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Exploring liars' strategies for creating deceptive reports

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Purpose. Most past research on detecting deception has relied on the assumption that liars often fabricate a story to account for their whereabouts, whereas truth tellers simply recall an autobiographical memory. However, little research has examined whether liars, when free to choose the topic of their own reports, will actually choose to fabricate information rather than use a different strategy for constructing their lies. We describe two studies that evaluated liars' strategies for selecting the content of their lies when given the freedom to choose whatever content they desired.

Method. In Studies 1 ($N = 35$) and 2 ($N = 22$) participants (a) described a truthful story in order to identify a salient event, then (b) lied about the event, and finally (c) described their strategies for choosing the content of the reported lies.

Results. Liars overwhelmingly chose to report a previously experienced event for the time period they were to be deceptive about (67% and 86% in Studies 1 and 2, respectively). The majority of discrete details reported were experienced, occurred relatively frequently, occurred relatively recently, and were typical or routine.

Conclusions. These findings have significant implications for the development of cognitive-based interventions for detecting deception. In particular, some methods of deception that rely on content analysis may be ineffective if liars choose to report previous experiences rather than outright fabrications.

Much ado has been made recently regarding cognitive approaches to detecting deception, and the attention seems warranted (e.g., Hartwig, Granhag, Stromwall, & Doering, 2010; Vrij, Fisher, Mann, & Leal, 2010; Vrij *et al.*, 2009). Laboratory studies have demonstrated a wide range of contexts in which various cognitive methods have been successful at enhancing efforts to detect deception (for a review see Vrij *et al.*, 2010). The success of many cognitive methods, however, relies on some basic assumptions. For example, all cognitive methods rely (reasonably) on the assumption that liars and truth tellers engage in different cognitive processes at some point during their efforts to convince investigators of their innocence. Some methods rely on the assumption that

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liars, to a greater extent than truth tellers, prepare stories prior to being interviewed; hence, asking unanticipated questions during interview may reveal deceit (e.g., Vrij *et al.*, 2009). Other methods rely on the assumption that liars and truth tellers manage differently what and how they report; hence, differences in information management strategies may reveal deceit (e.g., Hartwig *et al.*, 2010). Others yet rely on the assumption that liars report more outright fabrications than do truth tellers; hence, differences in the semantic content of reports may reveal deceit. For example, criteria-based content analysis (CBCA; Steller & Kohnken, 1989) and reality monitoring (RM; Johnson & Raye, 1981) both rely at least to some extent on liars' reports containing fewer sensory, contextual, and affective details than truth tellers' reports (for reviews see Masip, Sporer, Garrido, & Herrero, 2005; Ruby & Brigham, 1997; and Vrij, 2005). When the previously mentioned assumptions are met in the lab, the associated cognitive methods (e.g., reporting in reverse order) enhance detecting deception (Vrij *et al.*, 2008; Vrij *et al.*, 2010). However, if real-world liars do not behave consistently with those assumptions those methods may fail.

Whereas experimental liars often report about the events that they experienced in the lab, real-world liars are not necessarily constrained to reporting any particular event. In the lab, experimental liars are often coached on what to lie about (for experimental purity), so those liars often report involvement in some experimental scenario derived by the experimenter (e.g., Caso, Maricchiolo, Bonaiuto, Vrij, & Mann, 2006; Granhag & Stromwall, 2002; Granhag, Stromwall, & Jonsson, 2003; Leins, Fisher, Vrij, Leal, & Mann, 2011). By contrast, real-world liars typically are not coached on what to lie about. They may report anything that seems credible. That proposition, however, begs the question: What do liars, when unconstrained by laboratory protocols, choose to include in their reports? Specifically, when they must lie about their whereabouts or transgressions, from where do liars draw the details that they report? One step towards answering those questions might be to allow experimental liars to report unconstrained.

