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Combining Verbal Veracity Assessment Techniques to Distinguish Truth Tellers from Lie Tellers

Aldert Vrij[a], Samantha Mann[a], Sharon Leal[a], and Ronald P. Fisher[b]

[a]University of Portsmouth, Portsmouth, UK; [b]Florida International University, Miami, USA

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ABSTRACT

Cognitive Credibility Assessment (CCA) is a verbal lie detection tool consisting of several interview techniques. These techniques have been examined separately but never together. Reflecting the dynamic nature of CCA we combined several of the techniques (free recall followed by a model statement, followed by a reverse order instruction, and followed by a sketch instruction). We examined the new information provided after each stage of the interview and also compared the information provided in the initial recall with the information provided after the entire interview. A total of 47 truth tellers and 47 lie tellers went on a mission. Truth tellers were asked to report their mission truthfully, whereas lie tellers were requested to lie about several aspects of the mission. We measured the total units of information (total details) provided in the interview and the number of complications reported. The results indicate that the pre-registered hypothesis (Hypothesis 1) was supported for complications. Truth tellers reported more complications than lie tellers in each stage of the interview and the difference was more pronounced after the entire interview than after the free recall. As a conclusion, CCA was an effective lie detection method when complications were taken into account.

Combinando técnicas verbales de evaluación de la veracidad para discriminar testimonios verdaderos de falsos

Palabras clave:
Evaluación cognitiva de la credibilidad
Obtención de la declaración
Declaración tipo
Recuerdo en orden inverso
Sketch
Fuentes verificables

RESUMEN

La evaluación cognitiva de la credibilidad (ECC) es una herramienta verbal de detección de mentiras que incluye varias técnicas de entrevista. Dichas técnicas se han examinado por separado pero nunca juntas. Para reflejar el carácter dinámico de la ECC combinamos varias de las técnicas (recuerdo libre seguido de una declaración tipo, seguido de una instrucción de recuerdo en orden inverso, y de una instrucción para que hagan un sketch -esquema- durante la narración del evento). Analizamos la información nueva proporcionada tras cada etapa de la entrevista y también comparamos la información procedente del recuerdo inicial con la aportada por toda la entrevista. Un total de 47 sujetos que decían la verdad y 47 que mentían fueron enviados a una misión. A los participantes de la condición de testimonio verdadero se les pidió que informaran de su misión de modo veraz, mientras que los de la condición de mentira se les solicitó que mintieran sobre distintos aspectos de la misión. Se midió el total de unidades de información (detalles totales) de la entrevista y el número de complicaciones de las que se informaba. Los resultados mostraron que los participantes de la condición de verdad informaban de más detalles y complicaciones (hipótesis 1) en cada fase de la entrevista siendo las mayores diferencias tras la entrevista global que tras el recuerdo libre. En conclusión, la categoría complicaciones de la ECC es eficaz en la detección de la mentira.

The cues to deceit that lie tellers spontaneously display are typically faint and unreliable (DePaulo et al., 2003; DePaulo & Morris, 2004), which encouraged researchers to design interview protocols to elicit more distinctive cues (Vrij & Granhag, 2012). To date this line of research has resulted in the development of various verbal veracity assessment tools, including Assessment Criteria Indicative of Deception (Colwell et al., 2013; Colwell et al., 2015; Colwell et al., 2009), Cognitive Credibility Assessment (Vrij, 2014, 2015; Vrij, Fisher, et al., 2017), the Strategic Use of Evidence (Granhag & Hartwig, 2008, 2015; Hartwig et al., 2014), and the Verifiability Approach (Nahari, 2018; Nahari & Vrij, 2019; Vrij & Nahari 2019).

In this article, we focus on Cognitive Credibility Assessment (CCA). The core of CCA is that truth tellers and lie tellers differ in the cognitive processes and strategies that they use to appear convincing. Investigators can exploit these differences through the use of specific interview techniques. When effective, it should enhance the verbal

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differences between truth tellers and lie tellers. In CCA research to date these interview techniques have been examined separately. This does not reflect the dynamic nature of good information-gathering interviewing, which typically consists of different questioning techniques to require as much information as possible (Fisher & Geiselman, 1992). Neither does it reflect the dynamic nature of CCA (Vrij, Fisher, et al., 2017; Vrij et al., 2015). In the current experiment, we tested the efficacy of CCA while reflecting the dynamic nature of an interview-setting by combining several of the CCA techniques in one interview protocol: an initial recall followed by the model statement technique, the reverse order technique, and the sketching while narrating technique. We added one more technique, the verifiable sources technique, to the sequence. We examined the new information provided after each stage of the interview and also compared the information provided in the initial recall with the information provided throughout the entire interview.

