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Deciding How to Deceive: Differences in Communication and Detection Between Good and Bad Liars

Lyn M. Van Swol & Jihyun Esther Paik

To study deception, participants were randomly assigned the role of allocator or recipient in an ultimatum negotiation game. Allocators “earned” 7 dollars and divided the money between themselves and recipient and communicated the decision either face-to-face or through text chat. Recipients were unaware the amount the allocator had, and therefore, allocators could deceive. Most allocators used deception. We hypothesized that participants who self-identified as good liars would communicate more face-to-face than through text chat when deceiving, and this was supported for deceptive omission but not fabrications. Good liars were more likely to have their truths correctly detected than bad liars.

Keywords: Deception; Detection; Lie; Negativity Bias; Online; Truth Bias

People deceive when truth is problematic for goal attainment (Levine, 2014). If a negotiator keeps more money than their partner, they may deceive to prevent their partner from protesting this problematic truth. Much deception is not planned (McCornack, Morrison, Paik, Wisner, & Zhu, 2014), but if a sender knows they want to avoid disclosing a problematic truth, they may base decisions about what communication medium to use on what they think will reduce having to disclose the problematic truth. If a deceiver perceives (whether accurately or not) that their deception to hide the problematic truth could be detected through non-verbal

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cues, they might avoid face-to-face communication (Hancock, Woodworth, & Goorha, 2010). To investigate communication channel and deception, this study addresses whether people who have more confidence in their ability to deceive and perceive themselves as successful (good) liars choose to communicate through different channels and are perceived by others in the interaction differently than people who perceive themselves as bad liars and have less confidence in their deception ability. The study first addresses whether others view differences in the demeanor of self-perceived good and bad liars, and then examines the decisions people make about communicating deception and truth in a negotiation based on their perception of their ability to successfully deceive.

Self-Perceived Good and Bad Liars

People often use deception in negotiations to conceal problematic information or portray an offer as more favorable (Lewicki, Litterer, Minton, & Saunders, 1994), but how people deceive may depend on self-perceived ability to successfully pull off a deception. People's perception of their deceptive ability may result from how others have reacted to their past deceptions. DePaulo and Rosenthal (1979) posited there are individual differences in how believable people are perceived in general and some people are *seen* as more credible, regardless of whether they *are* actually more truthful (see also, Bond & DePaulo, 2008; Bond, Kahler, & Paolicelli, 1985; Levine, 2016). The sender's demeanor, as it relates to deception, represents a pattern of behaviors believed to be associated with deception or honesty that create an impression of the sender's credibility.

The Global Deception Research Team (2006) identified gaze aversion as a primary behavior that elicits the impression, though not necessarily accurate, that someone is deceptive. Levine et al. (2011) identified dishonest demeanor behaviors as avoiding eye contact, responding slowly and communicating hesitantly, speaking with vocal uncertainty, fidgeting with hands and feet, appearing tense and anxious, behaving inconsistently, and expressing verbal uncertainty. Honest demeanor behaviors identified were communicating with confidence and composure, being friendly and pleasant, acting engaged and involved, and giving plausible explanations to one's interaction partner. Some of these behaviors, like appearing composed, friendly, or nervous, can represent a more gestalt impression than an actual observation of specific behavior (Levine et al., 2011). Bond and DePaulo (2008) suggested differences in perceived deceptiveness also could be linked to facial features that convey a sense of gestalt trustworthiness (Porter, Ten Brinke, & Gustaw, 2010; Rezlescu, Duchaine, Olivola, & Chater, 2012), like baby-faced features (Maoz, 2012) or wider facial structure (Haselhuhn & Wong, 2011).

Perceptions of truthfulness or deceptiveness based on demeanor cues discussed above are largely orthogonal to actual levels of deception (Levine et al., 2011; Global Deception Research Team, 2006). That is, someone with a dishonest demeanor appears dishonest when both telling a lie or truth. This is different from a transparent liar. A transparent liar is perceived as deceptive when they lie but not when

telling the truth (Levine, 2016). Bond and DePaulo (2008) noted that senders who appear credible and truthful may be believed regardless of the veracity of their message. Therefore, how truthful someone appears may not be predictive of actual honesty. Researchers have found that perception of a dishonest demeanor is significantly related to suspicion by the receiver but not to actual level of honesty of the sender (Levine et al., 2011; Van Swol & Braun, 2014a; Van Swol, Braun, & Kolb, 2015). Because of demeanor effects, detection accuracy is more a function of individual demeanor differences of the sender rather than the skill level of the receiver (Bond & DePaulo, 2008; Levine, 2016). Someone with a dishonest demeanor is going to be perceived as more deceptive, regardless of their actual honesty, than someone with a more honest demeanor, whereas someone with an honest demeanor will be believed both when lying and telling the truth. Levine (2016) noted that most of the variance in deception detection is due to demeanor differences among senders rather than sender transparency or skill of the judge.

We hypothesize that most people who perceive themselves as bad liars do so because they have a more dishonest demeanor when communicating than self-perceived good liars. Someone with a dishonest demeanor should have a history of people being suspicious of them, and as a result, self-perceived bad liars have the impression that they cannot pull off deception and are unskilled or “bad” liars. However, they may not learn that honesty is rewarded given that their demeanor may put them under a cloud of suspicion regardless of what they do. Those with a credible, honest demeanor “discover that they can avoid punishment” when they deceive (Bond & DePaulo, 2008, p. 487) and should have more confidence in their deceptive ability. However, in addition, they should be believed when they tell the truth.

Because we expect self-perceived bad liars to have a more dishonest demeanor, they should be perceived as more deceptive than good liars when deceiving or telling the truth. That is, they should be both bad liars and bad truth tellers. Self-perceived good liars should have a more honest demeanor and be perceived as truthful when deceiving or when truthful. Receivers use demeanor cues to make judgments of deception, but demeanor cues are not significantly related to actual level of deception (Levine et al., 2011; Van Swol et al., 2015). So, for both good and bad liars, demeanor should not be significantly related to actual honest or dishonest behavior and be non-diagnostic towards detecting deception.

