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Department of Psychology

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Madison Hunter, Kristen Slapinski, & Stephanie Madon, Ph.D.

The Effects of Contextual Information and Truth Expectancy on Deception Detection

Abstract

I conducted a study that investigated how contextual information and truth expectancy affect participants' ability to detect lies in a 2 (truth status: guilty liar vs. innocent truth teller) x 2 (contextual information: absent vs. present) x 2 (expectancy: lie vs. truth) experiment. As a result, I was able to examine whether participants with different expectancies about the suspects' truthfulness use contextual information differently to make judgments of deception. I predicted that because individuals with a lie expectancy might be more inclined to search for cues indicative of deception, they will display higher accuracy when contextual information is provided than individuals who have a truth bias. I also predicted that the presence of contextual information will increase the number of truth judgements, as found in prior research conducted in our laboratory. The preliminary results of my statistical analysis suggest that contextual information may not increase accuracy, but instead create a truth bias that is exhibited regardless of whether the individual is led to believe that the suspect is truthful or deceptive.

Introduction

Previous research suggests that contextual information increases accuracy in deception detection judgements (Blair, Levine, & Shaw 2010; Blair, Reimer, & Levine, 2018). Context increases accuracy by allowing the investigator to notice consistencies or inconsistencies in the suspect's statement.

However, prior research in our laboratory has shown that instead of increasing accuracy, the presence of contextual information increases the number of suspects judged to be truthful. College students already tend to have a truth bias, or inclination to believe that someone is telling the truth (Levine & McCornack, 1991). Therefore, it is possible that providing contextual information further increased the bias.

In contrast, police officers tend to have a lie bias, or the tendency to believe that someone is lying rather than telling the truth. Because of their experience in working with offenders in the criminal justice field, police often believe that most suspects they interact with are lying (Kassin, Meissner, & Norwick, 2005). Due to the different biases between undergraduates and police, contextual information may affect their judgements in different ways. For example, individuals who tend to believe that the suspect is likely to be lying may use contextual information more specifically to find discrepancies between the content of the suspect's statement and known contextual information.

Because of this gap in research, I conducted a study that manipulated the participants' expectancy as to whether the suspect was lying or telling the truth, along with either the presence or absence of contextual information. My hypothesis consisted of two predictions: (1) because individuals with a lie expectancy search for cues indicative of deception, they will be more accurate when contextual information is present than individuals who have a truth bias; (2) the presence of contextual information will increase the number of truth judgements, as found in prior research conducted in our laboratory.

Method

The participants were 97 students (73 females and 24 males) at Iowa State University. Their mean age was 19.96 years (SD = 4.45). To manipulate contextual information, participants were provided with background information about the logic problems (contextual information present), or were not provided with background information (contextual information absent). To manipulate expectancy, participants read a statement that the researchers conducting the experiment were 75% sure that the student in the video is either lying (lie expectancy) or telling the truth (truth expectancy). To manipulate truth status, participants viewed the statement made by either a guilty liar or an innocent truthteller. The videos were collected from a previous study using the cheating paradigm (Russano, Meissner, Narchet, & Kassin, 2004). In that study, students worked on logic problems with a confederate, who encouraged them to cheat. All participants denied cheating on the problems when questioned by the experimenter.

After watching the video, participants made a forced-choice veracity judgement as to whether the student in the video was innocent (telling the truth) or guilty (lying). Next, participants reported their demographics and used a 5-point Likert scale to report their confidence level, how seriously they took their decision, level of motivation to make an accurate judgment, familiarity with the situation, and lie-detecting ability.

Participants also made a continuous judgement as to whether the student was lying or telling the truth using a scale from 1 ("*The student was definitely telling the truth*") to 5 ("*The student was definitely lying.*"). They also answered the following questions on a scale from 1 to 5: "*If you had been the experimenter who accused the student of cheating, how likely would you have been to report the alleged cheating incident to the professor in charge of the study?*"; "*If the student really did cheat, how harshly do you think the student should be punished?*"; and "*In considering the student's statement, I tended to pay attention to…*" from 1 (Only non-verbal behavior) to 5 (Only verbal behavior).