Veracity and the Information Provided

In the present experiment, we focused on two verbal cues related to veracity, total details, and complications. Total details is the verbal cue most frequently examined to date (DePaulo et al., 2003; Vrij, 2008) and complications showed promising results in recent years (Vrij & Vrij, 2020). Truth tellers typically report more details than lie tellers (Amado et al., 2016). Truth tellers' memory of an experienced event is often richer than lie tellers' memory of a fabricated event. Lie tellers may therefore be unable to report as many details as truth tellers, because they lack the imagination to fabricate as many details as truth tellers that sound plausible (Köhnken, 2004). Lie tellers may also be unwilling to report as many details as truth tellers and prefer to keep their stories simple (Hartwig et al., 2007). They may fear that details they provide result in leads to investigators (Nahari et al., 2014) or that they will not remember these details anymore when interviewed about the event again in the future (Vrij, 2008).

A complication is an occurrence that affects the story-teller and makes a situation more complex ("It was too hot in my room, because the air conditioning was not working properly in the hotel"). Truth tellers typically report more complications than lie tellers (Amado et al., 2016), a finding obtained in Western (Vrij, Leal, Jupe, et al., 2018) and non-Western samples (Russian, Korean, and Hispanic samples; Vrij & Vrij, 2020) and in interviews with or without an interpreter (Vrij & Leal, 2020). In addition, in an experiment where lie tellers were encouraged to include complications in their reports they still included fewer complications than truth tellers (Vrij, Leal, et al., 2020). Making up complications requires cognitive resources, but lie tellers may not have adequate cognitive resources to do so (Köhnken, 2004; Vrij, 2008). In addition, adding complications makes the story more complex, which is in conflict with lie tellers' inclination to keep their stories simple.

Total details is a combination of two types of detail: contextual details and perceptual details. Contextual details are details related to space and time; perceptual details are details related to senses (what people saw, heard, smelled, etc.). Complications is not a type of detail. Instead, it is a cluster of details that become a complication due to their combined meaning. For example, the sentence given above ("It was too hot[1] in my[2] room[3], because the air conditioning[4] was not working[5] properly in the hotel[6]") contains six details but the combined meaning of these six details results in a complication.

The Model Statement, Reverse Order Recall, Sketching while Narrating, and Verifiable Sources: Information Provided and Differential Effect on Truth Tellers and Lie Tellers

Model Statement

A model statement is an example of a detailed account unrelated to the topic of the interview that is presented to interviewees during an interview (Leal et al., 2015). People typically do not initially recall all information that is in their memory (Vrij et al., 2014), which is in part dictated by social rules. Such rules imply that people restrict themselves to providing only a limited amount of information when answering a question. When someone is asked by a colleague on Monday morning what s/he did during the weekend, the answer is likely to be just a few words or few sentences (Vrij, Leal, & Fisher, 2018). People may realise that more information is expected from them in a formal interview but they then still underestimate how much information they are expected to provide (Vrij, Leal, & Fisher, 2018). One effective way to raise truth tellers' expectations about how much information to provide in an interview is to expose them to a model statement (Leal et al., 2015). Research has shown that a model statement results in more information than the verbal request to provide a detailed description (Vrij, Leal, & Fisher, 2018), perhaps because the former is a concrete example whereas the latter is an abstract instruction. It is probably easier for people to follow concrete examples than to follow abstract instructions (Leal, Vrij, Deeb, et al., 2018).

