text{rep}} = .78$ .<sup>2</sup> This indicates that in this study generalized trust was not related to a systematic bias to guess "liar" but was significantly related to sensitivity to deceit.

Generalized trust scores were also positively related to overall accuracy,  $r(29) = .529, p = .003, p_{\text{rep}} = .97$ ; that is, high trusters were more accurate than were low trusters in identifying which of the eight interviewees were lying and which were telling the truth. This is not surprising given the SDT results. The data are also consistent with our prediction that high trusters would be better at detecting lies but not at detecting truthfulness: Generalized trust and the ability to correctly categorize truthful candidates were not significantly related,  $r(29) = .12, p = .537, p_{\text{rep}} = .47$ . Instead, generalized trust was significantly related to accurately identifying the lying candidates,  $r(29) = .536, p = .003, p_{\text{rep}} = .97$ . In addition, even though they were comparatively poor lie detectors, low trusters were equally confident of their judgments: Generalized trust and confidence in judgments about whether liars were lying were not significantly related,  $r(29) = .055, p = .776, p_{\text{rep}} = .30$ .

Participants also evaluated each job candidate on several dimensions. Consistent with the accuracy results, generalized trust was negatively related to estimates of the lying candidates' overall truthfulness,  $r(29) = -.391, p = .04, p_{\text{rep}} = .89$ , and global honesty,  $r(29) = -.422, p = .02, p_{\text{rep}} = .93$ , and negatively related to a willingness to hire liars,  $t(29) = -.352, p = .06, p_{\text{rep}} = .86$ . Contrary to lay wisdom, low trusters were more willing to hire liars than high trusters were, and they were less likely to be aware that they were liars. The relationships between generalized trust and participants' evaluations of truthfulness and truth tellers were weak but suggestive: High trusters evaluated truth tellers as more truthful,  $r(29) = .36, p = .055, p_{\text{rep}} = .87$ , more likeable,  $r(29) = .316, p = .095, p_{\text{rep}} = .82$ , and more honest,  $r(29) = .30, p = .11, p_{\text{rep}} = .81$ , than low trusters did. These three variables were used to create an index of positive impressions of truth tellers (Cronbach's  $\alpha = .89$ ). Although generalized trust was not significantly related to accurately categorizing the four truthful candidates, it was positively related to overall positive impressions of the truthful candidates,  $r(29) = .36, p = .055$ ; high trusters had more positive impressions of the truthful candidates than did low trusters.

Finally, participants had been asked what aspects of the interviewees' behavior they had attended to when making their truthfulness judgments. These responses were coded and categorized. Generalized trust was positively correlated with reports of conscious attention to fidgeting behavior and voice quality and intonation,  $r(29) = .427, p = .02$ , and  $r(29) = .608, p < .0001$  respectively. This is noteworthy because fidgeting behavior

and voice quality and intonation have been found to be valid cues of deceit (DePaulo et al., 2003).

## General Discussion

Although people seem to believe that low trusters are better lie detectors and less gullible than high trusters, these results suggest that the reverse is true: High trusters were better lie detectors than were low trusters; they also formed more appropriate impressions and hiring intentions and reported attending to more helpful diagnostic information.

Yamagishi (2001) presented three potential adaptive explanations for a positive relationship between generalized trust and social intelligence—"the ability to understand own and other people's internal state and use that understanding in social relations" (Yamagishi, 1998, p. 188). First, high generalized trust drives social risk taking, and the possibility of exploitation pushes high trusters to invest in learning how to identify people who are not trustworthy. Low trusters need no such skills because a social posture of defensiveness is a reliable (if costly) exploitation prophylactic. Second, advanced sensitivity to trustworthiness cues reduces a person's vulnerability to detrimental consequences. Those who are less sensitive are better off assuming that unknown others are generally untrustworthy, leading to less generalized trust among the less socially intelligent. Assuming that people are liars prevents a person from being duped. In contrast, being effectively sensitive makes it safe to assume that others generally tell the truth because this sensitivity will help detect a lie before a person falls victim to it. Finally, other unknown factors might also contribute to these effects.

This study cannot determine which of these causal forces is most powerful; all three accounts may be likely. Undoubtedly, some people are better natural lie detectors, just as some people have higher general intelligence, allowing them to act with greater confidence and less risk and to learn more rapidly along the way (Bond & Uysal, 2007; O'Sullivan 2007; O'Sullivan & Ekman, 2004). It is also plausible that some people take risks and learn from their mistakes—in so doing coming to develop the skills that facilitate and encourage high trust.

Other individual differences, such as Machiavellianism and prosocial orientation, have also been associated with successful social adaptation and social perception. Machiavellianism scores tend to be correlated with emotional detachment, low concern for ethics, a general lack of sincerity in interpersonal relations, and a willingness to exploit others (Christie & Geis, 1970; Hodson, Hogg, & MacInnis, 2009). Research has also found that High Machs are convincing liars (Geis & Moon, 1981) and are more successful at social manipulation when environmental constraints are low (see McHoskey, Worzel, & Szyarto, 1998, for a summary), which suggests a high degree of social intelligence coupled with extremely low generalized trust. This seems contradictory to generalized trust as social intelligence (Yamagishi, 2001) and the current findings.

