Legal and Criminological Psychology *Explore this journal >*

View issue TOC
Volume 19, Issue 2
September 2014
Pages 227–239

Original Article

Exploiting liars' verbal strategies by examining the verifiability of details

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First published:
24 October 2012 Full publication history

DOI:
10.1111/j.2044-8333.2012.02069.x View/save citation

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Abstract

Background

We examined the hypothesis that liars will report their activities strategically and will, if possible, avoid mentioning details that can be verified by the investigator.

Method

A total of 38 participants wrote a statement in which they told the truth or lied about their activities during a recent 30-minute period. Two coders counted the frequency of occurrence of details that can be verified and that cannot be verified.

Results

Liars, compared with truth tellers, included fewer details that can be verified and an equal number of details that cannot be verified in their statement, and the ratio between verifiable and unverifiable details was smaller in liars compared with truth tellers. High percentages of truth tellers and liars were classified correctly based on the frequency counting of verifiable details (79%) or the ratio between verifiable and unverifiable details (71%). Those percentages were higher than the percentage that could be classified correctly (63%) based on verifiable and unverifiable detail combined. We compared our verifiability approach with other theoretical approaches as to why differences in detail between truth tellers and liars emerge.

Background

Distinguishing truths from lies is a difficult task. Reviews of more than a hundred deception experiments have shown that nonverbal and verbal cues to deceit are typically faint and unreliable (DePaulo *et al*., **2003**; Vrij, **2008**). In addition, reviews of more than 150 lie detection experiments have revealed that observers who listen to someone's speech or observe someone's behaviour classify on average 54% of truth tellers and liars correctly, whereas 50% would be achieved by just tossing a coin (Bond & DePaulo, **2006**).

One explanation why cues to deceit are faint and unreliable is that liars cannot take their credibility for granted and therefore attempt to make an honest impression (DePaulo *et al*., **2003**; Granhag & Hartwig, **2008**; Kassin, Appleby, & Torkildson-Perillo, **2010**; Vrij, Mann, Leal, & Granhag, **2010**). That is, liars control their behaviour and speech and attempt to display behaviours and say things that they believe give an honest impression and avoid behaviours and speech that they believe raise suspicion (Vrij & Granhag, in press; Vrij, Granhag, & Porter, **2010**; Zuckerman, DePaulo, & Rosenthal, **1981**). When they succeed in their attempts, it blurs the behavioural and speech differences between liars and truth tellers, and, consequently, decreases the ability to distinguish between them.

Yet, awareness of liars' motivation to control their behaviour and speech may uncover the differences between liars and truth tellers and could benefit lie detection. For example, Ekman, Friesen, and O'Sullivan (**1988**) have demonstrated that liars smile to simulate experiencing positive feelings, but that these smiles differ from the smiles truth tellers display when they express genuine positive feelings. In addition, liars display masking smiles to conceal other emotions (ten Brinke & Porter, in press; ten Brinke, Porter, & Baker, in press). Similarly, awareness that liars attempt to control their speech may uncover speech-related cues to deceit. Liars may attempt to avoid saying things that they think will sound suspicious, yet, this avoidance may give the lie away. The verbal deception literature has already provided some examples of this. Testimonies of truth tellers are expected to be consistent (Stromwall, Granhag, & Jonsson, **2003**), and liars therefore attempt to provide a consistent story over time (Granhag & Stromwall, **1999**, **2002**). However, liars' attempts to be as consistent as truth tellers could backfire and could make them more consistent than truth tellers, as Granhag, Stromwall, and Jonsson (**2003**) found when examining consistency in pairs of liars and pairs of truth tellers. Presumably, in contrast to pairs of truth tellers, pairs of liars co-ordinated their testimonies more to avoid contradicting each other.