H1: Participants who identify as bad liars will be perceived to have a more dishonest demeanor than will participants who identify as good liars.

H2: Participants who identify as bad liars will have (a) fewer truths and (b) more deception correctly detected than participants who identify as good liars.

According to the negativity bias, negative information is often more salient and affects impression formation and social judgments more strongly than positive information (Fiske, 1980; Rozin & Royzman, 2001). People judge negative information as more diagnostic about an individual's character and more useful for making judgments than positive information, although this judgment is not necessarily correct. If self-perceived bad liars are more anxious and act more suspiciously than self-perceived good liars in

general, their dishonest demeanor cues should have a stronger effect on the receiver's judgment and be more non-diagnostic and more misleading towards correctly detecting truths and deception than more honest demeanor cues from good liars. Thus, we predict that due to the negativity bias (Baumeister, Finkenauer, & Vohs, 2001), self-perceived bad liars' dishonest demeanor cues are going to have a larger effect than good liars' demeanor and will be less diagnostic towards predicting correct detection. Therefore, we propose the following hypothesis:

H3: Dishonest demeanor will be less diagnostic for correct detection for bad liars than it will for good liars.

When deciding what communication channel to use for a lie, strategically it may be more rational to deceive someone to their face, given that people expect more deception in an online environment (Caspi & Gorsky, 2006; Van Swol & Braun, 2014a; Whitty & Carville, 2008), but people may make the decision about how to communicate a deception more on the basis of face concerns than strategy. People often erroneously think they will display easily perceived nonverbal cues to deception (Vrij, Granhag, & Porter, 2011) and believe these cues are more easily concealed online (George, Marett, & Tilley, 2004). Further, there is less face threat (Burgoon & Buller, 2004) and more social distance (DePaulo, Kashy, Kirkendol, Wyer, & Epstein, 1996; Hancock et al., 2010) when deceiving online, so people may anticipate less discomfort if confronted with a deception. When telling the truth, participants will be more likely to communicate face-to-face than when engaging in deception, given lessened concern and anxiety about detection, especially the social discomfort of a face-to-face accusation (DePaulo et al., 1996) and reduced concerns for having to monitor their partner for signs of suspicion in a face-to-face environment (Burgoon & Buller, 2004). Van Swol et al. (2015) found evidence that people choose online communication more when they deceive, and we seek to replicate this finding.

H4: Participants will decide to communicate more face-to-face than through text chat when they are telling the truth.

However, we seek to extend this previous research and examine how channel choice for deception interacts with people's perception of their deceptive ability. The preference to engage in deception online may be lessened for self-perceived good liars, who due to a more honest demeanor perceive themselves as skilled deceivers, anticipate less chance of being detected, and may not anticipate as much anxiety and guilt. People who perceive themselves as bad liars and who may have a more dishonest demeanor will likely anticipate more anxiety and guilt and anticipate a higher chance of detection when deceiving and may make adjustments to how they communicate when they deceive in order to avoid detection. Given their perception of themselves as bad liars, we anticipate that bad liars will avoid face-to-face communication when they deceive because of mistaken notions that deception is detected through nonverbal cues like eye contact (DePaulo et al., 2003; Levine et al., 2006; Levine et al., 2011) and the perception that deception is less easily detected online (George et al., 2004). However, people who perceive that they can deceive successfully are likely to communicate deception more face-to-face (Serota, Levine, & Boster,

2010; Van Swol et al., 2015). Further, we hypothesize that due to a dishonest demeanor self-perceived bad liars will have past difficulty with deception and will find engaging in deception more stressful. That is, if bad liars have been accused of deception more in the past, then they may have more anxiety about deceiving face-to-face. Due to greater face concerns of self-perceived bad liars, they will report more anxiety and guilt than good liars when interacting with their partner.

H5: Bad liars will decide to communicate more often through text chat than face-to-face when they engage in deception (both omission and fabrications) than will good liars.

H6: Bad liars will have higher levels of anxiety and guilt than will good liars.

Method

Participants

Two hundred and twenty undergraduates (110 dyads) from a large, public midwestern university in the United States participated for extra credit in a communication course. Participants were recruited through an online site announcing ongoing studies and were required to participate in person at a university lab.

Procedure

Upon arrival, participants were randomly assigned to the role of allocator or recipient. The allocator received money that they could divide between themselves and recipient, and since the recipient was unaware of the amount of money the allocator received, the allocator could deceive. Then, participants were put alone in a room with a laptop computer and given an informed consent form. Allocators completed a survey, which classified them as good or bad liars. They answered two statements (Overall, I am a very good liar; Most people cannot tell when I lie; Cronbach's $\alpha = 0.79$) on a scale from 1 (*True*) to 4 (*False*). Only two items were used so the experimenter could average the two items immediately to classify the allocator to their role as good or bad liar for the subsequent priming task. Those who averaged two or less were classified as self-perceived good liars ($n = 49$, $M = 1.84$, $SD = 0.30$); those who averaged 2.5 and above were classified as self-perceived bad liars ($n = 61$; $M = 3.01$, $SD = 0.50$). To increase the salience of their self-identity as a good or bad liar, allocators did a writing task based on their assignment as being a good or bad liar. In the good (bad) liar condition allocators were asked to write about a time they lied or used deception successfully (unsuccessfully), and their deception was not detected (they were caught). Allocators were given five minutes to work on the prompt.