In fact, several studies have allowed liars to report without much instruction regarding what to say (e.g., Hartwig, Granhag, & Stromwall, 2007; Hartwig *et al.*, 2010; Hartwig, Granhag, Stromwall, & Kronkvist, 2006; and, Hines *et al.*, 2010). Those studies revealed important features of liars' presentation strategies; however, they did not address how liars choose the topics of their reports. Indeed, in many deception detection studies, liars' strategies for choosing the details they reported have not been explored. Hence, a gap in our understanding of liars' strategies remains: When unconstrained, what will liars choose to report about? One possible answer is that they will report about past experiences, merely transplanting those experiences to account for their illegal or otherwise prohibited behaviour.

Liars may choose to report about past experiences (rather than fabricating stories outright) for at least one reason: it makes their job easier. Lying is generally thought to impose cognitive burden (Vrij, Fisher, Mann, & Leal, 2006). In order to reduce that burden, liars who are unconstrained by what they can report may elect to report events that are easy to remember and therefore easy to report. One type of event that may be easy for liars to remember is an event that they actually experienced (as opposed to an event that was imagined or otherwise fabricated). If real-world liars indeed report experienced events rather than outright fabrications, then some tools for detecting deception may not be as effective in the field as they are in the lab. In fact, at least one study found that when liars reported experiences rather than outright fabrications, one tool for detecting deception (RM) became less effective (Gnisci, Caso, & Vrij, 2010).

In Gnisci *et al.* (2010), participants reported once truthfully and once deceptively, and then indicated whether any of the objects or situations they reported had been previously experienced. Half of their participants (80/158) indicated reporting from previous experience. This distinction was made in order to test the effect of liars reporting previous experiences on RM scores. Indeed, a difference was found between RM scores for liars who fabricated and liars who reported previous experience: liars who fabricated were more likely to differ from truth tellers based on RM scores than were liars who reported previous experience. In other words, the utility of RM decreased when liars reported previous experience. If other tools for detecting deception will be compromised when liars report on previous experiences, then understanding how often liars choose that strategy is critical. Thus, in order to begin filling the gap in what we know about how liars choose the content of their lies, we examined here liars' self-reported strategies for selecting the topics and the details of their lies.

STUDY 1

Method

Participants

Undergraduate students ($N = 36$) were recruited from a public university in the southeastern United States and participated for course credit. Participants were recruited in person from undergraduate psychology classes. Twenty-three (64% of) participants were female. Participants' mean age was approximately 22 years.

Procedure

Preliminary task (audio–video recorded)

Participants were told by the experimenter that they would be interviewed multiple times and that the purpose was to test interrogators' ability to detect deception. Participants then gave a truthful account of their activities from the previous Saturday. After providing that account, they were told that (a) there were two experimental conditions (truth telling and lying), (b) they would be in the lying condition, and (c) subsequent interviewers would be blind to their condition. They were then told that during the next interview, they would be asked to report again about their activities from the previous Saturday, and, because they were in the lying condition, they would have to lie about a particular segment of that Saturday. In order to identify the segment that was to be lied about, the experimenter (a) asked for the times for each event reported, and (b) selected one event from the participant's report and identified it as an event that should be considered criminal in nature, not to be reported in the following interview. Critical events were selected according to two criteria: (a) the event lasted at least 1 hr, and (b) the event had a discernable beginning and end. For example, if the identified event was, 'I went fishing between 6:00 pm and 8:00 pm', then the participant was told that he/she could report during the interview *anything othe*r than having gone fishing between 6:00 and 8:00 p.m. Participants were told that they could construct their lies in any manner, as long as the lie accounted for the identified time period. To prevent participants from simply omitting the critical time period from their lies, they were told that the interrogator would know the time period during which the 'criminal activity'

occurred; however, the interviewer would not know details of the particular 'criminal activity'.