A model statement raises the expectations to report more information in both truth tellers and lie tellers (Ewens, Vrij, Leal, et al., 2016), which makes the model statement an ineffective tool to discriminate between truth tellers and lie tellers when additional details are considered (Vrij, Leal, Deeb, et al., 2018; Vrij, Leal, Deeb et al., 2019; Vrij, Leal et al., 2020). However, research has shown that a model statement is an effective veracity assessment tool when complications are considered, with truth tellers reporting more additional complications than lie tellers after exposure to a model statement (Vrij, Leal, Deeb et al., 2019; Vrij, Leal, Jupe, et al., 2018; Vrij, Leal, et al., 2020). Complications are often not about key aspects of the activities that someone describes, and the story can be well understood without reporting the complications (Vrij, Leal, & Fisher, 2018). Therefore, complying with the social rule not to report all information they know, truth tellers may leave out at least some complications when they are not exposed to a model statement, but may decide to report them after a model statement when expectations of how much information to report are raised. Liars prefer to keep their story simple and may therefore be reluctant to provide complications, because the addition of complications make a story more complex.

Reverse Order Recall

In a reverse order recall (Fisher & Geiselman, 1992) interviewees are asked to report an event in reversed chronological order (e.g., "Please tell me what you did last night, but start from the moment you went to bed and take me back through to the moment the evening started"). People encode in their memory details of an event in the chronological time order they occurred. People typically report events in that chronological time order when asked to report all details they can remember about an event. A reverse order instruction runs counter to the natural forward-order coding and reporting of events (Gilbert & Fisher, 2006; Kahana, 1996). This makes truth tellers to think about the event again but this time from another perspective. Different perspective taking often allows people to retrieve information from their memory they did not retrieve before and therefore often leads new information not reported previously (Fisher & Geiselman, 1992).

Research has shown that a reverse order recall leads to more additional information from truth tellers than from lie tellers (Ewens, Vrij, Mann, et al., 2016; Shaw et al., 2014). This may occur because truth tellers' memory of a truly experienced event is likely to be richer in detail than lie tellers' memory of a fabricated event. This gives truth tellers more opportunity and makes it easier for them to add details than for lie tellers. Alternatively, lie tellers

are very much focused on consistency because they believe that inconsistent answers may give their lies away (Deeb et al., 2017; Granhag & Strömwall, 1999; Strömwall et al., 2004). When we demonstrated the reverse order technique to practitioners, some volunteer lie tellers reported that they thought the reverse order instruction is a 'trick' to check whether they can repeat in reverse order the same information they mentioned earlier. Lie tellers who think this are unlikely to add details to their stories. Complications have never been examined in combination with a reverse order instruction, but the same reasoning as to why truth tellers are likely to report more additional details than lie tellers in response to a reverse order instruction is likely to apply to complications.

Sketching While Narrating

Sketching while narrating refers to asking interviewees to make a sketch of the event while discussing the event (Fisher & Geiselman, 1992). Sketching while narrating facilitates recall in adults (Dando et al., 2009; Leins et al., 2014; Mattison et al., 2015). Vrij, Mann et al. (2020) provided five reasons why sketching while narrating facilitates recall: (i) it mentally reinstates the context of the interviewee's experience; (ii) drawing one aspect of an event may cue retrieval of other aspects of that event; (iii) it is a visual output compatible with visually experienced events; (iv) it is a time-consuming activity that slows down the thinking process and thus gives interviews good opportunity to search their memory; and (v) it automatically leads to providing spatial information because someone must situate each person or object in a specific location in the sketch.

Research has shown that sketching while narrating results in more additional details and more additional complications from truth tellers than from lie tellers (Vrij, Leal, Fisher, et al., 2018; Vrij, Mann, et al., 2020). Again, a truth teller's memory of a truly experienced event is likely to be richer in detail than a lie teller's memory of a fabricated event, which gives truth tellers more opportunity and makes it easier for them to add detail and complications than for lie tellers.

Verifiable Sources

Arguably, the best way to detect deceit is by comparing an interviewee's statement with the available evidence. Such comparisons are frequently made by investigators and in daily life more lies are discovered this way than by any other method (Park et al., 2002). Derived from the Verifiability Approach we added one question to the interview protocol, requesting interviewees to report their experiences one final time but now to include as many details as possible the interviewer could check. Research has shown that truth tellers report more details that can be checked than lie tellers (Vrij & Nahari, 2019), because for lie tellers it is often impossible to provide evidence for their fabricated events.