While the allocator did the writing task, the recipient was given a written instructions:

In this study, Player 1 will receive a small amount of money based on Player 1's performance on a 10 item trivia quiz. For every correct answer, Player 1 will

receive \$1. Therefore, if Player 1 answers every question correctly, Player 1 receives \$10. An example question for that quiz is: Who was nicknamed Stalebread? Player 1 will then decide how to distribute the received money between themselves and you. That is, they will decide how much of the money to keep and how much of the money to give to you. You will not be told the exact amount of money that Player 1 was given. That is, only Player 1 will know exactly how much money they have to allocate. Once Player 1 has decided how much to give to you (and how much to keep for themselves), they will interact with you for two minutes, during which time they will announce their decision. They will tell you how much money they are offering you. They can tell you how much money they received from the experimenter, but we do not require them to tell you. However, if they do not tell you, you are free to ask them how much money the experimenter gave them. Once your partner tells you how much money they are offering to you, the two of you are free to talk about whatever it is that you wish. Player 1 gets to decide whether they want to meet with you face-to-face or anonymously through text chat. After the two minutes are over, your interaction will end. If you interacted face-to-face, you will return to your room. After your interaction is complete, you will choose whether to “accept” or “reject” their offer. If you accept their offer, then the money will be distributed between the two of you according to the distribution that Player 1 specified. If you reject their offer, you will receive a guaranteed \$1.75, and Player 1 will receive \$0. The amount of money that you and Player 1 receive for this portion of the study will depend on how much they have allocated to each person and whether you accepted or rejected their allocation decision. Thus, it is important that you make your decisions carefully. You should also feel free, during the two minutes you spend with Player 1, to ask them any questions that might help you make your decision. All of the above information is common knowledge. Both players have been given the same instructions, so each person knows the consequences of each decision.

The experimenter handed the recipient the sheet and paraphrased the instructions, emphasizing that the recipient could ask the allocator questions about the allocation amount. The example trivia question given to the recipient was pre-tested to be extremely difficult; no one ($n = 17$) got it correct in pilot tests. This gave the impression that the trivia quiz was very difficult and created the expectation the allocator would not have a lot of money to allocate.

After the writing task, the allocator took a 10-item trivia quiz. Allocators knew they would receive money based on their performance. The trivia quiz had six very easy questions (e.g., Name one fruit that has a color in its name) and four very difficult questions (e.g., What has a malodorous tetroxide?) that no one got correct in pre-tests. While taking the quiz, participants were not allowed to use an electronic device and were watched by the experimenter. The experimenter did not actually grade the quiz. Upon completion, the experiment returned with an envelope with five 1-dollar bills and four quarters saying, “Alright. You got six right out of ten. So here is your money.” Next, the experimenter told the participant they were in the bonus condition where they could earn an extra dollar if they called a coin toss correctly. The experimenter flipped a coin asking the participant to call heads or tails. Without showing the coin, the experimenter exclaimed, “Heads (tails), you win! You won an extra dollar.” The experimenter brought back the dollar, stating, “Now

you have seven dollars total to distribute.” The bonus dollar was used as a way to add an extra dollar to the endowment because past research found it increased rates of deception (Van Swol et al., 2015).

Next, the allocator was given an instruction sheet. The sheet gave similar instructions as the sheet given to the recipient. It noted that the recipient only knew the allocator had received a small amount of money based on the trivia quiz. Further, the allocator was told, “Player 2 was only given one example of a question from the quiz (Example shown to Player 2: Who was nicknamed Stalebread?). That is, only you know exactly how much money you have to allocate.” It was emphasized the allocator could, but did not have to, tell the recipient how much money the allocator had to allocate. The allocator was told they could choose what channel (face-to-face or text chat) to communicate. Instructions concluded with, “Both players have been given the same instructions, so each person knows the consequences of each decision.” Allocators were given a form to write down the amount of money given and the distribution decision. They were asked to indicate the channel through which they wanted to communicate (face-to-face or text chat) on the form. All participants retained their sheet during the interaction.

After the allocator made a decision about the distribution amount and the communication channel, the experimenter collected the form and set up the interaction using the channel chosen by the allocator. For face-to-face, the experimenter brought the recipient to the allocator’s room and instructed the recipient to sit at the table with the allocator. Participants were told they had two minutes to discuss the decision with the door closed and that they should feel free to open the door when finished. The experimenter left the room, shutting the door, and the participants began their discussion. The room was equipped with hidden surveillance equipment to video record the interaction. Participants had been informed that any interaction would be videotaped.

For text chat, the experimenter separately opened up a chat application “Psi” on a laptop. Psi allowed anonymous chat across a Wi-Fi network. The application displayed “Research user 1 (2) is typing” to the user while the other user was typing and did not allow visualized nonverbal expressions other than sequences of characters (e.g., :-)). The experimenter told each participant that they will be interacting with their partner for two minutes and the program works like any other chat program. The experimenter set up the allocator’s laptop first. The allocator waited until the recipient logged in and began typing. After confirming the first message was sent, the experimenter left the room with the door open. Either when the time was up or when participants indicated they had finished, the experimenter saved the chat into a text file and closed Psi.

After the interaction (in face-to-face, the recipient was brought back to their room), both participants completed a questionnaire. First, the recipient indicated if she rejected or accepted the allocator’s offer on the decision form. Only two offers, both from bad liars using deceptive omission, were rejected. Then, the experimenter divided the money for the two participants.

Once they completed the questionnaire, participants were thanked and given the money as decided and a debriefing sheet. Allocators’ writing prompt was destroyed

so that they would not leave a sheet detailing a past deception. The experimenter made sure participants left the lab separately so that they did not have an opportunity to interact after the experiment.