In order to convey the perceived consequences for being caught (i.e., the participant was suspected to be a liar), participants were told that they should be convincing when lying because if caught lying, they would have to endure another interview with a 'trained interrogator', and if they failed to be convincing again, they would have to write a tedious essay. However, if participants lied successfully to the first interviewer, their participation in the experiment would conclude and they would receive an additional point of extra credit. These procedures were included in order to enhance the ecological validity of the paradigm through providing explicit rewards for being convincing (i.e., experiment termination and extra credit) and consequences for being caught in the lie (i.e., secondary interrogation and subsequent essay writing). Participants were then given 3 min alone to prepare their lies.

Interview (audio–video recorded)

The interviewer entered the interview room and reminded participants of the consequences for being caught lying. Participants were then asked what they did on the most recent Saturday. After reporting their story, they were asked to give more details for the event occupying the critical time period (e.g., 'You said you were at dinner with friends between 6:00–8:00 pm; can you tell more about that?'). Participants were then given an opportunity to report anything else that they recalled. The interviewer then indicated that the interview was over and that the experimenter would return to give further instructions.

Strategy reporting (audio recorded)

When the experimenter returned, he/she told participants that they had been misled and that the goal of the study was to identify liars' constructive strategies. The experimenter also informed participants that they would not have to endure any further interrogation or write a tedious essay. Participants were then told to be truthful for the remainder of the experiment. They were asked the open-ended question: 'Can you tell me the general strategy for constructing your lie? That is, what were you thinking during the time between when you learned you had to lie and when the interviewer came in?' Participants then reviewed with the experimenter the video of the previous interview. The playback was paused each time a lie was identified by the participant or the experimenter (on the basis of notes from the preliminary task). For each lie, participants reported (a) what made them think of the reported detail and (b) if they had ever experienced that detail previously. For previously experienced details, participants reported (a) the frequency of the experience, (b) how recently they experienced it, and (c) if they experienced it exactly as reported. For details not experienced previously, participants reported (a) whether they had fabricated the detail and (b) whether someone they knew had experienced it. After reviewing the playback of the recorded interview, participants reported whether (a) they omitted or withheld from the interview any prepared statements and (b) they reported any details that they had not prepared before the interview. Participants then completed a debriefing questionnaire, which assessed their beliefs about the purpose of the study and their motivations while participating. Specifically, participants reported on a Likert-type scale (1 [completely disagree] – 7 [completely agree]) the extent to which they agreed with the following statements: 'I

believed that the study was about interviewers' ability to detect lies'; 'I was motivated to convince the interviewer that I was telling the truth'; 'I believed that I might have to be interrogated again if I was not convincing the first time'; and 'I believed that I might have to write an essay if I was not convincing the second time'.

Scoring

Coding

General strategies were reported in response to open-ended questions; thus, those strategies were transcribed and coded into general categories. The coding categories were data driven (i.e., they were not predetermined). All strategies fell into one of eight derived categories: report a previously experienced event, report a plausible story, keep it simple, report what people normally do, report something as close to the truth as possible, report something that fit the critical time frame, report a very detailed story, and, omit critical details.

Scores for frequency, recency, and typicality of previously experienced details were coded using predetermined categories. Frequency data were coded as (a) occurring at least once per week, (b) occurring less than once per week, but more than once per month, or (c) occurring less than once per month. Recency data were coded as (a) occurred within 1 week of the interview, (b) occurred more than 1 week, but less than 1 month, before the interview, or (c) occurred more than 1 month before the interview. Typicality data were coded as (a) occurs typically or (b) does not occur typically.

Inter-rater reliability

Two scorers blind to the study goals coded all of the data. Inter-rater reliability was good, $\kappa = .781$. Discrepancies in coding were identified and resolved between the two scorers.

Results

Checks of experimental realism

Participants reported believing that they thought the experiment was about the interviewer's ability to detect deception ($M = 5.91$, $SD = 1.15$; 1 = completely disagree, 7 = completely agree). Participants reported that they were motivated to convince the interrogator that they were telling the truth ($M = 6.26$, $SD = 1.18$). Participants also reported that they believed that they would have to endure another interrogation ($M = 5.48$, $SD = 1.97$) and write a tedious essay ($M = 5.29$, $SD = 1.27$) if they were disbelieved by the interrogator.

