Routledge
Taylor & Francis Group

The Effect of Suspicion on Deception Detection Accuracy: Optimal Level or Opposing Effects?

Rachel K. Kim & Timothy R. Levine

The current paper reexamines how suspicion affects deception detection accuracy. McCornack and Levine's (1990) nonlinear "optimal level" hypothesis is contrasted with an "opposing effects" hypothesis. Three different levels of suspicion were experimentally induced and participants (N = 91) made veracity judgments of videotaped interviews involving denials of cheating. The results were more consistent with the opposing effects hypotheses than the optimal level hypotheses.

Keywords: Deception Detection; Lying; Suspicion

Research investigating people's ability to detect deception accurately is plentiful. One consistent observation is that people's ability to detect deception is only slightly better than chance at just below 54% (Bond & DePaulo, 2006). Another consistent finding is the prevalence of truth-bias (Bond & DePaulo, 2006). Truth-bias is the tendency to believe other people independent of actual honesty (Levine, Park, & McCornack, 1999). Given the pervasiveness of truth-bias, the role of suspicion is of natural interest due to its potential to mitigate truth-bias. Indeed, research consistently shows that as suspicion increases, truth-bias decreases (e.g., McCornack & Levine, 1990; Millar & Millar, 1997).

Research investigating the effect of suspicion on deception detection, however, has produced inconsistent findings. Whereas a majority of research indicates little or no effects for suspicion on detection accuracy (e.g., Toris & DePaulo, 1985),

Rachel K. Kim was in the Department of Communication at Michigan State University at the time of this article's composition; Timothy R. Levine is a Professor of Communication at Michigan State University. Rachel K. Kim is now in the private sector in Honolulu, HI. This research was conducted with the support of the National Science Foundation (SBE0725685). Correspondence to: Timothy R. Levine, Department of Communication, Michigan State University, East Lansing, MI 48824, USA. E-mail: levinet@msu.edu

other studies predict and find suspicion effects of various sorts (e.g., Burgoon, Buller, Ebesu, & Rockwell, 1994; McCornack & Levine, 1990; Zuckerman, Spiegel, DePaulo, & Rosenthal, 1982). Nevertheless, researchers continue to presume that suspicion plays an important role in the process of deception detection. Thus, the goal of the present paper is to reexamine the role suspicion plays in deception detection.

Defining Suspicion

Suspicion of deception is defined here as the *degree to which a person is uncertain about the honesty of some specific communication content thereby stimulating a construal of motives in an effort to assess potential deceptive intent.* This definition of suspicion encompasses a number of key elements.

First, people can be more or less suspicious. It is not a binary construct. The more suspicious one is the more one will consider the possibility of untruthfulness and potential motives underlying communication. Given that suspicion is a continuous construct, inducing only two levels of suspicion fails to allow observation of the full range of potential effects suspicion may have on deception detection.

Second, suspicion involves uncertainty. If one is certain that someone is being deceptive, there is no suspicion. To be suspicious about someone's communicative behavior is to be in a state of suspended judgment during which one questions the actions of another (Hilton, Fein, & Miller, 1993). Because suspicion involves uncertainty, being suspicious does not necessarily result in judgments of messages as being deceptive, although it increases the likelihood of such judgments.

Third, suspicion involves a construal of motives. According to Bok's (1999) principle of veracity, deceptive actions require justification that is not necessary for honest actions. From a receiver's perspective, no specific explanation is required to believe others, but construal of ulterior motives is necessary to be suspicious (Hilton et al., 1993).

In sum, suspicion pertains to uncertainty regarding whether communication is honest or not rather than firm judgments of whether communication is deceptive or not. While lie-bias might occur within certain contexts such as within prison or among law enforcement officers (Bond, Malloy, Arias, Nunn, & Thompson, 2005; Meissner & Kassin, 2002), there is reason to believe that truth-bias prevails in most communicative contexts (Levine et al., 1999). The centrality of truth and honesty may be rooted in how the mind believes and accepts information (Gilbert, 1991). Comprehension and acceptance of information occur simultaneously such that both true and false information are initially represented as true and only later is potentially false information reassessed as being possibly untrue (Gilbert, 1991). Thus, people are likely to begin with an implicit assessment of truthfulness and to start questioning honesty only after there is reason to reassess whether the message is indeed true. Suspicion is, therefore, a prompted state of questioning in which message veracity and motives for deception are consciously considered.