Results

To predict the dichotomous judgements of deception, I conducted a logistic regression analysis with the experimental factors contextual information, expectancy, and truth status. The results were consistent with the hypothesis, indicating that when participants were given the lie expectancy, they were significantly more accurate in their judgements (77%) than participants who were given a truth expectancy (55%; $\beta = 1.19$, Wald $\chi^2 = 5.28$, $p = .022$, $OR = 3.27$, 95% CI [1.19 - 9.00]). I also found a main effect of truth status, which showed that participants were significantly more accurate when judging the truthful denials (76%), compared to the deceptive denials (53%; $\beta = -1.07$, Wald $\chi^2 = 4.33$ $p = .037$ $OR = 0.34$, 95% CI [0.12 - 0.94]). Inspection of proportions of accurate judgments in each condition indicated that when judging a truthful denial, accuracy was higher when contextual information was present (84%) than when contextual information was absent (68%). Conversely, when judging a deceptive denial, accuracy was lower when contextual information was present (48%) than when contextual information was absent (59%; $\beta = -2.03$, Wald $\chi^2 = 3.87$, $p = .049$, $OR = 0.13$, 95% CI [0.02 - 0.99]).

Conclusion

Overall, these results suggest that contextual information may not increase accuracy, but instead create a truth bias that is exhibited regardless of whether the individual is led to believe that the suspect is truthful or deceptive. These findings support my hypothesis that contextual information will increase the number of truthful judgements. However, contrary to one of my predictions, no significant interaction between contextual information and expectancy was observed. It should be noted that these are preliminary results based on a very small sample size. Therefore, these findings are merely speculative and should be interpreted with caution.

Tables

Table 1
Results of Logistic Regression Including Contextual Information, Expectancy, and Truth Status

Predicting Accuracy of Dichotomous Judgment

	β	Wald χ^2	*p*	*OR*	95% CI
Contextual Information	0.04	0.00	.947	1.04[a]	[0.38 – 2.85]
Expectancy	1.19	5.28	.022	3.27[a]	[1.19– 9.00]
Truth Status	-1.07	4.33	.037	0.34[a]	[0.12 – 0.94]
Contextual Information × Expectancy	1.23	1.43	.232	3.43[b]	[0.45 – 25.93]
Contextual Information × Truth Status	-2.03	3.87	.049	0.13[b]	[0.02 – 0.99]
Expectancy × Truth Status	0.95	0.84	.360	2.57[b]	[0.34 – 19.45]
Contextual Information × Expectancy × Truth Status	-1.85	0.80	.371	0.16[b]	[0.00 – 9.01]

Note. $df = 1$, $N = 97$ for all tests. OR = odds ratio; CI = confidence interval.
[a]OR = Exp(β), representing difference between factor levels.
[b]OR = Exp(β), representing ratio of ORs of the constituent simple main effects.

References

Blair, J. Pete, Levine, Timothy R, & Shaw, Allison S. (2010). Content in Context Improves Deception Detection Accuracy. *Human Communication Research, 36*(3), 423-442.

Blair, J. Pete, Reimer, Torsten O, & Levine, Timothy R. (2018). The Role of Consistency in Detecting Deception: The Superiority of Correspondence over Coherence. *Communication Studies, 69*(5), 483-498.

Kassin, Saul M, Meissner, Christian A, & Norwick, Rebecca J. (2005). "I'd Know a False Confession if I Saw One". *Law and Human Behavior, 29*(2), 211-227.

Levine, Timothy R, & McCornack, Steven A. (1991). The dark side of trust: Conceptualizing and measuring types of communicative suspicion. *Communication Quarterly, 39*(4), 325- 340.

Melissa B. Russano, Christian A. Meissner, Fadia M. Narchet, & Saul M. Kassin. 2005). Investigating True and False Confessions within a Novel Experimental Paradigm. *Psychological Science, 16*(6), 481-486.

Zuckerman, M., DePaulo, B. M., & Rosenthal, R. (1981). Verbal and nonverbal communication of deception. *Advances in Experimental Social Psychology, 14*. 1-59. https://dx.doi.org/10.1016/S0065-2601(08)60369-X