Measures

Relationship

Six questions (Van Swol et al., 2015) assessed relationship with their partner (i.e., How often have you talked with your partner before this experiment?) on a scale from 1 (*Never talked, don't know at all*) to 7 (*Talked often, know very well*). A confirmatory factor analysis (CFA) found poor fit of a unidimensional model, $\chi^2(df = 9) = 59.13$, $p < 0.01$, RMSEA = 0.23, SRMR = 0.04. Deleting two items with large error terms yielded acceptable model fit: $\chi^2(df = 2) = 2.31$, $p = 0.32$, RMSE = 0.04; SRMR = 0.01. The mean of the four questions provided a measure of relationship with partner. Cronbach alphas were good (recipient = 0.90; allocator = 0.89).

Recipient suspicion

Seven questions (Van Swol et al., 2015) assessed recipient suspicion (I found my partner's answer believable, etc.) on a 1 (*True*) to 7 (*False*) scale. The CFA results suggested poor fit of the unidimensional model, $\chi^2(df = 14) = 46.70$, $p < 0.01$, RMSEA = 0.18, SRMR = 0.09. After deleting two items with large error terms, the factor analysis yielded good model fit ($\chi^2(df = 5) = 6.42$, $p = 0.27$, RMSE = 0.06; SRMR = 0.03). The mean of the five questions was taken as a measure of recipient suspicion (Cronbach alpha = 0.85).

Recipient perception of honest-dishonest demeanor

Eleven questions (with permission from Levine) assessed Levine et al.'s (2011) 11 behaviors linked to honest-dishonest demeanor. Four honest and seven dishonest demeanor (reverse coded) cues were measured on a scale from 1 (*True*) to 7 (*False*). Because the 11 behaviors were unidimensional in previous research (Levine et al., 2001), the CFA tested a unidimensional model. The CFA was run on data for face-to-face interactions to include all 11 items. The model Chi-square was significant; alternate-fit indexes indicated unacceptable model fit, $\chi^2(df = 44) = 97.448$, $p < 0.001$, RMSEA = 0.16, SRMR = 0.10. The inter-item correlation matrix suggested a two-dimensional model instead: honest and dishonest demeanor. The two dimensional model Chi-square was still significant, indicating unacceptable fit, $\chi^2(df = 43) = 70.31$, $p < 0.01$, RMSEA = 0.11, SRMR = 0.08. Two items with substantially large error terms were removed (My partner avoided eye contact, partner conveyed uncertainty in his/her tone of voice) to improve structural validity. This yielded acceptable model fit ($\chi^2(df = 26) = 29.82$, $p = 0.27$, RMSE = 0.05; SRMR = 0.07). A two-dimension measure is used. The mean of four honest demeanor and five dishonest demeanor questions was used as a measure of honest and dishonest demeanor, respectively. Alpha coefficients were acceptable ($\alpha = 0.82$ for honest demeanor; $\alpha = 0.74$ for dishonest demeanor). Both demeanor indices were coded so higher numbers indicate

higher perception of dishonest demeanor. For text chat interactions, one of the dishonest demeanor question was excluded (My partner fidgeted excessively with his/her hands and feet) because nonverbal cues were not observable.

Allocator emotion

A 20 item PANAS- style scale adapted from Watson, Clark, and Tellegen (1988; see also Van Swol et al., 2015) measured allocator emotion. A factor analysis found five factors. The first factor (Eigen value = 6.1) accounted for 30.5% of the variance and included negative emotions related to anxiety and guilt (anxious, distressed, upset, guilty, scared, irritable, ashamed, sad, nervous, tension, jittery, uncomfortable, and afraid, Cronbach's alpha = 0.89). We took the mean of these emotions for an index of allocator anxiety and guilt. The second factor (Eigen value = 2.93) accounted for 14.56% of the variance and included positive emotions (Cronbach's alpha = 0.84). The rest of the factors will not be analyzed here.

Results

Manipulation Check on Relationship

Participants rated their relationship with their partner. Partners did not know partners very well, and there were no differences between offer type ($p > 0.10$; Allocators: truths $M = 1.72$, $SD = 1.42$, omission $M = 1.57$, $SD = 1.31$, fabrication $M = 1.69$, $SD = 1.85$; Recipients: truths $M = 1.52$, $SD = 1.37$, omission $M = 1.47$, $SD = 1.16$, fabrication $M = 1.80$, $SD = 1.83$).

Categories of Offer Type

For 110 dyads, 43 allocators told the truth (39.1%, e.g., "I can tell you that I have 7 dollars cause then I'll just tell you that I'm giving you half of it"), 47 used deceptive omission (42.7%, e.g., "I don't know if I'm supposed to divulge how much money total I have but um the proposal is to give you 3 dollars."), and 20 had fabrications (18.2%, e.g., "so I just got 4 so I guess and she told me that if you reject the offer you will get 1.75 so I think I can make it half so I can give you 2 and I keep 2 so we can work it out so we both win"; see Table 1). For truths, 23 stated the truth up front (10 good liars; 12 bad liars), 16 stated the truth after being asked the allocation amount (5 good liars, 11 bad liars), and 4 gave the recipient at least half the money but did not tell the recipient the allocation amount (1 good liar; 3 bad liars). If the allocator offered the recipient less than half the allocation amount but told the recipient the true allocation amount (e.g., I received \$7, and I'm giving you \$2.50.), this was classified as a truth. Three allocators lied with their fabrication up front and 17 lied after being asked the allocation amount. When the allocator gave the recipient less than half the allocation amount and failed to tell the recipient what the allocator had received, we classified this as omission. With omission, the sender violates quantity by failing to share relevant information (McCornack, 1992; McCornack et al., 2014). We classified omission offers of less than half the allocation amount as deceptive (omission offers of half or more were classified as truth) because past research has found that recipients view offers of less