Prior Research Findings

Research indicates that increased suspicion decreases truth-bias. This has been observed across different relational types including romantic couples (McCornack & Levine, 1990), friends (Stiff, Kim, & Ramesh, 1992), and strangers (Hubbell, Mitchell, & Gee, 2001; Millar & Millar, 1997). Additionally, suspicion has been found to diminish truth-bias in both interactive (Stiff et al., 1992) and noninteractive research designs (e.g., McCornack & Levine, 1990). Thus, the inverse relationship between suspicion and truth-bias is a consistent and robust finding.

The role of suspicion in deception detection accuracy, however, remains less clear. Several studies report little or no relationship between suspicion and detection accuracy (Buller, Strzyzewski, & Comstock, 1991; Stiff et al., 1992; Toris & DePaulo, 1985). Studies that do report effects of suspicion on detection accuracy are inconsistent. Zuckerman et al. (1982) observed that suspicion reduced accuracy in decoding affect. Burgoon et al. (1994) found suspicion to decrease detection accuracy among experts but not novices. On the other hand, Millar and Millar (1997) observed different suspicion effects depending on whether participants were assessing truths or lies, with suspicion being related to a decrease in truth accuracy but increase in lie accuracy. McCornack and Levine (1990) observed a curvilinear relationship between suspicion and detection accuracy with moderate levels of suspicion resulting in the greatest accuracy. However, a subsequent reanalysis of the data considering truth and lie accuracy separately indicated that this curvilinear relationship held true only for truth accuracy but not for lie accuracy, which was positively and linearly related to suspicion (Levine et al., 1999).

There are at least three plausible explanations for the inconsistency of findings. First, some researchers have had more difficulty than others in effectively inducing suspicion (e.g., Burgoon et al., 1994). Consequently, weak experimental inductions might account for null findings. Second, researchers generally attempt to induce only two levels of suspicion and thereby preclude the possibility of observing nonlinear relationships between suspicion and accuracy (e.g., Buller et al., 1991; Burgoon et al., 1994; Millar & Millar, 1997; Stiff et al., 1992; Toris & DePaulo, 1985). Thus, research is needed that successfully induces at least three levels of suspicion to assess potential nonlinearity. Third, because of the relationship between suspicion and truth-bias, suspicion may increase accuracy for lies, decrease truth accuracy, and thus have little net effect on accuracy averaged across truths and lies. Further, the decreases in truth accuracy and increases in lie accuracy may not be linear or proportional across levels of suspicion creating differential findings depending on where along the suspicion continuum suspicion is induced.

Two Models of Suspicion and Detection Accuracy

Two potential explanations for the suspicion-accuracy relationship are investigated in the current experiment. One possibility is that suspicion has opposing effects on the accurate assessment of truths and lies and, therefore, results in an overall weak effect

on detection accuracy. A second possibility is that there is an optimal level of suspicion for detection accuracy resulting in a curvilinear relationship.

Opposing Effects

In most deception detection experiments, accuracy is averaged across an equal number of truths and lies (Levine et al., 1999). According to Levine et al.'s (1999) veracity effect and the Park and Levine (2001) probability model, the greater the extent of truth-bias, the higher the truth accuracy and the lower lie accuracy. When the truth-to-lie base-rate is one-to-one (i.e., truths and lies are equally probable or frequent) as it is in most studies, truth-bias has little effect on detection accuracy because gains in truth accuracy and reductions in lie accuracy cancel out. Because suspicion reduces truth-bias, increases in suspicion should have opposing effects on truth and lie accuracy. When detection accuracy is computed by averaging across truth and lie accuracy, the effects of suspicion are obscured and result in little to no effects for suspicion in general.