In the verbal veracity assessment method Criteria-Based Content Analysis (CBCA, Köhnken & Steller, 1988; Steller & Köhnken, 1989), it is also assumed that liars will be more concerned than truth tellers with impression management. Therefore, compared with truth tellers, liars are more keen to construct a report, which, they believe, will make a credible impression on others, and will leave out information, which, they think, will damage their image of being a sincere person (Köhnken, 1996). As a result, a truthful statement is more likely to contain information that is inconsistent with the stereotypes of truthfulness. The CBCA list includes five of these so-called 'contrary-to-truthfulness-stereotype' criteria (Ruby & Brigham, 1998): *Spontaneous corrections* (corrections made without prompting from the interviewer), *admitting lack of memory* (expressing concern that some parts of the statement might be incorrect: 'I think', 'Maybe', 'I am not sure', etc.), *raising doubts about one's own testimony* ('You know, this sounds so weird and he seemed such a nice man, I thought nobody would believe me'), *self-deprecation* (mentioning personally unfavourable, incriminating details), *and pardoning the perpetrator* (excusing the perpetrator or failing to blame him/her). In the present experiment, we examined a verbal cue that has never been examined before: The verifiability of details.

Liars' strategy: Avoid mentioning details that can be verified

Reality monitoring (RM) theory (Johnson & Raye, 1981) provides a theoretical rationale as to how truthful and deceptive speech may differ from each other. Originally, RM referred to assessing one's own memory by describing the process used for deciding whether a given piece of information emanates from an external (experienced) or an internal (imagined) source. Memory for experienced events is externally derived and originates from perceptual experience, whereas memory for imagined events is internally derived and originates from self-generated thoughts or imagination (Johnson, Foley, Suengas, & Raye, 1988; Johnson & Raye, 1981). Johnson and Raye (1981) suggested that memories for perceived events are characterized by spatial and temporal contextual details (e.g., where and when the event took place), sensory details (e.g., what he or she felt, smelt, or saw when the event took place), and semantic details (e.g., names of individuals or places). In contrast, memories for imagined events are characterized by cognitive operations, such as thoughts and reasons, which probably helped to generate these memories. Research has shown that people use these textual properties also to judge whether *somebody else's* memory (Interpersonal RM) is externally derived or internally derived (Johnson, 2006; Johnson, Bush, & Mitchell, 1998; Johnson & Suengas, 1989). According to the Interpersonal RM approach, listeners use content qualities to distinguish between truths and lies (Johnson, 2006), and, indeed, one of the verbal criteria observers say they rely most upon when detecting lies is 'richness in details' (Strömwall, Granhag, & Hartwig, 2004; Vrij, 2008; Vrij, Akehurst, & Knight, 2006). The richer an account is perceived to be in detail, the more likely it is to be believed (Bell & Loftus, 1989; Johnson, 2006; Johnson *et al*., 1988).

Liars may be aware that people will analyse their accounts in terms of richness in detail and therefore will try to provide additional details to make an honest impression (liars reported such a strategy in Nahari, Vrij, & Fisher, 2012). Yet, although providing details helps to generate an honest impression, it also puts liars at risk, because investigators may be able to verify some of these details, and often do so. Liars are known to be aware of this danger (see Masip & Ces, 2011; Nahari *et al*., 2012) and thus may be inclined to avoid mentioning details. This puts liars in a dilemma. On the one hand, they are motivated to include many details so that they make an honest impression, and, on the other hand, they are motivated to avoid providing details to minimize the chances of being caught.

A strategy that compromises between these two conflicting motivations is to provide details that cannot be verified. For example, it is much more difficult for the police to verify whether someone actually saw a black Audi driving by in a particular street than to verify whether someone actually made a phone call at a specific time. Therefore, when attempting to make an honest impression, liars may choose to provide details that are difficult to verify and may avoid providing details that are easy to verify. If so, lies can be detected by distinguishing between details that are difficult and details that are easy to verify. We thus hypothesized that:

Hypothesis 1 : Truth tellers will provide more perceptual, spatial, and temporal details that can be verified and liars will provide more perceptual, spatial, and temporal details that cannot be verified.

Hypothesis 2 : The ratio between the number of verifiable and unverifiable details should be higher for truth tellers than for liars.