Exploratory analysis

We were interested in descriptive details of the general strategies that liars used to construct their lies, as well as descriptions of the discrete lies themselves. Specifically, we were interested in the liars' overall report strategies, whether they had experienced the events they reported, how frequently they experienced the events reported, how recently they had experienced the events reported, and how typical were the events reported. Because many of the general strategies categories were populated each by

Table 1. Reported characteristics of lies by percentage

Overall report strategy ($N_{liars} = 33$)	
Report an event previously experienced[a]	67%
Report a plausible story	33%
Other (e.g., keep it simple or 'approach the truth')	33%
Event details experienced versus not experienced ($N_{details} = 111$)	
Previously experienced	86%
Not previously experienced	14%
Frequency of experienced details ($N_{details} = 42$[b])	
Occurs at least once per week	64%
Occurs less than once per week but more than once per month	12%
Occurs less than once per month	24%
Recency of experienced details ($N_{details} = 46$[b])	
Occurred within 1 week of interview	78%
Occurred more than 1 week but less than 1 month ago	09%
Occurred more than 1 month ago	13%
Typicality of experienced details ($N_{details} = 56$[b])	
Occurs typically	73%
Does not occur typically	27%

[a]This strategy was reported in conjunction with another strategy in 24% of cases. Multiple strategies were reported in 36% of all cases.
[b]Different *N* values resulted from data missing as a result of reporting/recording issues with two participants.

fewer than four respondents, those data were collapsed into one category labelled 'other'. Three categories emerged: report a previous experience, report a plausible story, and other (which encompassed all respondents who indicated reporting some strategy other than report a previous experience or report a plausible story). A related-samples Cochran's Q test revealed that, overwhelmingly, liars' most frequently used strategy was to report an event that they experienced previously (67% of respondents), χ^2 (2, N = 33) = 7.56, p = .023. 'Report a previous experience' was selected more often than was 'report a plausible story' (33% of respondents), χ^2 (1, N = 33) = 4.35, p = .037, *Cramer's V* = .318; and, 'report a previous experience' was selected more often than were various other strategies (in total 33% of respondents), χ^2 (1, N = 33) = 4.00, p = .045, *Cramer's V* = .455.

In addition to reporting general topics that were experienced previously, liars indicated that the majority of details they chose to include in their deceptive reports were experienced previously versus never experienced, χ^2 (1, N = 111) = 30.77, p < .001, *Cramer's V* = .38. A subset of details, reported by participants whose general strategy was to report a previous experience, was analysed for how frequently they occurred, how recently they occurred, and how typical (or routine) they were. Overwhelmingly, participants indicated that those events most often occurred frequently (at least once per week), χ^2 (2, N = 42) = 9.05, p < .01, *Cramer's V* = .33, occurred recently (within 1 week of the interview), χ^2 (2, N = 46) = 19.27, p < .001, *Cramer's V* = .46, and were typical or routine, χ^2 (1, N = 56) = 5.44, p = .020, *Cramer's V* = .24 (see Table 1).

The results from Study 1 indicate that the majority of liars chose to report previous experiences. However, perhaps liars were steered towards that strategy by the instructions they received. Those liars were not told explicitly that the interviewer might be able to check the credibility of their stories. Therefore, liars may have been comfortable

simply substituting any previous day's experience for what they were told to lie about. That strategy would seem easy to implement with a high rate of success; after all, nobody would be checking the details of their stories. Perhaps if liars were aware that they could not simply report anything and successfully deceive the interviewer, they might select a different strategy for choosing the topic of their lies. Hence, Study 2 incorporated an instruction designed to heighten liars' awareness that the interviewer would be able to verify their statements.