Presuming opposing effects of suspicion on truth and lie accuracy and given the constant message veracity base-rate in the current research design, it is predicted that:

> H1a: There will be a negative linear relationship between suspicion and truth accuracy.
>
> H1b: There will be a positive linear relationship between suspicion and lie accuracy.
>
> H1c: The relationship between suspicion and overall detection accuracy will be relatively weak due to opposing effects of suspicion on truth and lie accuracy.

Optimal level

Alternatively, McCornack and Levine (1990) speculated there may be optimal levels of suspicion. Consistent with this idea, they observed a curvilinear relationship such that the greatest detection accuracy occurred with moderate levels of suspicion. People have an inclination to trust others during everyday interactions and, accordingly, engage in inferential processes to achieve conversational understanding (Grice, 1989). As a result, people are inclined to be susceptible to deception during everyday conversations (McCornack, 1992). On the other hand, being too suspicious might affect one's ability to make proper inferences made possible by an implicit trust in others' communicative cooperation. Thus, some degree of suspicion might be adaptive to overcome truth-bias, but being overly suspicious might be detrimental to detection accuracy.

Thus, a second contrasting hypothesis is put forth based on McCornack and Levine's (1990) reasoning:

> H2: There will be a curvilinear relationship between suspicion and overall detection accuracy with moderate suspicion being associated with greatest detection accuracy.

Method

Participants

The participants were 91 undergraduate students (54 men, 37 women; $M_{\text{age}} = 19.12$ years, $SD = 1.25$, age range $= 18$–22 years) enrolled in introductory communication courses that consisted largely of nonmajors at a sizable Midwestern university. Research credit was provided in exchange for participation.

Design and Procedures

A one-way independent groups design with three levels of suspicion (low $n = 30$, moderate $n = 30$, high $n = 31$) was employed using a suspicion induction similar to McCornack and Levine (1990). The dependent variables were truth-bias, truth accuracy, lie accuracy, and overall accuracy.

Participants were involved in a study to investigate "person perceptions and individual differences in teamwork." Participants individually watched a series of 10 video segments of people being interviewed on a large video projection screen. Each taped interview was approximately 3 minutes long. After viewing each video segment, participants made a dichotomous truth/lie judgment.

The videotaped segments of truthful and deceptive interviews were randomly selected from a larger collection of interviews. Interview segments featured different individuals answering the same series of interview questions and ultimately denying that they cheated on a trivia game, which they played with a confederate partner for a cash prize. Some cheated while others did not. Details regarding the process of creating the interview segments are reported in Levine, Kim, Park, and Hughes (2006). Based on the results of pilot testing, the stimulus tapes were modified for use in the current study by editing out the last interview question from each interview segment because that question implied suspicion, thereby negating the suspicion induction.

The 10 different videotaped interview segments contained a 50-50 ratio of truthful and deceptive interviews. There were pauses between each segment during which participants answered whether they thought the interviewee was honest or not about having cheated (along with filler items). Accuracy of veracity judgments were scored by comparison with known ground truth. Truth accuracy and lie accuracy were assessed separately in addition to overall detection accuracy. Truth accuracy was calculated as the percentage of five truthful messages that were assessed accurately. Likewise, lie accuracy was determined in the same way in regards to the five deceptive messages. Overall accuracy was the percentage of all 10 messages judged accurately. Truth-bias was the percentage of interviews judged as truthful.

Experimental Conditions

Participants were randomly assigned to a low, moderate, or high suspicion condition. In the low suspicion condition, participants viewed video segments and responded to

survey items under the pretense that the study was about perceptions of individual differences in teamwork. No information was given regarding the possibility of lies in the interviews and the truth/lie judgment was embedded among filler items (e.g., ''how friendly does this person appear to be,'' ''would you like to work with this person'').

In the moderate suspicion condition, participants were under the same pretense as in the low suspicion condition; however, the possibility that some individuals may have cheated was mentioned in passing. Participants then proceeded to provide veracity judgments embedded among filler items after watching each video segment as in the low suspicion condition.