Following Leal, Vrij, Deeb, et al. (2018) and Vrij, Leal, Deeb, et al. (2019), rather than counting the number of checkable details we counted the number of checkable sources. To explain the difference, the sentence "I spoke with my friend Fred at 10.30 this morning" contains five verifiable details (the underlined words) and one verifiable source ('Fred'). We counted verifiable sources rather than verifiable details for applied reasons, because the number of verifiable sources is easier to count in real time than the number of verifiable details. Verifiable sources and verifiable details are related with each other because a verifiable source leads to verifiable details (Leal, Vrij, Deeb, et al. ,2018).

The verifiable sources question is primarily aimed at eliciting verifiable sources, not at eliciting new details about the event or complications, however this could occur. That is, if participants focus on possible verifiable sources, new details about the event may be remembered and mentioned and this new information could include complications.

Hypotheses

This experiment is pre-registered at https://osf.io/gx7vf. We tested five hypotheses. Hypothesis 1 was pre-registered. Hypotheses 2, 3, and 4 are exploratory hypotheses and derived from Hypothesis 1. As a result, if Hypothesis 1 is supported, Hypotheses 2 and 4 are more likely to be supported and, vice versa, if Hypothesis 1 is not supported, Hypotheses 2 and 4 are more likely not to be supported. Hypothesis 5 is also exploratory but not related to Hypothesis 1.

Pre-registered Hypothesis

Truth tellers will report more details and more complications than lie tellers after both the initial free recall and the entire interview, with the most pronounced differences after the entire interview (Hypothesis 1).

Exploratory Hypotheses

Truth tellers will add after each phase of the interview more details (except after the model statement phase) and more complications than lie tellers (Hypothesis 2).

Truth tellers will show stronger linear trends of adding new details and new complications during each phase of the interview than lie tellers (Hypothesis 3).

The percentages of correct classifications of truth tellers and lie tellers based on details and complications will be higher after the entire interview than after the first recall (Hypothesis 4).

Truth tellers will report more verifiable sources than lie tellers (Hypothesis 5).

Method

Design

We used a one-factorial design with veracity as factor. A total of 47 participants were allocated to the truth condition and 47 participants to the lie condition. Five types of analysis were carried out in the Hypotheses-testing section. First, to test the pre-registered Hypothesis 1 we carried out two ANOVAs – one for details and one for complications – utilising a 2 (veracity) x 2 (phase - free recall vs. entire interview) mixed factorial design with veracity as between-subjects factor and phase as within-subjects factor. 'Free recall' refers to the number of details and complications reported during the free recall and 'entire interview' refers to the number of unique details and unique complications reported during the entire interview (all details and complications reported during the free recall and, added to this, the new details and complications reported in each subsequent phase of the interview). Hypothesis 1 predicts an interaction effect with a larger difference between truth tellers and liars to be obtained in the entire interview than in the free recall. The interaction effect is the only effect that we will discuss.

Second, to test the exploratory Hypothesis 2, two MANOVAs – one for details and one for complications during each phase of the interview – were conducted. We only examined new details and new complications; all repetitions were ignored (see the Coding section below). Third, to test the exploratory Hypothesis 3, we carried out two mixed ANOVAs – one for details and one for complications – with veracity (truth vs. lie) as between-subjects factor and phase (model statement, model statement + reverse order, model statement + reverse order + sketch, model statement + reverse order + sketch + verifiable sources) as within-subjects factor. 'Model statement'

refers to the number of new details or new complications reported in the model statement phase of the interview. In 'model statement + reverse order' the number of new details or new complications reported in the reverse order phase was added to this total, etcetera. The veracity x phase interaction is the key part of the analyses and the only effect that we will discuss.

Fourth, to test the exploratory Hypothesis 4, we carried out discriminant analyses to examine the percentages of correct classifications of truth tellers and lie tellers based on the dependent variables after the free recall and the entire interview. Paired-samples *t*-tests were conducted to examine differences in accuracy rates between the free recall and the entire interview. Fifth, to test the exploratory Hypothesis 5, a one-way ANOVA was carried out with Veracity as factor and verifiable sources mentioned in the verifiable sources phase of the interview as dependent variable.

Participants

Initially 100 participants (university students and members of staff) took part but six of them did not follow the instructions (n = 3) or misunderstood a question (n = 3). They were excluded from the analyses. The final sample of 94 participants included 23 males and 71 females; their average age was M = 23.20 years (SD = 7.29).