than half in the ultimatum game as unfair and often punish their partner as a result (Kim, Schnall, Yi, & White, 2013; Takagishi, Fujii, Kameshima, Koizumi, & Takahashi, 2009; Valenzuela & Srivastava, 2012). Further, deceptive omission is often viewed as more deceptive than truth, although not as deceptive as a fabrication (Spranca, Minsk, & Baron, 1991; Tenbrunsel & Messick, 2004; Van Swol & Braun, 2014b; Van Swol, Malhotra, & Braun, 2012). Allocators were asked, “Do you believe you deceived your partner?”, “Did you lie to your partner?”, and “Did you tell your partner the whole truth?” There were significant differences by offer type, $F(2, 109) = 41.77$, partial $\eta^2 = 0.44$, $p < 0.001$; $F(2, 109) = 45.15$, partial $\eta^2 = 0.46$, $p < 0.001$; $F(2, 109) = 67.55$, partial $\eta^2 = 0.56$, $p < 0.001$, respectively. Post hoc tests found significant differences between all offer types for every question ($p < 0.01$; see Table 2). Therefore, deceptive omission was perceived as different from both truths and fabrications by the allocators.

We tested if self-identified good liars would engage in more deception than bad liars. A comparison of good and bad liars for truths and deception (fabrications and deceptive omission) found no difference, $\chi^2(df = 1) = 1.54$, $\phi = 0.12$, $p = 0.22$ (see Table 1) for frequencies by offer type.

Demeanor and Good and Bad Liars

We tested for differences by offer type for recipients’ perception of the allocator’s honest and dishonest demeanor with analysis of variance (higher scores indicate more dishonest and less honest demeanors). For bad liars, there was no difference on dishonest demeanor by offer type (*Fabrications* = 3.00, *SD* = 1.18, *Truth* = 2.41, *SD* = 1.25, *Omission* = 2.52, *SD* = 1.19, $F[2, 58] = 0.94$, partial $\eta^2 = 0.03$, $p = 0.40$) or honest demeanor (*Fabrications* = 2.32, *SD* = 0.70, *Truth* = 2.11, *SD* = 1.22, *Omission* = 2.53, *SD* = 1.38, $F[2, 58] = 0.75$, partial $\eta^2 = 0.03$, $p = 0.48$). Bad liars were not perceived to have a more dishonest demeanor when they deceived. For good liars, there was also no difference on perceived dishonest demeanor by offer type (*Fabrications* = 2.89, *SD* = 1.82, *Truth* = 2.32, *SD* = 1.40, *Omission* = 2.23, *SD* = 0.86, $F[2, 45] = 0.78$, partial $\eta^2 = 0.03$, $p = 0.47$), but there was a significant difference of honest demeanor (*Fabrications* = 3.08, *SD* = 1.65, *Truth* = 1.88, *SD* = 0.86, *Omission* = 2.39, *SD* = 0.98, $F[2, 45] = 3.36$, partial $\eta^2 = 0.13$, $p = 0.04$). Therefore, good liars appeared more honest when they told the truth.

Overall good liars’ (honest demeanor: $M = 2.36$, *SD* = 1.15; dishonest demeanor: $M = 2.23$, *SD* = 1.25) and bad liars’ demeanor (honest demeanor: $M = 2.31$, *SD* = 1.21;

Table 1 Deception Frequencies and Percentages in Parentheses

	Truth		Omission		Lie		Total
	CMC	FTF	CMC	FTF	CMC	FTF	
Good Liar	2	14	9	15	8	1	49 (44.5%)
Bad Liar	6	21	16	7	6	5	61 (55.5%)
Total	8 (18.6)	35 (81.4)	25 (53.2)	22 (46.8)	14 (70.0)	6 (30.0)	110

Table 2 Allocators' Perception of Their Offer

	Offer Type					
	Truth		Omission		Lie	
	NO	YES	NO	YES	NO	YES
Do you believe you deceived?	43	0	23	24	3	17
Lied?	43	0	38	9	4	16
Told the whole truth?	4	39	36	11	20	0

Table 3 Detection of Truths and Deception

	Offer Type			
	Truth	Omission	Lie	Total
Correct detection <i>n</i> (%)	37 (88.1)	19 (41.3)	4 (20.0)	60 (55.6)
Incorrect detection <i>n</i> (%)	5 (11.9)	27 (58.7)	16 (80.0)	48 (44.4)
Total	42	46	20	108

	Truth		Omission		Lie	
	CMC	FTF	CMC	FTF	CMC	FTF
Correct detection <i>n</i> (%)	6(75%)	31(91%)	11(46%)	8(36%)	3 (21%)	1(17%)
Incorrect detection <i>n</i> (%)	2(25%)	3(9%)	13(54%)	14(64%)	11(79%)	5(83%)
Total						

	Truth		Omission		Lie	
	Good L.	Bad L.	Good L.	Bad L.	Good L.	Bad L.
Correct detection <i>n</i> (%)	15(100%)	22(81%)	11(48%)	8(35%)	2(22%)	2(18%)
Incorrect detection <i>n</i> (%)	0%	5(19%)	12(52%)	15(65%)	7(78%)	9(82%)
Total						

dishonest demeanor: $M = 2.25$, $SD = 1.06$) were perceived similarly ($F < 1.00$). H1, that bad liars would have a more overall dishonest demeanor as perceived by their partner, was not supported.

Detection of Deception

In the questionnaire, the recipient was asked, "Did your partner tell you how much money he or she was given by the experimenter to allocate?" If yes was answered to this first question, they were asked, "Do you think your partner lied about the amount of money...?" If no was answered to the first question, they were asked, "Do you think your partner avoided telling you the amount of money...so that they could keep more of

the money?" If the recipient answered yes to whichever of these last two questions applied, they were classified as perceiving deception. Further, if they perceived deception and the allocator had used either deceptive omission or fabrication, this was classified as correct detection, but classified as incorrect detection if the allocator told a truth. If the recipient answered no to whichever of these last two questions applied to them, they were classified as not perceiving deception. If the allocator had told a truth, this was classified as correct detection, but classified as incorrect deception if the allocator had used deception (fabrication or deceptive omission).