In the high suspicion condition, participants did not view and assess the video segments under any pretense and instead were informed that their primary task was to determine whether people were telling the truth or lying about having cheated in the trivia game. Participants were informed that some people did indeed cheat and subsequently lied about doing so.

Suspicion Manipulation Check

A seven-item suspicion scale consisting of 7-point Likert-type items ($1 =$ no suspicion and $7 =$ high suspicion) served as a manipulation check to assess whether suspicion differed by experimental condition. Cronbach's α was .84 and a confirmatory factor analysis with LISREL was consistent with the fit of a unidimensional model (CFI $=.99$, RMSEA $=.05$).

A one-way ANOVA was conducted to determine whether reported suspicion varied as intended. The effect of the experimental condition upon scaled suspicion was statistically significant and large; $F(2, 88) = 14.38$, $p < .001$, $\eta^2 = .25$, $r = .50$. The cell means were ordered as predicted (low $= 3.74$, $SD = 1.14$; moderate $= 4.40$, SD 1.11; high $= 5.19$, $SD = .90$). There was a significant linear effect of experimental condition on reported suspicion [$F(1, 88) = 28.65$, $p < .001$, $\eta^2 = .25$, $r = .50$] and deviation from linearity was not significant [$F(1, 88) = 0.09$, $p > .05$, $\eta^2 = .001$, $r = .03$]. Decomposition of the sum of squares revealed that the linear component accounted for 99.6% of the explained sum of squares. Post hoc analyses indicated that all three conditions were significantly different according to Tukey HSD procedures ($p < .05$). Thus, the suspicion induction was an unqualified success.

Results

Across conditions, overall accuracy was significantly but only slightly above chance; $M = 53.1\%$, $SD = 13.7\%$, $t(90) = 2.14$, $p < .05$. The proportion of truth judgments was significantly greater than 50% reflecting substantial truth-bias; $M = 70.7\%$, $SD = 17.3\%$, $t(90) = 11.39$, $p < .001$. Means for all dependent measures across and within all conditions are presented in Table 1.

A one-way ANOVA with truth-bias as the dependent variable indicated that there was a significant and strong main effect for suspicion; $F(2, 88) = 14.83$, $p < .001$,

Table 1　Mean Truth-Bias and Detection Accuracy by Experimental Condition

	Suspicion			
	Low ($n = 30$)	Moderate ($n = 30$)	High($n = 31$)	Across conditions
Truth-Bias	78.0%	75.7%	58.7%	70.7%
	$SD = 19.2\%$	$SD = 11.6\%$	$SD = 13.6\%$	$SD = 17.3\%$
Truth Accuracy	84.0%	81.3%	56.8%	73.8%
	$SD = 23.1\%$	$SD = 15.7\%$	$SD = 19.4\%$	$SD = 23.0\%$
Lie Accuracy	27.3%	30.0%	39.4%	32.3%
	$SD = 22.0\%$	$SD = 16.4\%$	$SD = 23.4\%$	$SD = 21.2\%$
Overall Accuracy	55.7%	55.7%	48.1%	53.1%
	$SD = 11.6\%$	$SD = 11.0\%$	$SD = 16.6\%$	$SD = 13.7\%$

$\eta^2 = .25$, $r = .50$. The linear effect of suspicion on truth-bias was significant [$F(1, 88) = 24.76$, $p < .001$, $\eta^2 = .21$, $r = .46$] but was qualified by a smaller but statistically significant deviation from linearity [$F(1, 88) = 4.69$, $p < .05$, $\eta^2 = .04$, $r = .20$]. Application of specific linear ($+1$, 0, -1) and nonlinear (-1, 2, -1) contrasts indicated that while both contrasts were significant [linear $t (88) = 4.98$, $p < .001$, $r = .47$; nonlinear $t (88) = 2.16$, $p < .05$, $r = .22$], the linear contrast accounted for substantially more of the explained sum of squares (83.5%) than the nonlinear contrast (15.8%). Therefore, as in previous research, increasing suspicion produced a reduction in truth-bias.