Procedure

The mission. Participants met with the experimenter who told them to imagine that they were a secret agent for the government. They then received instructions for a mission they were requested to complete. They were instructed to go to a specific shop and buy a specific item; then to go to a specific location to meet the fellow agent who could be identified through a specific bag s/he had with him/her. Then they were to show the agent the purchased item and to exchange certain verbal codes to ensure that the participant and agent both know that they were dealing with the right person. Then they were to accept a package from the fellow agent, hide it at a specific place in the same university building as where the mission started and to return to the experimenter. They were then given a map with the shop and location of the exchange added.

After completing the mission, the experimenter gave them the following instructions depending on what experimental condition the participant was in:

Truth tellers: '"You are now going to be interviewed. The interviewer is on your team. Therefore, tell the interviewer everything that you can remember about your mission in as much detail and as fully as you can. You need to convince the interviewer you are telling the truth. If the interviewer believes you then you will be entered into a draw to win a prize of up to £150 in vouchers. If you are not convincing you will not be entered into a draw but will instead be asked to write a statement about your mission. You may have some time to prepare if you wish."

Lie tellers: "You are now going to be interviewed. The interviewer is not on your team. Therefore, you need to mislead the interviewer about everything to do with the exchange. You need to report you went on a mission but to lie about the package, the agent you received it from, and the location where you met the agent and received it. However, you need to convince the interviewer you are telling the truth. If the interviewer believes you then you will be entered into a draw to win a prize of up to £150 in vouchers. If you are not convincing you will not be entered into a draw but will instead be asked to write a statement about your mission. You may have some time to prepare if you wish."

Pre-interview questionnaire. After completing their preparations, participants were asked to complete a pre-interview questionnaire. Participants were instructed to complete the pre-interview questionnaire honestly. In the pre-interview questionnaire, after reporting details about gender and age, participants rated their thoroughness of preparation via three items: (1) shallow to (7) thorough; (1) insufficient to (7) sufficient; and (1) poor to (7) good. The answers to the three questions were averaged (Cronbach's alpha = .83) and the variable is called 'preparation thoroughness'. Participants were also asked whether they thought they were given enough time to prepare themselves with the following question: "Do you think the amount of time you were given to prepare was: (1) insufficient to (7) sufficient?" Finally, participants were asked how motivated they were to perform well during the interview: (1) not at all motivated to (5) very motivated.

The interview. After completing the pre-interview questionnaire participants were taken to the interview room. The interviewer started by saying: "I will interview you about the mission you just completed. Depending on your answers, we may decide to interview you a second time". The interviewer then asked five questions (see Appendix) always in the same order. The rationale for this order is as follows:

Phase 1. The initial free recall of the mission is meant to obtain an initial statement from the interviewee. Such a recall is recommended as an opening request in the interviewing literature (Fisher, 2010; Griffith & Milne, 2006).

Phase 2. A model statement followed by the request to report the mission again but this time taking into account the number of details reported in the model statement. We introduced the model statement at phase 2 because it is known to elicit additional details from interviewees after an initial recall (Vrij, Leal, Jupe, et al., 2018; Vrij, Leal, Deeb, et al., 2019; Vrij, Leal, et al., 2020). The model statement was a 1.30 minutes long detailed account of someone attending a Formula 2 motor racing event. The account was a spontaneous, unscripted, recall of an event truly experienced by the person and introduced by Leal et al. (2015).

Phase 3. An invitation to report the mission again but this time in reverse order. We introduced the reverse order recall to retrieve some more details about the entire mission. We included it at this phase rather than before the model statement because we expected lie tellers to have added details at the model statement phase. If their aim at the reverse order phase is to repeat what they have said before, the task would now be harder due to the additional details they provided at the model statement phase. We thought the more difficult their task of repeating information is, the less likely it is that they would consider adding new details.

Phase 4. An invitation to sketch and narrate everything the interviewee experienced at the location where the exchange took place, one of the key moments of the mission. The interviewing literature recommends asking more focused questions after the general questions (Fisher, 2010; Griffith & Milne, 2006) and the sketching while narrating instruction is an efficient 'zoom-in' question.

Phase 5. An invitation to report the entire mission once again but this time to include sources the interviewer could possibly check. A question linking the statement with the evidence outside the interview room is a suitable question to finish an interview with as the answer provides investigative leads to follow up after the interview.