In support of previous research (Levine et al., 2011; Van Swol et al., 2015), demeanor was related to increased suspicion but not to accurate detection. There was a strong correlation between perception of dishonest demeanor and increased suspicion ($r = 0.50, p < 0.001$) and between perception of honest demeanor (higher numbers indicate less perception of honesty) and increased suspicion ($r = 0.49, p < 0.001$) but no relationship between honest ($r = -0.04, p = 0.70$) or perception of dishonest demeanor ($r = -0.07, p = 0.51$) and correct detection.

To test that recipients would correctly detect more deception from bad liars and more truths from good liars (H2a and 2b), a binary logistic regression on correct detection with the predictors of offer and type of liar (good or bad) was conducted. The model with the inclusion of the interaction between predictors was significant $\chi^2 (df = 3) = 25.61, p < 0.001$. The interaction between type of liar and offer type significantly predicted correct detection, $B = 2.07, SE = 0.75, p = 0.006$. For truths, recipients were able to correctly classify truths for good liars (100% correct detection) more than for bad liars (81%), $\chi^2 (df = 1) = 3.15, \phi = 0.27, p = 0.04$. However, recipients were not able to correctly classify more deceptive omission for bad liars (35% correct detection) than good liars (48%), $\chi^2 (df = 1) = 0.81, \phi = 0.13, p = 0.37$, nor were they able to correctly classify more fabrications for bad liars (18%) than good liars (22%). H2a was supported: Good liars had more truths correctly detected. H2b was not supported: Bad liars did not have more deception correctly detected.

H3 predicted demeanor would be less related to correct detection of deception for bad than good liars. With binary logistic regression, we tested how recipients' perception of the allocators' honest and dishonest demeanor interacted with type of liar to predict correct detection. For honest demeanor, the model was not significant, $\chi^2 (df = 3) = 0.73, p = 0.87$. For dishonest demeanor, the model with inclusion of interaction term significantly predicted correct detection $\chi^2 (df = 3) = 8.50, p = 0.04$. The interaction between type of liar and dishonest demeanor was a significant predictor of correct detection, $B = 1.01, SE = 0.39, p = 0.009$. To understand this interaction, we correlated correct detection (1 = correct, 0 = wrong) with dishonest demeanor (higher numbers indicate a more dishonest demeanor). For good liars, dishonest demeanor is positively related to more correct detection, but the relationship is not significant ($r = 0.22, p = 0.13$). For bad liars, perception of dishonest demeanor significantly correlates to less correct detection ($r = -0.29, p = 0.02$). Thus, the recipient's perception of bad liars' dishonest demeanor is negatively diagnostic and reduces detection accuracy, in support of H3.

Choice of Channel

We hypothesized (H5) good liars would choose to communicate more face-to-face when engaging in deception than bad liars. A Chi-Squared test found no difference between good and bad liars in amount they chose to communicate face-to-face when telling the truth, $\chi^2 (df = 1) = 0.63$, $\phi = 0.12$, $p = 0.43$. However, deceptive omission was communicated more face-to-face for good than bad liars, $\chi^2 (df = 1) = 4.85$, $\phi = 0.32$, $p = 0.03$. Good liars did not communicate more through face-to-face than bad liars for fabrications, $\chi^2 (df = 1) = 2.78$, $\phi = -0.37$, $p = 0.10$. H5 was supported for deception omission but not for fabrications (see Table 1).

We tested if offer type differed by channel chosen, $\chi^2(df = 2) = 18.41$, $\phi = 0.41$, $p < 0.001$. In support of H4, allocators were more likely to communicate face-to-face when telling a truth (see Table 1). Using the measure of recipient suspicion, recipients were more suspicious when the allocator communicated through text chat ($M = 2.66$, $SD = 1.33$) than face-to-face ($M = 2.03$, $SD = 1.33$), $F(107) = 6.01$, $\eta^2 = 0.05$, $p = 0.02$.

Emotions

To test if self-perceived bad liars felt more guilt and anxiety, type of liar and offer type predicted the measure of anxiety and guilt. The binary logistic regression was significant ($R^2 = 0.07$, $F [2, 107] = 4.27$, $p = 0.02$) with both predictors of offer type ($\beta = -0.21$, $t[109] = -2.20$, $p = 0.03$) and liar type ($\beta = -0.20$, $t[109] = -2.16$, $p = 0.04$) as significant predictors. Good liars ($M = 1.31$, $SD = 0.36$) felt less anxiety and guilt than bad liars ($M = 1.46$, $SD = 0.49$) and allocators had the least guilt and anxiety for truths ($truth = 1.28$, $SD = 0.33$; $omission = 1.54$, $SD = 0.52$; $fabrication = 1.47$, $SD = 0.53$). This supports H6. Allocator guilt and anxiety did not correlate with the recipient perception of allocator honest demeanor ($r = 0.08$, $p = 0.42$), dishonest demeanor ($r = 0.07$, $p = 0.46$), or recipient measure of suspicion ($r = 0.16$, $p = 0.09$).

Detection of Deception by Channel of Communication

Although not hypothesized, we tested if deceptive offers were more easily detected online or face-to-face. Using a binary logistic regression, channel of communication and offer type predicted correct detection. The model, including the interaction, was significant $\chi^2 (df = 3) = 35.90$, $p < 0.001$. Offer type was a significant predictor ($\beta = 1.19$, $SE = 0.51$, $p = 0.02$). Rates of correct detection were higher for truths than fabrications and omission, $\chi^2 (df = 2) = 32.03$, $\phi = 0.55$, $p < 0.0001$. The interaction between offer type and channel of communication failed to reach significance ($\beta = 1.25$, $SE = 0.80$, $p = 0.12$).