A one-way ANOVA with three levels of suspicion and truth accuracy as the dependent variable was conducted to test the hypothesis 1a. There was a significant main effect for suspicion on truth accuracy [$F(2, 88) = 17.90$, $p < .001$, $\eta^2 = .29$, $r = .54$] as well as an associated significant linear effect [$F(1, 88) = 29.30$, $p < .001$, $\eta^2 = .24$, $r = .49$], demonstrating a continual decrease in truth accuracy from low to high suspicion conditions, but this was tempered by a statistically significant but smaller deviation from linearity [$F(1, 88) = 29.56$, $p < .05$, $\eta^2 = .05$, $r = .22$]. Figure 1 depicts the pattern of truth accuracy across experimental conditions. Application of a priori sets of contrasts derived from hypotheses H1a ($+1$, 0, -1) and H2 (-1, $+2$, -1) indicated that while both sets of contrasts were significant [linear $t (88) = 5.41$, $p < .001$, $r = .50$; nonlinear $t (88) = 2.50$, $p < .05$, $r = .26$], the linear (H1a) contrast accounted for substantially more (81.8%) of the explained sum of squares than the nonlinear (H2a) contrast (17.4%). Hence, the data are more consistent with a negative linear relationship between suspicion and truth accuracy (opposing effects H1a) than a curvilinear relationship (optimal effect H2a). An examination of cell means (Table 1) suggested that a post hoc contrast ($+1$, $+1$, -2) might provide an even better fit for the data. This post hoc contrast was significant [$t (88) = 5.96$, $p < .001$, $r = .54$] and accounted for 99.2% of the explained sum of squares.

The second part of the opposing effects hypothesis predicted that there would be a positive linear relationship between suspicion and lie accuracy (H1b). A one-way
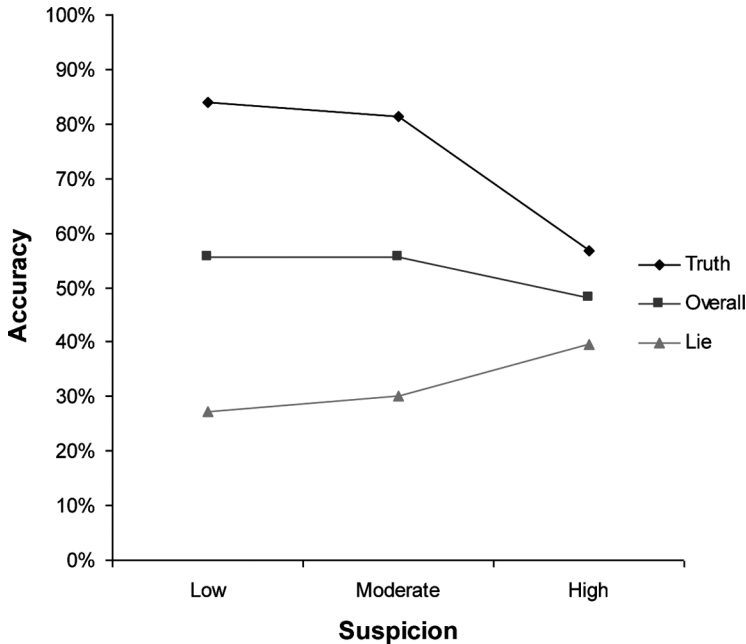
Figure 1 Detection accuracy across experimental conditions.

ANOVA with three levels of suspicion and lie accuracy as the dependent variable was conducted to test this hypothesis. The main effect for suspicion on lie accuracy was not significant [$F(2, 88) = 2.81$, $p = .06$, $\eta^2 = .06$, $r = .25$]. There was a significant linear effect of suspicion on lie accuracy [$F(1, 88) = 5.08$, $p < .05$, $\eta^2 = .05$, $r = .23$] and deviation from linearity was not significant [$F(1, 88) = 0.52$, $p > .05$, $\eta^2 = .01$, $r = .07$]. These results suggest a proportionate increase in lie accuracy with increasing suspicion (Figure 1). Applying an a priori contrast reflecting a positive linear relationship (-1, 0, $+1$) was significant [$t\ (88) = 2.25$, $p < .05$, $r = .23$] and accounted for 90.2% of the explained sum of squares. Thus, the data are consistent with the hypothesis of a positive linear relationship between suspicion and lie accuracy (H1b).