STUDY 2

Method

Participants

Undergraduate students ($N = 22$) were recruited from the same institution, in the same manner, as in Study 1. Participants' mean age was approximately 21 years. Nineteen (86% of) participants were female. Thirty-six percent of participants identified themselves as Hispanic, 27% identified themselves as Caucasian, and 18% identified themselves as African American.

Procedure

The same general procedure from Study 1 was used with the following exceptions: When informed, in the preliminary task, of the consequences of being caught lying, participants were told to treat the subsequent interview as if it were real. That is, they were told that when preparing their stories, they should consider that the interviewer would likely have some resources to check the credibility of their story; therefore, they could not simply report anything and succeed at deceiving the interviewer. They were told, 'For example, if you reported that you were out with friends, the interviewer may ask to contact those friends to see if you were telling the truth. Or if you say you were at the baseball game, the interviewer can check the game schedule or weather records to see if there was in fact a game that day.' Moreover, participants were told that their best chance of avoiding any additional interrogation procedures was to be convincing and believable in the first interview. Finally, the consequence of writing an essay if disbelieved was removed, but the consequence of an additional interrogation remained. The remainder of the preliminary task and the interview procedures followed that of Study 1. The strategy-reporting procedure, however, was abridged in Study 2. Data were collected only for general reporting strategies (i.e., frequency, recency, and typicality data for specific details reported were not collected).

Scoring

Coding

The coding system employed in Study 1 was also used in Study 2. The three collapsed categories of general strategies from Study 1 (previous experience, plausible, and other) were used here; however, one infrequently used strategy from Study 1 was substantially populated here: report what people normally do. One of the coders who scored the data for Experiment 1 scored all of the data for Experiment 2. A subset (50%) of data was scored by a second blind coder. Reliability was good, $\kappa = .804$.

Results

Checks of experimental realism

Once again, participants reported that they were motivated to convince the interrogator that they were telling the truth ($M = 6.50$, $SD = 1.34$; 1 = completely disagree, 7 = completely agree). Participants also reported that they believed that they would have to endure another interrogation if they were disbelieved by the interrogator ($M = 5.55$, $SD = 2.02$).

Exploratory analysis

Again, we were interested in the general strategies that liars used to construct their lies. Specifically, we were interested to see if these liars, compared to the liars from Study 1, reported different overall report strategies when they were told explicitly that they could not simply report anything and that the interviewer could check on the credibility of their stories. Thus, we analysed here only general strategies. Once again, related-samples Cochran's Q test revealed differences in strategy selection, χ^2 (3, $N = 22$) = 22.39, $p <$ .001. Liars' most frequently used strategy was to report an event that they experienced previously (used by 86% of respondents), which was selected significantly more often than was (a) 'report a plausible story' (27% of respondents), χ^2 (1, $N = 22$) = 11.07, $p < .001$, *Cramer's* $V = .243$, (b) 'report what people normally do' (24% of respondents), χ^2 (1, $N = 22$) = 9.34, $p = .002$, *Cramer's* $V = .417$, and (c) various other strategies (32% of respondents), χ^2 (1, $N = 22$) = 8.64, $p < .003$, *Cramer's* $V = .013$.

Changing the method to reflect the real-world possibility that stories might be investigated for credibility did not seem to change report strategies drastically. Of course, the new strategy, 'report what people normally do', may have emerged as a result of the changed instructions. However, the overwhelming trend observed in Study 1 remained: Liars chose to report past experiences.

GENERAL DISCUSSION

The results from both studies indicate that, when given the freedom to choose the content of their reports, liars choose to report from actual experiences more often than choosing to fabricate their reports based on imagined events that were never experienced. Indeed, our liars seemingly did not fabricate reports using general or conceptual knowledge (e.g., schemas or guesswork), though a small percentage chose to report content representing what people normally do. Rather, our liars constructed reports using discrete event details retrieved from autobiographical memory. These results are similar to those of Gnisci *et al.* (2010), who also allowed liars to choose freely the details of their reports. Half of their liars reported details of previous experiences. By comparison, more than half (67% and 86%, respectively, in Studies 1 and 2) of our liars chose a strategy of reporting previous experiences, and 86% of the lies told in Study 1 involved discrete details from those previous experiences.