Hypothesis 3 : Following on from Hypothesis 1, we predict that more true and false statements will be classified correctly when only verifiable details are considered rather than when details in total (sum of verifiable and non-verifiable details) are considered.

Hypothesis 4 : Following on from Hypothesis 2, we predict that the ratio between the number of verifiable and unverifiable details can be used to classify truth tellers and liars.

Method

Participants

A total of 38 Bar-Ilan University undergraduate students (33 females and five males) participated in the experiment for course credits. Their mean age was 24.74 (*SD* = 4.43 years).

Procedure

Participants arrived at the laboratory individually and at a predetermined time. They were told that the experiment dealt with examining the efficiency of specific tools to detect lies. All participants signed a consent form indicating that participation was voluntary and that they could withdraw from the experiment at any time without penalty. The experimenter then read aloud the instructions, which were similar to the instructions used by Nahari *et al* . (2012): 'You are requested to do your normal business for 30 minutes. Make sure that you carry out more than one activity and do not stay at one place for more than 10 minutes. Please carry out as many activities as you can, such as buying coffee, having a conversation with a friend, visiting the book shop, etc. Please do not do anything that you may later be unable or uncomfortable to talk about. Please return in exactly 30 minutes (the experimenter indicated the exact time) to the lab for the second stage of the study.'

After the participant returned to the laboratory, the experimenter said: 'In the last 30 minutes, a wallet was stolen from one of the offices in the Criminology Department, and you are one of the suspects in this theft. I am going to ask you to handwrite a statement about what you were doing during the last

30 minutes. Your statement will be passed on to the police officer who is responsible to investigate this theft'. In fact, all participants were innocent and none of them was asked to steal a wallet. The cover story about stealing was provided to put the experiment in a context in which writing a statement and a potential investigation seems relevant. The experimenter then gave the following instruction about writing the statement: 'While giving your statement try to be as convincing as possible. Please write down in as much detail as possible what you were doing during the 30 minutes that you were out, so the investigator will get a good idea about what happened in this period of time. Start your statement from the time you left the lab and end it at the time you re-entered the lab. Make sure that you mention all details, all activities, all people you met, all conversations that took place, etc. Give as much information as you can, including information that seems irrelevant. While writing your statement, you may explain or add details as much as you want, but do not cross out anything that you have already written. The police officer in charge of investigating this theft will read your statement. If you do not convince him that you are innocent, you will be invited to a face-to-face interrogation within a few days'. The instruction to interviewees (both suspects and witnesses) to tell in their own words in as much detail as possible what has happened is typically recommended in the police literature (Bull, **2010**; Fisher, **2010**; Kassin *et al*., **2010**; Sapir, **1987/2000**).

Subsequently, the experimenter gave the participant a closed envelope and asked him/her to read the instructions inside before writing the statement. At this point, the participant was left alone, opened the envelope, read the additional instructions, and wrote the statement. The envelope contained different instructions for truth tellers and liars. The instructions for truth tellers (N = 22) were as follows: 'Please provide a completely truthful statement about all the activities you did during the last 30 minutes.' Liars received the following instructions (N = 16[1]): 'Please provide a completely false statement about all the activities you did during the last 30 minutes. That is, avoid reporting any of your activities, and give a complete false report by making up acts that you did not do in this period of time'. The instruction also reminded truth tellers and liars that their task was to be convincing so that the police officer would believe that they were innocent.

After the participants wrote their statements (we estimate that this took them on average 10–15 minutes), the experimenter came back into the room, and asked the participants to complete a post-interview questionnaire. The participants were asked to rate on 7-point scales ([1] – not at all to [7] – completely) to what extent they: (1) were motivated to appear convincing in their statements; (2) found it difficult to appear convincing in their statements; (3) thought they were convincing in their statements; and (4) were concerned to be interviewed by a police officer about what actually had occurred. In addition, the participants reported whether they (5) gave any truthful details in their statements; (6) any false details in their statements, and (7) concealed any details in their statements. Finally, they were asked to indicate what percentage of their statements they thought was truthful. Before filling out the post-interview questionnaire, the experimenter told the participants that the experiment had ended, that their answers would not influence how their statement would be assessed, and that they should answer the questions truthfully. Upon completing the questionnaire, all participants were debriefed and given their course credits, and nobody was requested to return for an interrogation by the police officer.