To test opposing effects H1c and optimal level H2, a one-way ANOVA with three levels of suspicion and overall accuracy as the dependent variable was conducted and indicated a significant main effect for suspicion on overall accuracy [$F(2, 88) = 3.30$, $p < .05$, $\eta^2 = .07$, $r = .26$]. The linear effect of suspicion on overall accuracy was significant [$F(1, 88) = 4.92$, $p < .05$, $\eta^2 = .05$, $r = .23$] and accounted for 71.6% of the explained sum of squares while the deviation from linearity was not significant [$F(1, 88) = 1.62$, $p > .05$, $\eta^2 = .02$, $r = .13$]. These results suggested a consistent decrease in overall accuracy with increasing suspicion (Figure 1). Examination of cell means (Table 1) indicated that a post hoc contrast ($+1$, $+1$, -2) might be an even better fit for the data, and when tested, it was significant [$t\ (88) = 2.57$, $p < .05$, $r = .26$] and accounted for practically the entire explained sum of squares.

According to correlation analyses, there was a significant linear association between suspicion and truth accuracy [r (89) $= -.61$, $p < .01$], lie accuracy [r (89) $= .34$, $p < .01$], and overall accuracy [r (89) $= -.25$, $p < .05$], indicating the presence of stronger associations between suspicion with truth and lie accuracy than with overall accuracy. Thus, the data are inconsistent with the hypothesis of a curvilinear relationship where an optimal level of overall detection accuracy would occur with moderate suspicion. Instead the data are more consistent with the hypotheses associated with opposing effects (see Figure 1).

Discussion

The goal of the current study was to reexamine the relationship between suspicion and deception detection accuracy. Contrary to McCornack and Levine's (1990) findings, arousing a moderate degree of suspicion did not improve detection accuracy. Individuals who were moderately suspicious in the current study judged message veracity with 55.7% accuracy, which was not different from the accuracy rate of those who were less suspicious (55.7% accuracy).

In general, the data from the current study were more consistent with the hypothesis of opposing effects than the optimal level hypothesis. The effect of suspicion involved a progressive decline in truth accuracy across experimental conditions and a progressive increase in lie accuracy across conditions. Thus, although the rate of change in accuracy differed (evident from the depiction in Figure 1), suspicion was found to affect truth and lie accuracy in opposite directions.

Although the current findings did not replicate the curvilinear relationship between suspicion and accuracy observed by McCornack and Levine (1990), it does not discount the possibility of such a nonlinear relationship under different conditions. There is one particularly notable difference between the current study and that of McCornack and Levine. In the current study, individuals were asked to make veracity judgments regarding messages of strangers. In contrast, individuals in McCornack and Levine's study were asked to judge messages of their romantic partners. Relational partners are more truth-biased than strangers (McCornack & Parks, 1986) which may dampen the onset of suspicion. The comparative results of the current study suggest that unique knowledge of a message source might moderate the relationship between suspicion and deception detection accuracy. McCornack and Levine's findings are superimposed with the current results in Figure 2.