To understand the nonsignificant interaction we tested whether truths were more easily detected face-to-face (91% correct detection) or through text chat (75%), $\chi^2 (df = 1) = 1.62$, $\phi = 0.20$, $p = .020$; whether deceptive omission was more easily detected face-to-face (36%) or through text chat (46%) $\chi^2(df = 1) = 0.43$, $\phi = 0.10$,

$p = 0.52$; and whether fabrications was more easily detected face-to-face (17%) or through text chat (21%), $\chi^2(df = 1) = 0.06$, $\phi = -0.06$, $p = 0.81$. Therefore, there were no differences in detection between face-to-face or text chat.

Recipients correctly detected 37 (88%) of 42 truths. One recipient did not fill out the questionnaire, so it could not be determined if they correctly detected a truth. Given the base rate of truths in the sample was 39%, this rate of detection was, in a one sample t -test with the reference number as the base rate, significantly above the base rate, $t(41) = 9.71$, $p < 0.0001$. Recipients correctly detected 4 (20%) of the 20 fabrications. The base rate of fabrications in the sample was 18%. Recipients correctly detected 19 (41%) of the 46 deceptive omissions. The base rate of deceptive omission was 43%. There was not a truth bias in all interactions, just truthful interactions.

Discussion

This study used a task with real motivated deception and communication between sender and receiver, and building off research on sender credibility (Bond & DePaulo, 2008; Levine, 2016) and channel choice (Van Swol & Braun, 2014a; Van Swol et al., 2015), we examined how demeanor is related to participants' self-perception of deception ability and how senders' self-perceptions of their ability to deceive affects their decision of channel choice in a deceptive interaction. To summarize, self-perceived good liars were more transparent when they told a truth; when telling a truth, good liars were perceived to have a more honest demeanor than when they used deception, and their truths were correctly detected more than bad liars' truths. Self-perceived bad liars reported they felt more anxious and guilty, although their overall demeanor was not judged by recipients to be more dishonest than good liars. Further, bad liars avoided face-to-face communication when deceiving by omission more than good liars did. Supporting the negativity effect, recipients' perception of dishonest demeanor was especially non-diagnostic towards correct detection for bad liars. In support of Information Manipulation Theory 2, there was more deception by omission than fabrication. Finally, allocators used text chat more to communicate deception and face-to-face more to communicate truths, replicating past research. We discuss these results in detail in the following.

Detection and Demeanor

We hypothesized recipients would perceive that bad liars had a more dishonest demeanor than good liars, both when deceiving and telling the truth. This would lead recipients to less accurately detect truths and more accurately detect deception of bad liars. However, we found recipients did not report any overall differences in the demeanor of good and bad liars, although bad liars did report feeling more guilt and anxiety. Yet, bad liars were less likely to have truths accurately detected than good liars. Given that demeanor does not differ between bad and good liars, the question remains why bad liars appear more dishonest and good liars more honest when telling truths. Rather than good liars appearing to have a more overall honest demeanor, people who perceived themselves as good liars actually were more

transparent truth tellers. Good liars had a more honest demeanor when they told the truth, but their perceived demeanor across all types of offers was not more honest than self-perceived bad liars.

One explanation for why good liars appeared more honest when they told the truth than deceived, whereas bad liars did not, is bad liars did engage in more behaviors that may be seen as suspicious when telling a truth. Of the four truthful allocators that failed to tell the recipient the allocation amount when giving half or more of the allocation amount, three of them were bad liars. Further, of the 16 allocators that truthfully told the allocation amount only after being asked by the recipient, 11 of these were bad liars. For the dichotomous measure used to determine correct detection, zero recipients perceived an allocator who told the true allocation amount without being asked as deceptive. Yet, 25% of recipients perceived an allocator as deceptive who gave more than half the money but failed to tell an allocation amount, and 25% of recipients perceived an allocator as deceptive who told the true allocation amount only after being asked. It may be less about demeanor and more about their lack of forthright answers that made bad liars appear more deceptive when telling a truth. Bad liars may have been less forthright because they felt more anxiety and guilt when their behavior could be judged for deception.

Although self-perceived bad liars felt more guilt and anxiety, they did not have a more dishonest demeanor than good liars. We had reasoned that people who have a dishonest demeanor would have a history of being suspected of deception more often and more salient memories of people accusing them of deception, resulting in someone with a dishonest demeanor to conclude they were bad liars. However, our expectation that bad liars were determining their deceptive ability from past accusations may have been flawed. Previous research suggests that it is undesirable to accuse another of deception and lying (Bond & Fahey, 1987), even when communicating online (Marett & George, 2013). In fact, people report anxiety about accusing others of deception (Vrij, Mann, & Fisher, 2006). Also, people often give suspicious behavior the benefit of the doubt and may search for alternative explanations besides deception (Stiff, Kim, & Ramesh, 1992; Vrij, 2000). Further, most people approach interactions with a truth bias (Levine, 2014) and may not recognize deceptive behavior or a dishonest demeanor. We examined how many times that recipients actually asked the allocator whether they were lying to them, and it only occurred once. This supports the idea that actual accusations of deception are infrequent. Therefore, this calls into question our assumption that people's perception of their deceptive ability would be based on demeanor and past accusations of deception.

Instead, based on our results, whether one perceives oneself as a bad liar may be based more on internal emotions of guilt and anxiety that may make the negative outcomes of deception more salient, and these emotions have little relationship to one's actual perceived demeanor. People who feel more guilt and anxiety may assume that deception is a risky business at which they are unlikely to succeed and assume they are bad liars. Certainly, people with more anxiety worry more about and focus on the negative outcomes of events (Maner et al., 2007). Thus, demeanor

was not driving our differences in bad and good liars, rather guilty and anxiety may be driving the differences.