Coding of the statements with RM criteria

All statements were coded by two independent coders (blind to the veracity condition) who assessed the presence of three RM criteria (Sporer, **2004**): Perceptual information (information about what the examinee felt, smelt, heard, or saw when the event took place); spatial information (information about locations or the spatial arrangement of people and/or objects); and temporal information (information about when the event happened or an explicit description of a sequence of events). There are five additional RM criteria: Realism (to what extent is the statement realistic and makes sense?), clarity (to what extent is the statement clear and vivid?), reconstructability (to what extent can the described event be reconstructed with the information given?), emotions (emotions described in the statement), and cognitive operations (thoughts and reasoning). These five criteria, however, could not be analysed in terms of verification, which is the main purpose of the present experiment. That is, realism, clarity, and reconstructability refer to an entire statement rather than to specific details in a statement. In addition, by definition, cognitive operations and emotions cannot be verified. These five criteria were not included, and we used only the three RM criteria perceptual, spatial, and temporal information. Examples of perceptual details are smoking a cigarette, drinking, eating, speaking on the phone, describing people or objects, and reading a book; spatial information included indications of location (library, class, cafeteria, elevator, etc.), and locations in space ('I was the third in the queue'); temporal information included mentioning of exact times ('It was 8:05 in the morning'), duration of an activity ('It took me 10 minutes') and order of activities ('I started to do homework after I finished talking with my father').

The coders received written information about the three criteria (definitions and examples). The trainer (author GN) went over each criterion, and explained the definitions and gave examples. She answered all questions about each criterion, and checked that the coders understood each criterion. This training took 2.5 hours. The coders carried out their coding individually at their homes. They took with them the written explanations and were asked to read them again before and during the coding. The coders marked all perceptual, spatial, and temporal details in the text, and counted the frequency of occurrence of these details. For example, the sentence 'In front of me queued a man wearing a hat' contains two perceptual details ('man' and 'wearing a hat') and one spatial detail ('in front of me').

Inter-rater reliabilities between the two coders for each of the three criteria were measured via intra-class correlation coefficients (ICC). The ICC's for the three criteria were satisfactory: Perceptual information: ICC = .78, $p < .001$; spatial information: ICC = .77, $p < .001$; and temporal information: ICC = .78, $p < .001$. All disagreements between the two coders were relegated to a third trained coder who made the final decision regarding the presence of the criterion.

Coding the verifiability of the statements

The same two independent coders were asked to mark on the statements all the perceptual, spatial, and temporal details that potentially could be verified, that is, activities that were (1) documented and therefore checkable, or (2) carried out together with (an)other identified person(s) (rather than alone or with a stranger who could not easily be traced), or (3) witnessed by (an)other identified person(s). Coders agreed on the verifiability of 87.95% of the details. For example, they counted as verifiable details encounters or conversions with identified people; presence at places with closed-circuit television; and documented activities such as withdrawal of funds, phone calls, sending text messages or emails, and using credit cards. Unverifiable details were activities such as reading a book outside on

the bench, drinking coffee, or having a cigarette alone, asking a stranger for directions, or using the stairs. All disagreements between the two coders were relegated to a third coder who made the final decision regarding the verifiability of the details. The third coder was blind to the veracity status of the statements. Based on the number of verifiable details and total details in each statement, the number of unverifiable details was calculated (total details – verifiable details). In this way, the perceptual, spatial, and temporal details in each statement that were identified in the earlier RM coding were now divided into perceptual, spatial, and temporal details that can or cannot be verified.

We then calculated three total scores: (1) the summation of all perceptual, spatial, and temporal details that can be verified; (2) the summation of all perceptual, spatial, and temporal details that cannot be verified; and (3) the summation of all perceptual, spatial, and temporal details in the entire statement (verified and not verified combined). We used these total scores in all our analyses.