If unique knowledge of a message source is indeed a moderator, then the rationale for a curvilinear relationship between suspicion and accuracy differs from what was originally put forth by McCornack and Levine (1990). They proposed that initial improvement of accuracy with increasing suspicion would arise from a decrease in truth-bias, and that a subsequent downturn in accuracy would be a result of developing a lie-bias. However, McCornack and Levine reported finding no empirical evidence to support this reasoning primarily because there was no evidence of lie-bias.
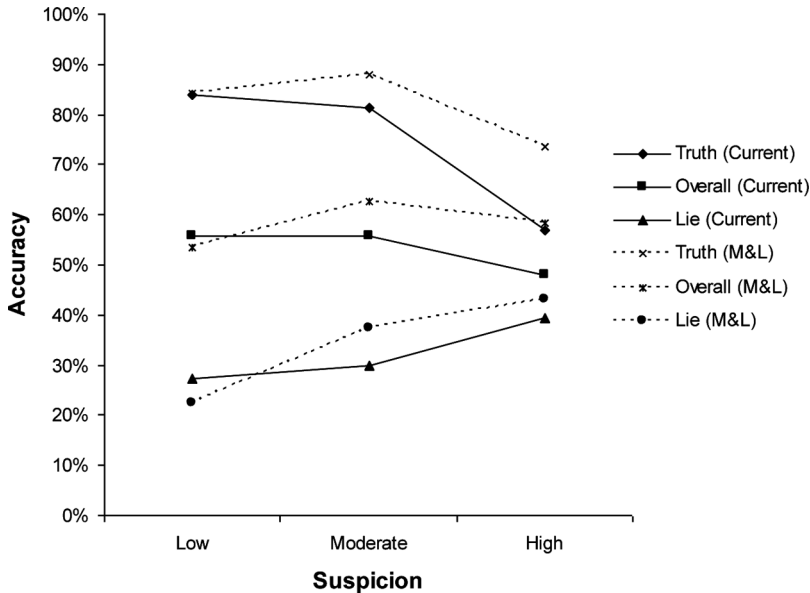
Figure 2   Current findings compared with McCormack & Levine (1990).

Unique knowledge of a message source may initially improve detection accuracy with increasing suspicion by providing contextual knowledge that enables more effective message processing. Recent research suggests that motive plays a crucial role in detecting deception (Levine, Kim, & Blair, 2010) and producing deceptive messages (Levine, Kim, & Hamel, 2010). When people lie, they do so for a reason (Levine, Kim, & Hamel, 2010), and when people make veracity judgments, they consider potential motive based on available information (Levine, Kim, & Blair, 2010). While there may not be any strong and reliable general cues to deception inherent within real-time interactions (DePaulo et al., 2003), greater success in deception detection may arise from processing incoming information in light of additional sources of information beyond the current interaction (Park, Levine, McCornack, Morrison, & Ferrara, 2002). Possessing a wealth of unique knowledge regarding a message source, which likely comes with having a close relationship, might better enable one to detect deception for at least two reasons: Such knowledge might (a) increase one's ability to correctly construe motive and assess messages accordingly and (b) provide a comparative foundation of knowledge for which to detect anomalies or contradictions in behavior or information from a particular person that might be indicative of deception for *that* individual. However, as the amount of suspicion continues to increase beyond moderate levels, errors in veracity judgments may increase due to reaching levels of arousal and uncertainty that hinders effective message processing.

The current study investigated the role of suspicion in deception detection through considering two seemingly different hypotheses putting forth the notion of there being opposing effects or an optimal level of suspicion regarding detection accuracy.

While the current data were more consistent with the opposing effects hypothesis, a comparison with McCornack and Levine's (1990) findings suggested the possibility of unique knowledge of a message source as a moderator; therefore, the current findings are not necessarily inconsistent with that of McCornack and Levine.

References

Bok, S. (1999). *Lying: Moral choice in public and private life* (Updated ed.). New York, NY: Vintage Books.

Bond, C. F., & DePaulo, B. M. (2006). Accuracy of deception judgments. *Personality and Social Psychology Review*, *10*, 214–234. doi:10.1207/s15327957pspr1003_2

Bond, G. D., Malloy, D. M., Arias, E. A., Nunn, S. N., & Thompson, L. A. (2005). Lie-biased decision making in prison. *Communication Reports*, *18*, 9–19. doi:10.1080/08934210500084180

Buller, D. B., Strzyzewski, K. D., & Comstock, J. (1991). Interpersonal deception: I. Deceivers' reactions to receivers' suspicions and probing. *Communication Monographs*, *58*, 1–24. doi:10.1080/03637759109376211

Burgoon, J. K., Buller, D. B., Ebesu, A. S., & Rockwell, P. (1994). Interpersonal deception: V. Accuracy in deception detection. *Communication Monographs*, *61*, 303–325. doi:10.1080/03637759409376340

DePaulo, B. M., Lindsay, J. J., Malone, B. E., Muhlenbruck, L., Charlton, K., & Cooper, H. (2003). Cues to deception. *Psychological Bulletin*, *129*, 74–118. doi:10.1037/0033-2909.129.1.74

Gilbert, D. T. (1991). How mental systems believe. *American Psychologist*, *46*, 107–119. doi:10.1037/0003-066X.47.5.669

Grice, H. P. (1989). *Studies in the way of words*. Cambridge, MA: Harvard University Press.