Post-interview questionnaire. When the participant had finished the interview, s/he returned to the experimenter to complete the post-interview questionnaire. Participants were instructed to complete the post-interview questionnaire honestly. Participants were asked to indicate the extent to which they told the truth during the interview on an 11-point Likert scale ranging from 0% to 100%. It also measured rapport with the interviewer, because rapport is an important motivator for a productive interview (Brimbal et al., 2019). It was measured via the nine-item Interaction Questionnaire (Vallano & Schreiber Compo, 2011). Participants rated the interviewer

on 7-point scales ranging from [1] *not at all to* [7] *extremely* on nine characteristics such as smooth, bored, engrossed, and involved (Cronbach's alpha = .82).

On completing the post-interview questionnaire, participants were thanked and fully debriefed. They were given £15 or 1.5 participant pool credits for taking part. All participants were also included in the draw to win a voucher and nobody had to write a statement.

Coding

Four experienced coders coded the transcripts. Two of them coded 'total details' whilst the other two coded the complications and verifiable sources. In each case, one person coded all the transcripts whilst the other person coded a random 25 transcripts for inter-rater reliability calculation.

Detail. The interviews were audio-taped and transcribed. Coding took place on the transcripts. The coders were blind to the veracity condition and coded each detail in the interview. A detail is defined as a non-redundant unit of information. For example, the following sentence has nine details: "I went to Sainsbury, to the 'free from' section where I found the chocolate bar. It was 50p and I paid with a £1 coin." Each detail in the interview was coded only once; repetitions were not coded. Inter-rater reliability between the two coders, using the two-way random effects model measuring consistency, was excellent (single measures ICC = .97).

Complications. One coder, blind to the veracity condition, coded all the complications in the transcripts. Repetitions were not coded. A complication is an occurrence that affects the story-teller and makes a situation more complex (Vrij, Leal, et al., 2020). Examples of complications are: (a) "It started to rain so I got my umbrella out"; (b) "In the shop I asked someone where the chocolate was because I could not find it"; and (c) "I had difficulty finding her because she sat right in the corner". Inter-rater reliability between the two coders, using the two-way random effects model measuring consistency, was very good (single measures, intraclass correlation coefficient, ICC = .90).

Verifiable sources. One coder, blind to the veracity condition, coded all the verifiable sources reported in the transcripts. This included mentioning of CCTV cameras ("There are cameras in Sainsbury's"), people that can be traced ("And then I went to Eldon Building where I saw a friend called David"), receipts ("I have a receipt from my Sainsbury's purchase"), and phone signals ("I had my phone with me so you could track my GPS"). Inter-rater reliability between the two coders, using the two-way random effects model measuring consistency, was very good (single measures, intraclass correlation coefficient, ICC = .90).

Results

Preparation Thoroughness, Preparation Time, Motivation, and Rapport

A MANOVA was carried out with veracity (truth vs. lie) as the only factor and preparation thoroughness, preparation time, motivation and rapport as dependent variables. The multivariate effect was not significant, $F(4, 89) = 1.23$, $p = .304$, $\eta_p^2 = .05$. At a univariate level, none of the effects were significant either, all Fs < 1.83, all ps > .179. Preparation thoroughness, preparation time, and rapport were measured on 7-point Likert scales and motivation on a 5-point Likert scale. The grand mean scores for preparation thoroughness ($M = 5.10$, $SD = 1.25$), preparation time ($M = 5.09$, $SD = 1.39$), and rapport ($M = 5.17$, $SD = 0.85$) indicated that participants thought that their preparation thoroughness, their preparation time, and their rapport with the interviewer were good. The grand mean for motivation ($M = 4.43$, $SD = 0.61$) shows that participants were very motivated.

Percentage of Truth Telling

An ANOVA was carried out with veracity (truth vs. lie) as factor and percentage of truth telling as dependent variable. The analysis showed a significant effect, $F(1, 92) = 378.36$, $p < .001$, $d = 4.01$ (3.26, 4.65). Truth tellers ($M = 99.57$, $SD = 2.04$, 95% CI [95.15, 104.00]) reported to have been more truthful than lie tellers ($M = 38.30$, $SD = 21.50$, 95% CI [33.87, 42.72]). This shows that the manipulation check was successful, but note that also lie tellers indicated that a large part of information they reported was truthful.