Results

Manipulation check

Significant differences[2] emerged regarding the percentages of truthful details the participants said they reported in the statements, $t(15) = 13.04$, $p < .001$. Truth tellers reported more truthful details ($M = 99.91$, $SD = 0.29$) than liars ($M = 19.94$, $SD = 24.54$). This indicates that the participants followed the experimenter's instructions.

All truth tellers mentioned that they provided truthful details and none of them mentioned that they provided false details or concealed information. All liars mentioned that they provided false details and concealed information. Fifty percent ($N = 8$) of liars said that they did not provide any true details, and most liars who said that they provided true details only did this occasionally (between 1% and 30% of their statement was true). This mimics real-life behaviour of liars, as liars often embed their lies into truthful statements (Vrij, **2008**; Vrij, Granhag, *et al*., **2010**).

Participants' motivation

The reported motivation was high ($M = 5.09$, $SD = 1.79$). In percentages, 73.68% of the participants ($N = 28$) were motivated (their scores ranged between 5 and 7) and 21.05% of them ($N = 8$) were not motivated (their scores ranged between 1 and 3). Furthermore, 13% ($N = 5$) of the participants were concerned that they would be interrogated by the police officer (ratings of 7); all other participants did not know whether or not they would be interrogated (ratings of 4). There was no difference between the experimental conditions regarding motivation or concerns about being interrogated, $t(36) = 1.05$, *ns* and $t(20.1) = 1.85$, *ns* [2], respectively.

Verifiability

To test whether truth tellers provided more details, and especially more verifiable details than liars (Hypothesis 1), data were subjected to three ANOVAs with the following dependent variables: (1) total number of details (sum of verifiable details and unverifiable details), (2) number of details that can be verified, and (3) number of details that cannot be verified. The independent variable was the Veracity of

the statements (true, false). The ANOVA for the verified and unverified details combined was significant, $F(1, 36) = 4.80$, $\acute{\eta}^2 = .12$, $p < .05$, showing that truthful statements included more details ($M = 29.36$, $SD = 13.68$) than false statements ($M = 21.25$, $SD = 6.56$). The ANOVA for details that can be verified was also significant, $F(1, 36) = 16.24$, $\acute{\eta}^2 = .31$, $p < .001$, and truthful statements included more details that can be verified ($M = 11.0$, $SD = 5.20$) than did false statements ($M = 4.94$, $SD = 3.53$). In contrast, the ANOVA for details that cannot be verified was not significant, $F(1, 36) = 0.44$, *ns*, and truthful ($M = 18.36$, $SD = 11.07$) and false statements ($M = 16.31$, $SD = 6.36$) did not differ in the amount of unverifiable details. These results provide partial support for Hypothesis 1.

To test whether the ratio of verifiable/unverifiable details is larger for truth tellers than for liars (Hypothesis 2), we carried out an ANOVA with the verifiable/unverifiable ratio as the dependent variable, and Veracity as factor. A significant effect emerged, and the ratio between verifiable and unverifiable details was greater for truth tellers ($M = 0.80$, $SD = 0.55$) than for liars ($M = 0.38$, $SD = 0.36$), $F(1, 36) = 6.95$, $\acute{\eta}^2 = .16$, $p < .05$. This supports Hypothesis 2.