Knowing that liars may choose to report previous experiences rather than outright fabrications calls into question the validity of some methods for detecting deception. For example, detection methods that incorporate CBCA or RM, which rely to some extent on liars reporting from conceptual knowledge, may falter when liars, similarly to truth tellers, report about perceptually experienced events, events for which sensory, contextual, and affective details are available in memory. Indeed, Gnisci, *et al.* (2010)

found that RM was less effective at discriminating liars from truth tellers when liars reported from past experience versus when they fabricated their stories.

When liars report experiences in the same way that truth tellers report experiences, methods that rely on liars reporting from conceptual knowledge may have limited value. The outlook for other cognitive approaches may not be as gloomy, however. For example, if liars elect to replace incriminating details with non-incriminating details of other experiences, then at least one cognitive process is required: selecting appropriate replacement details (e.g., reporting being at the movies rather than being at the crime scene). Truth tellers, however, do not have to select replacement details. If selecting these non-incriminating details occurs before the interview, then methods that discern pre-interview discrepant cognitive processes may be valuable. In fact, some research has demonstrated that liars do plan their stories in advance (e.g., Granhag *et al.*, 2003), and additional research is currently exploring the differences between liars and truth tellers in perceptible, pre-interview cognitive effort, specifically, how much time suspects spend attending to irrelevant stimuli (e.g., reading cartoons) during a pre-interview preparation period (Cahill, Fisher, & Rowback, 2011).

Alternative detection methods may also be informed by the fact that liars who report previous experiences to account for a critical time period must ensure that those experiences fit logically and seamlessly within that time period. In that case, liars have to ensure that times and locations of mismatched events are compatible; for example, reporting that they were at the movie theatre, watching an 8:00 p.m. showing of a 2-hr movie, after already indicating that they were home by 9:30 p.m. is problematic. By contrast, truth tellers should not have to engage in that evaluative process. Therefore, an effective interview strategy may be to focus on the transition points between experiences that occurred at different times or on different days. Of course, liars may choose to transplant the events of an entire day to account for the day in question; in fact, a handful of our liars indicated using that sub-strategy. If that occurs, transition points may be seamless, but other details of the transplanted day may be too implausible to account for the day in question (e.g., the liar reports that he was eating at a particular restaurant that was closed on the day in question).

We did not include a truth-telling group in this exploratory analysis; therefore, we cannot compare constructive strategies of liars and truth tellers. However, we can safely assume that truth tellers' constructive strategies resemble memory retrieval strategies in many other non-interrogative contexts. That is, truth tellers should not engage in any unique strategy other than retrieving critical event details from memory and reporting those (Stromwall, Hartwig, and Granhag, 2006). That liars appear to engage in a similar constructive strategy (i.e., they also report from autobiographical memory) is telling and may contribute to the overall poor performance by observers in trying to distinguish between liars and truth tellers (e.g., see Aamodt & Custer, 2006; Bond & DePaulo, 2006; & Vrij, 2000).

The critical finding here is that when given free choice to report whatever they want, liars may look and sound a lot like truth tellers. That is, in an effort to successfully deceive their audience, liars may report lies that have an experiential basis. In conceiving future deception detection experiments, researchers should consider that in order to be useful to interviewers, new detection methods must be able to account for real-world deceptive strategies. In other words, similar to Hartwig *et al.* (2006, 2007, & 2010), and Hines *et al.* (2010), researchers should allow liars to use the kind of lie that they would normally use when given free choice of what to report. Perhaps that will help yield better solutions to real-world difficulties in detecting deception.

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