Another possibility is that our measure of honest and dishonest demeanor (Levine et al., 2011) may not have tapped into what people used to classify someone as credible. Bond and DePaulo (2008) noted that people may be perceived as honest and credible from an early age based on facial structure. Those gifted with honest faces receive social reinforcement when they lie by avoiding punishment and may conclude that they are gifted liars, and this perception is likely to be amplified over years of feedback. Possibly people classify themselves as good or bad liars based on their facial structure (Haselhuhn & Wong, 2011; Maoz, 2012; Oosterhof & Todorov, 2008) and the resulting social feedback and not on the demeanor behaviors we measured. This would explain why we found no demeanor effects between good and bad liars, yet found hypothesized differences between good and bad liars on detection of truths and use of text chat for deceptive omission. Although Bond and DePaulo (2008) noted that people with honest faces would learn to be more deceptive, we found no differences between good and bad liars in this study for rates of deception. Future research should have independent judges rate senders' faces for perceived trustworthiness to assess whether facial structure is affecting whether one would classify themselves as a good or bad liar.

Finally, results do support truth default theory's proposition (Levine, 2014) that observation of sender demeanor does not increase detection accuracy. A dishonest demeanor increased recipient suspicion but had no relationship with detection accuracy. Further, dishonest demeanor was negatively diagnostic for bad liars. This can be explained by negativity bias, which suggests that people allocate more attention to negative information (e.g., maybe lack of forthrightness) and judge the negative information about a target as more diagnostic about an individual's character (e.g., deceptiveness/honesty) than positive information (Fiske, 1980). Levin, Wall, Dolezal, and Norman (1973) found novelty as one account for this greater impact of negative information on dispositional attribution; that is, since people usually do not expect to observe negative traits of another person (truth bias), when these traits are found, they carry greater weight. Given that people normally expect that others are telling the truth, if they observe suspicious behavior of another person, they would allocate more weight to the information.

Channel Choice

People are more likely to communicate face-to-face when being truthful than deceptive, possibly due to reduced face concerns when communicating a truth than a deception (Van Swol & Braun, 2014a; Van Swol et al., 2015). We replicated this effect for all allocators. However, we expected that for deception, the preference of text chat would be greater for bad liars given that they might have heightened anxiety and face concerns about detection. Bad liars did use text chat more than good liars for deception omission, but there were no differences for fabrications. Bad liars seemed to make strategic decisions about how to communicate their deceptive

omissions. Although the decision to omit deceptively may not have always been made ahead of the interaction (Buller & Burgoon, 1996; McCornack et al., 2014) and depended on whether the recipient asked about the allocation amount, anxiety and guilt may have driven the bad liars to avoid any potential face-to-face confrontations by using text chat for deception omission.

Contrary to H5, that bad liars would use text chat for deception more than good liars, there was no significant difference between bad liars and good liars for media choice and fabrications. In fact, the trend was in the opposite direction than hypothesized. Most fabrications (17 out of 20) occurred after the recipient asked the allocator about the allocation amount. Possibly, the greater amount, although not significant, of good liars using text chat to lie with fabrications and significantly more bad liars using text chat for deceptive omission is driven by how bad liars and good liars react to questions in text chat. Allocators may not necessarily have decided if they would use a fabrication before going into the interaction (McCornack et al., 2014). Good liars may be more likely to respond to the question about the allocation amount in text chat with a fabrication, but bad liars may continue to equivocate and use omission.

Truths and Detection

Truth default theory puts truth at the forefront of theoretical reasoning (Levine, 2014), and our results support this emphasis on truth. First, truths were detected significantly more than deception and significantly above the base rate at which they occurred. Past research has found that detection accuracy tends to be higher for truthful messages and that as the proportion of messages that are truthful increases, so does detection accuracy (Levine et al., 2006; Levine, Park, & McCornack, 1999). According to the veracity effect (Levine et al., 1999), accuracy of classifying a message is higher for truths than deception due to the truth bias or the presumption of truth in most interactions. If people presume that most interactions are truthful, this should increase accuracy for truths but also decrease accuracy for deception. Examination of rates of correct detection in comparison to base rates of truth and base rates of deception suggests higher detection of truths in this study is not being driven by the truth bias because truths did not have the highest base rate in this experiment (deceptive omission did). Therefore, we do not think the veracity effect is driving our results of higher detection of truths. There was not a truth bias in all interactions, just truthful interactions.

Future Research, Limitations, and Conclusion

The study had several limitations. First, an artificial lab scenario selected for its ability to isolate specific variables rather than for its similarities to naturally occurring situations was used. Thus, we were unable to distinguish between very good and very bad liars. Rather, subjects differed slightly in their perception of deceptive ability. Second, we did not measure frequency of lying between participants who perceived themselves as good or bad liars. There certainly are people who do not lie (Serota et al., 2010), and the good/bad liar measure may be more reliable for people who engage in more deception. Third, given that we did not manipulate honest and dishonest demeanor, demeanor and transparency

are confounded in the study (Levine, 2016). Fourth, we used a dichotomous measure of good and bad liars. Therefore, any cut off points were arbitrary. Finally, as mentioned previously, something other than demeanor is likely driving why people are classifying themselves as good or bad liars because we found no differences between good and bad liars on demeanor. Future research will have to test other factors like facial structure.

In conclusion, based on the results of this study, we can offer two pieces of advice to negotiators. First, if at all possible, *communicate face-to-face*, whether you intend to deceive or not. People are less suspicious of face-to-face communication, and we found no evidence that deception is more easily detected face-to-face. If you choose to not communicate face-to-face when you easily could, the other party is especially likely to get suspicious, and based on the fact that our participants were more likely to communicate through text chat when they deceived, this suspicion is well-founded. Second, *be forthright*. State your offer and the information you want to present without having the other party have to get it from you through questioning.

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