Hypothesis Testing: Pre-registered Hypothesis 1

In the two hypotheses-testing sections, we report both Cohen's d scores and the Bayes factor, BF_{10}. Bayes factors (BFs) quantify the evidence for the alternative hypothesis (presence of an effect) relative to the null hypothesis (absence of an effect), and vice versa. Thus, as BF_{10} increases, there is more evidence in support of the alternative hypothesis, but the inverse yields the opposite (i.e., $1/BF_{10}$) and provides more evidence in support of the null hypothesis (Jaroz & Wiley, 2014). BFs between 1 and 3 suggest weak evidence, BFs between 3 and 10 suggest strong evidence and BFs > 10 suggest very strong evidence for the alternative hypothesis, whereas BFs between 0.33 and 1 suggest weak evidence, BFs between 0.10 and 0.33 suggest strong evidence and BFs < 0.10 suggest very strong evidence for the null hypothesis (Jeffreys, 1961). We used the default Cauchy's prior of .707 for the Bayesian t-tests (Lakens, 2016).

Details. A 2 (veracity) x 2 (phase - free recall vs. all interview) mixed ANOVA was carried out with veracity as between-subjects factor and phase as within-subjects factor. Total details was the dependent variable. The interaction effect is of key interest. It was not significant, $F(1, 92) = 0.66$, $p = .417$, $\eta_p^2 = .01$. This means that the difference between truth tellers and liars was not more pronounced in the total interview than in the free recall, which does not support Hypothesis 1 for details. The statistics for the two details variables, details in the free recall (called free recall), and details in the entire interview variable (called total unique details) are presented in Table 1.

Complications. A 2 (veracity) x 2 (phase - free recall vs. all interview) mixed ANOVA was carried out with veracity as between-subjects factor and phase as within-subjects factor. Complications was the dependent variable. Of key interest is the interaction effect, which was significant, $F(1, 92) = 23.11$, $p < .001$, $\eta_p^2 = .20$. As Table 1 shows truth tellers reported more complications than lie tellers in both the free recall and entire interview and the Bayes factors showed strong evidence for the alternative hypothesis. The effect size was medium for the initial free recall phase but large for the entire interview. In other words, the difference was more pronounced in the total interview than after the free recall, which supports Hypothesis 1. The statistics for the two complications variables, complications in the free recall (called free recall) and complications in the entire interview variable (called total unique complications) are presented in Table 1.

Hypothesis Testing: Exploratory Hypothesis 2

Details. A MANOVA with veracity (truth vs. lie) as the only factor and the first five details variables listed in Table 1 (free recall through to verifiable sources) as dependent variables resulted in a significant multivariate effect, $F(5, 88) = 4.35$, $p = .001$, $\eta_p^2 = .20$. All the univariate results are presented in Table 1. Truth tellers reported more details than lie tellers in the initial free recall and in the reverse order recall. The effect sizes were large and medium respectively and the Bayes

factors show strong evidence for the alternative hypothesis in the free recall phase and weak evidence for the alternative hypothesis in the reverse order phase. The Bayes factors show strong evidence for the null hypothesis in the model statement and sketch phases and weak evidence for the null hypothesis in the verifiable sources phase. This means that Hypothesis 2 was not supported for details.

Complications. Parallel to the analysis of details, we carried out a MANOVA with veracity (truth vs. lie) as the only factor and the first five complications variables listed in Table 1 (free recall through to verifiable sources) as dependent variables. It resulted in a significant multivariate effect, $F(5, 88) = 5.26$, $p < .001$, $\eta_p^2 = .23$. Table 1 shows that truth tellers reported more complications during all phases of the interview except in the final, verifiable details, phase. The effect sizes for the significant effects ranged from medium to large and the Bayes factor analyses showed very strong evidence for the alternative hypothesis in the free recall, model statement, and sketch phases and strong evidence for the alternative hypothesis in the reverse order phase. There was only weak evidence for the null hypothesis in the verifiable details phase. This shows support for Hypothesis 2 for complications.