Discriminating between groups

To test whether considering only verifiable details rather than verifiable and unverifiable details combined would increase the ability to discriminate between truth tellers and liars (Hypothesis 3), we carried out three discriminant analyses. In those analyses, the objective veracity status was the classifying variable and the predictors were: (1) the total number of verifiable details; or (2) the total number of unverifiable details, or (3) the total number of details (sum of verifiable and unverifiable details). As Table 1 shows, it was possible to distinguish truth tellers from liars based on the verifiable and unverifiable details combined, $\chi^2(1) = 4.44$, Wilk's Lambda = .88, $p < .05$. The function correctly identified 72.2% of the truth tellers and 50.0% of the liars, resulting in the total accuracy rate of 63.2%. A significant discriminant function was also found for distinguishing between truth tellers and liars based on the verifiable details, $\chi^2(1) = 13.21$, Wilk's Lambda = .69, $p < .001$. The function correctly identified 77.3% of the truth tellers and 81.3% of the liars, resulting in a 78.9% total accuracy. Distinguishing truth tellers from liars was not possible when taking into account the unverifiable details, $\chi^2(1) = .43$, Wilk's Lambda = .99, *ns*. In other words, the best results were achieved by examining the verifiable details only, supporting Hypothesis 3.

Table 1. Accuracy rates achieved by using perceptual, spatial, and temporal criteria

	Truth tellers	Liars	Total
Hit rate			
Verifiable details	77.3	81.3	78.9
Unverifiable details	100.0	0.0	57.9
All details combined	72.7	50.0	63.2

	Truth tellers	Liars	Total
verifiable/unverifiable detail ratio	68.2	75.0	71.1

We conducted a fourth discriminant analysis to determine the efficacy of using the ratio between the number of verifiable and unverifiable details in discriminating between truth tellers and liars (Hypothesis 4). The discriminant function was significant, $\chi^2(1) = 6.27$, Wilk's Lambda = .84, $p < .05$, and correctly identified 68.2% of the truth tellers and 75.0% of the liars, resulting in 71.1% total accuracy. This supports Hypothesis 4.

Discussion

In the present experiment, we tested an innovative way of examining detail to discriminate between truth tellers and liars. We found that truth tellers included more perceptual, spatial, and temporal details that can be verified in their statements than liars. Based on the difference in number of verifiable details, more truth tellers and liars were classified correctly (78.9%) than on the basis of the difference in the total number of details (63.2%). Just on the basis of unverifiable details, no classification above chance was possible.

Furthermore, our experiment showed that counting verifiable and unverifiable detail can be used as a within-subjects lie-detection tool by examining the ratio between the two types of detail. This ratio was higher for truth tellers than for liars (that is, truth tellers include relatively more verifiable than unverifiable details in their statements), and based on this ratio, 71.1% of truth tellers and liars were classified correctly. Within-subjects lie-detection tools are beneficial for real-life practice, as they control for the vast individual differences that typically emerge in people's verbal (as well as nonverbal) responses. Unsurprisingly, in our private conversations with practitioners, they often ask us to develop within-subjects lie-detection tools.

It is worth speculating as to why liars did not include more unverifiable details in their statements than truth tellers because such a difference was predicted in Hypothesis 1. The sample size was rather small and therefore, in theory, it could have been caused by a lack of statistical power. We think that this is unlikely as truth tellers generated more unverifiable details (M = 18.36) than liars (M = 16.31). A more likely, albeit speculative, explanation is that generating details is difficult for liars anyway, even when they are unverifiable. It is difficult because liars need to have enough imagination to generate them, and these unverifiable details must still fit in with the theme of the statement, otherwise they may sound odd and implausible.

Truth tellers and liars have been found to differ from each other in term of detail in many studies (see DePaulo *et al*., **2003**; Masip, Sporer, Garrido, & Herrero, **2005**; Vrij, **2005**, **2008** for reviews), and several theoretical approaches explaining such differences are available. According to the CBCA approach, differences in detail emerge because some details that truth tellers include are too difficult for liars to make up (Köhnken, **1996**, **2002**, **2004**). In other words, liars lack the imagination to speak like truth tellers. According to the RM approach, differences in detail emerge because truth tellers, who have experienced an event, can recall perceptual information experienced during the event, whereas liars, who have only imagined the event, cannot (Sporer, **2004**). In other words, both CBCA and RM

assume that cognitive limitations (too difficult to fabricate, lack of perceptual information) give liars away. Someone could argue, however, that many liars do not lack imagination (Merckelbach, 2004) and that many liars discuss an event that they have actually experienced, albeit at another time that they claim they have (Leins, Fisher, & Ross, 2013). In theory, in such cases, differences in detail between truth tellers and liars should be nullified (Gnisci, Caso, & Vrij, 2010). Our verifiability approach, which focuses on liars actively employing a cognitive strategy in their attempts to foil investigators, should still be effective in discriminating between truth tellers and liars even if liars have a rich imagination and even if they discuss previous experiences, because liars will still be motivated to avoid providing details that could be verified.