Hilton, J. L., Fein, S., & Miller, D. T. (1993). Suspicion and dispositional inference. *Personality and Social Psychology Bulletin*, *19*, 501–512. doi:10.1177/0146167293195003

Hubbell, A. P., Mitchell, M. M., & Gee, J. C. (2001). The relative effects of timing of suspicion and outcome involvement on biased message processing. *Communication Monographs*, *68*, 115–132. doi:10.1080/03637750128056

Levine, T. R., Kim, R. K., & Blair, J. P. (2010). (In)accuracy at detecting true and false confessions and denials: An initial test of a projected motive model of veracity judgments. *Human Communication Research*, *36*, 81–101. doi:10.1111/j.14682958.2009.01369.x

Levine, T. R., Kim, R. K., & Hamel, L. M. (2010). People lie for a reason: Three experiments documenting the principle of veracity. *Communication Research Reports*, *27*, 271–285. doi:10.1080/08824096.2010.496334

Levine, T. R., Kim, R. K., Park, H. S., & Hughes, M. K. (2006). Deception detection is a predictable linear function of message veracity base-rate: A formal test of Park and Levine's probability model. *Communication Monographs*, *73*, 243–260. doi:10.1080/03637750600873736

Levine, T. R., Park, H. S., & McCornack, S. A. (1999). Accuracy in detecting truths and lies: Documenting the "veracity effect." *Communication Monographs*, *66*, 125–144. doi:10.1080/03637759909376468

McCornack, S. A. (1992). Information manipulation theory. *Communication Monographs*, *59*, 1–16. doi:10.1080/03637759209376245

McCornack, S. A., & Levine, T. R. (1990). When lovers become leery: The relationship between suspicion and accuracy in detecting deception. *Communication Monographs*, *57*, 219–230. doi:10.1080/03637759009376197

McCornack, S. A., & Parks, M. R. (1986). Deception detection and relationship development: The other side of trust. In M. L. McLaughlin (Ed.), *Communication yearbook 9* (pp. 377–389). Beverly Hills, CA: Sage.

Meissner, C. A., & Kassin, S. M. (2002). ''He's guilty!'': Investigator bias in judgments of truth and deception. *Law and Human Behavior, 26*, 469–480. doi:10.1023/A:1020278620751

Millar, M. G., & Millar, K. U. (1997). The effects of cognitive capacity and suspicion on truth bias. *Communication Research, 24*, 556–570. doi:10.1177/009365097024005005

Park, H. S., & Levine, T. R. (2001). A probability model of accuracy in deception detection experiments. *Communication Monographs, 68*, 201–210. doi:10.1080/03637750128059

Park, H. S., Levine, T. R., McCornack, S. A., Morrison, K., & Ferrara, M. (2002). How people really detect lies. *Communication Monographs, 69*, 144–157. doi:10.1080/714041710

Stiff, J. B., Kim, H. J., & Ramesh, C. N. (1992). Truth biases and aroused suspicion in relational deception. *Communication Research, 19*, 326–345. doi:10.1177/009365092019003002

Toris, C., & DePaulo, B. M. (1985). Effects of actual deception and suspiciousness of deception on interpersonal perceptions. *Journal of Personality and Social Psychology, 47*, 1063–1073. doi:10.1037/0022-3514.47.5.1063

Zuckerman, M., Spiegel, N. H., DePaulo, B. M., & Rosenthal, R. (1982). Nonverbal strategies for decoding deception. *Journal of Nonverbal Behavior, 6*, 171–187. doi:10.1007/BF00987066