However, Machiavellianism seems to be primarily related to social success that relies on convincing and exploiting others rather than accurately perceiving them, as in the case of lie

detection. Geis and Moon (1981) found no difference in lie detection accuracy between High and Low Machs, and Machiavellianism has been found to be negatively related to emotional intelligence (Austin, Farrelly, Black, & Moore, 2007). The Machiavellian social strategy has been characterized as "defect," which is successful in only a limited range of contexts (Wilson, Near, & Miller, 1996). Data also suggest that Machiavellianism hurts performance in marketing careers (Sparks, 1994) and that there is no relationship between Machiavellianism and adaptiveness (Eppler, 1996). One study also found that Low rather than High Machs employ more subtle, variable, and adapting social strategies, such as sandbagging (Shepperd & Socherman, 1997). Although we did not collect Machiavellianism data in this study, we found generalized trust and Machiavellianism to be negatively related in a different, as yet unpublished study,  $r(46) = -.51$ ,  $p = .0004$ ,  $p_{rep} = .99$ .<sup>3</sup> Thus, although Machiavellianism may be positively related to certain kinds of social success in specific social contexts, it seems less clear that it reflects social intelligence, and its negative relationship to generalized trust is not surprising.

In a number of ways, this research aligns with the literature on prosocial orientations (for reviews, see Penner, Dovidio, Schroeder, & Piliavin, 2005; Weber, Kopelman, & Messick, 2004). In a seminal article, Kelley and Stahelski (1970b) observed that cooperative actors accurately perceived the world as a heterogeneous mix of cooperators and competitors, whereas competitors perceived the world as homogeneously competitive. They noted that as a result competitors create social dynamics that elicit competition. Cooperators, in contrast, had more accurate social perceptions and did not create negatively self-fulfilling prophecies. Kelley and Stahelski (1970a) also observed that competitors were competitive regardless of their counterparts' behavior, whereas cooperators tended to match their behavior to that of their counterparts. Subsequent research has shown that prosocially oriented people are better predictors of others' choices than are individually or competitively oriented people (Maki, Thorngate, & McClintock, 1979; Maki & McClintock, 1983). This suggests that prosocial actors are more behaviorally flexible and responsive and have more accurate social perceptions than do their more competitive counterparts. This logic and these findings clearly align with the current findings.

Future research might test whether manipulating the trust orientation of observers can affect lie detection accuracy. The present investigation and theoretical logic would suggest this should be ineffective; we have argued that high generalized trust might drive behaviors that make adaptive learning possible or that superior lie detection skill facilitates a general orientation of high trust. However, if state-based manipulations yield similar results—if a person primed to have high trust is a more accurate lie detector, for example—then a different theoretical account would clearly be required.

This research has several implications for research on lie detection, generalized trust, and trust development; it also offers a potential mechanism by which seemingly irrational, risky behaviors can lead to socially adaptive advantage. First, few previous studies have documented such a strong relationship

between a personality variable and lie detection performance. This opens up many interesting possibilities for future research.

Second, seemingly irrational risk taking in the absence of a long trust-development history between parties has been an important puzzle in the social sciences. The dominant rational models of choice and trust development cannot easily accommodate such behavior (Murnighan, Malhotra, & Weber, 2004; Weber et al., 2005), yet such risk taking often leads to superior outcomes (Pillutla, Malhotra, & Murnighan, 2003; Weber & Murnighan, 2008). The current findings suggest that high trusters may be able to take more social risks early in their relationships than can low trusters because they are better at detecting deceit in their exchange partners. This could reduce not only the potential costs associated with exploitation but also the economic and social opportunity costs incurred by low trusters who forgo potentially worthwhile relationships. In sum, looking at the world's high trusters as if they are pie-in-the-sky Pollyannas seems to deserve some rethinking, and those high trusters may deserve more credit than they normally receive.

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### Notes

1.  $d' = z$  (hit rate, i.e., calling a liar a liar)  $- z$  (false alarms, i.e., calling a truthful person a liar);  $C = -[z$  (hit rate)  $+ z$  (false alarms)]. See Abdi (2007) for an excellent summary of SDT and related analyses.
2. It should be noted that because participants knew they would be presented with eight stimulus videos this might have been a suboptimal context in which to assess bias ( $C$ ), per se. It was a better environment to assess sensitivity.
3. These data were collected from 46 Master of Business Administration students as part of a different research project. It is also interesting to note that, in this data, generalized trust was found to be positively related to a simple measure of global happiness,  $r(46) = .305$ ,  $p = .04$ ,  $p_{rep} = .91$ .

### Declaration of Conflicting Interests

The author(s) declared no potential conflicts of interests with respect to the authorship and/or publication of this article.

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## Appendix A

### English Translation of Yamagishi & Kosugi's (1999) Generalized Trust Scale

1. Most people are basically honest.
2. Most people are trustworthy.

3. Most people trust a person if the person trusts them.
4. Most people are basically good-natured and kind.
5. Most people trust others.
6. Generally, I trust others.

In this study, Cronbach's  $\alpha = .803$ . This is Yamagishi's English translation of the scale; the original is in Japanese.

## Appendix B

### Scenario Text for Preliminary Survey Study

Imagine the following managerial situation: Your division has recently encountered a spate of dishonesty in the recruitment and employment interview processes. It has cost you dearly in terms of employee time, divisional productivity, and frankly, morale. You have two competent, capable middle managers you could assign to the task of interviewing new applicants, Sue and Colleen. They are comparable in terms of both their experience and job-relevant capabilities. The primary difference between them is dispositional. Sue seems disposed to view people very positively, and her default expectation is that everyone she meets is basically trustworthy. Colleen, on the other hand, is more suspicious by nature. Unlike Sue, Colleen is inclined to believe people will try to get away with anything they can, and her default is to distrust until she has evidence to support trustworthiness. One of your goals is to ensure that applicants don't pull the wool over the eyes of whomever you send in to interview them. Which manager would you select for this task?

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