When properly implemented, our verifiability approach may be difficult for liars to deal with. When liars realize that investigators use CBCA or RM to assess their credibility, they may adjust their stories to sound convincing to such investigators. They will succeed if they include details that appear credible to CBCA and RM investigators but that cannot be verified, such as recalling a (made up) conversation with a stranger they met on the street. They will succeed because their story becomes richer in quality in CBCA and RM terms, whereas it does not contain any more evidence. In contrast, if a liar knows that the investigator is after details that can be verified, the only way to convince such an investigator is to include more details that can be verified. In other words, the only option then is to provide more evidence, which can subsequently be verified by the investigator. As such, the present approach should be less open to countermeasures than using the more conventional CBCA and RM tools. In fact, the present approach may be effective against countermeasures. If interviewers inform interviewees at the beginning of the interview that s/he will look for verifiable details, truth tellers may well respond by including many of such details in their statement, whereas liars are more reluctant and less likely to do so. This may result in a larger difference in verifiable details between truth tellers and liars in these interviews than in interviews where the interviewer does not inform the interviewer about his/her intention to look for verifiable details. This idea is worth examining in future research.

Our approach complements the strategic use of evidence (SUE) approach (Clemens *et al*., 2010; Granhag, Strömwall, Willen, & Hartwig, 2013; Hartwig, Granhag, Strömwall, & Kronkvist, 2006) . In the SUE approach, an investigator is encouraged to ask the suspect questions about details the investigator (unknowingly to the suspect) possesses about the crime. The investigator then checks whether the suspect's statement matches that information. In other words, the SUE approach focuses on factual information the investigator already knows and that can be verified. In our approach, the investigator does not possess any factual information yet, but has to determine whether the suspect's statement potentially can be verified. The investigator can subsequently check the details from the suspect's statement that can be verified. In other words, both SUE and our approach focus on facts that can be verified; the difference is that in SUE, the investigator already knows some details of the crime, whereas this is not the case in our approach. In comparison with SUE, our approach can be implemented more frequently, as it can be implemented even if the investigator does not possess factual information; the investigator merely has to be able to determine if the liars' statements *can* be verified.

Two limitations of the experiment are worth mentioning. First, we focused on a specific type of lies – outright lies. These are the lies most frequently told in daily life, and DePaulo and her colleagues found in their diary research that 67% of the lies people tell in daily life are outright lies (DePaulo & Bond, 2012; DePaulo, Kashy, Kirkendol, Wyer, & Epstein, 1996). Different findings could emerge if we

consider other types of lie. For example, when a liar conceals rather than fabricates information, s/he has more opportunities to provide verifiable details, as part of her/his statements will contain true facts. Further research is required to explore the applicability of the verifiability approach to different types of lie. Second, participants in the present experiment were asked to write down their statements. As it may be easier to apply strategies when writing than when speaking, future research could test whether our findings generalize to oral statements.

We have shown that liars mentioned fewer details that can be verified than do truth tellers. In addition, we showed that the verifiability approach can be applied as a within-subject measure (by calculating the ratio between verifiable and unverifiable details). Our verifiability approach provides an alternative to CBCA and RM as to why verbal differences between truth tellers and liars occur and may be resistant against countermeasures. The verifiability approach can also be applied when the investigator does not have evidence, and, as such, it complements the SUE approach.

Acknowledgement

We thank Hofit Vizman for her assistance in this research.

1 The unequal number of liars and truth tellers was caused by an administrative error.

2 Variances of groups (truthful, false) were unequal and t-test was calculated accordingly.

References

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