Hypothesis Testing: Exploratory Hypothesis 3

Details. Next, we tested whether truth tellers showed a stronger linear trend than lie tellers in adding details during the different phases of the interview by carrying out a mixed ANOVA with veracity (truth vs. lie) as between-subjects factor and phase (model statement, model statement + reverse order, model statement + reverse order + sketch, model statement + reverse order + sketch + verifiable details) as within-subjects factor. The veracity x phase interaction is of main interest in this analysis. It was not significant, $F(3, 276) = 0.65$, $p = .581$, $\eta_p^2 = .01$, which means that Hypothesis 3 was not supported for details.

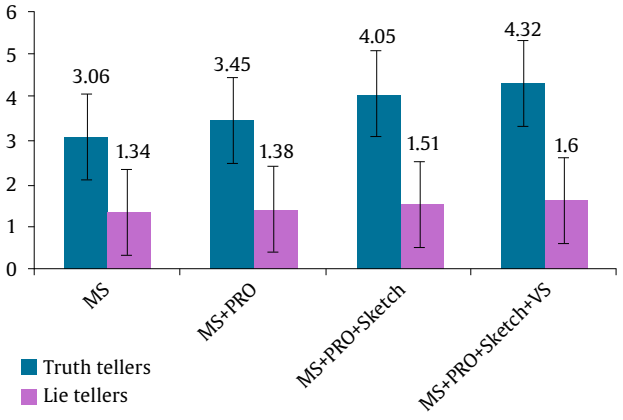

Figure 1. Cumulate Number of Complications at each Phase as a Function of Veracity.
Note. MS = model statement; RO = reverse order; VS = verifiable sources.

Complications. Next, we carried out a mixed ANOVA with veracity (truth vs. lie) as between-subjects factor and phase (model statement, model statement + reverse order, model statement + reverse order + sketch, model statement + reverse order + sketch + verifiable details) as within-subjects variable. The veracity x phase interaction was significant, $F(3, 267) = 12.68$, $p < .001$, $\eta_p^2 = .12$. To follow up this interaction effect we carried out tests for truth tellers and liars separately. For truth tellers the effect was significant, $F(3, 138) = 22.59$, $p < .001$, $\eta_p^2 = .33$, with only the linear effect being significant, $F(1, 46) = 28.23$, $p < .001$, $\eta_p^2 = .38$. The quadratic, $F(1, 46) = 0.68$, $p = .414$, $\eta_p^2 = .02$, and cubic, $F(1, 46) = 4.00$, $p = .051$, $\eta_p^2 = .08$, effects were not significant.

For lie tellers the effect was also significant, $F(3, 138) = 7.09$, $p = .004$, $\eta_p^2 = .13$, with only the linear effect being significant, $F(1, 46) = 8.97$, $p = .004$, $\eta_p^2 = .16$. The quadratic, $F(1, 46) = 0.66$, $p = .420$, $\eta_p^2 = .01$, and cubic, $F(1, 46) = 1.21$, $p = .278$, $\eta_p^2 = .03$ effects were not significant. This means that both truth tellers and liars added more complications during each phase of the interview. However, the significant interaction effect and the stronger linear effect for truth tellers than for lie tellers show that truth tellers did this to a larger extent than lie tellers, see Figure 1. This supports Hypothesis 3 for complications

Hypothesis Testing: Exploratory Hypothesis 4

Details. We ran two discriminant analyses to distinguish between truth tellers and lie tellers in the (i) free recall phase and (ii) the entire interview using details as the predictor. In both cases, the objective group belonging (truthful versus deceptive) was the classifying variable. We present the cross-validated 'leave-one-out' results. For the free recall phase, the analysis was significant, $\chi^2 = 10.92$, Wilks' $\lambda = .89$, $p = .001$, canonical correlation = .335. The majority of lie tellers, 74.5%, were correctly classified but this occurred at the expense of correctly classifying truth tellers, 48.9% (61.7% total accuracy). For the entire interview, the analysis was not significant, $\chi^2 = 3.52$, Wilks' $\lambda = .96$, $p = .061$, canonical correlation = .194. The correct classification rates were 63.8% fore lie tellers and 55.3% for truth tellers (59.6% total accuracy). Paired-samples *t*-tests showed that the difference in accuracy rates for truth tellers in the free recall phase (48.9%) and entire interview (55.3%) was not significant, $t(47) = 0.77$, $p = .445$. The difference in accuracy rates for lie tellers in the free recall phase (74.5%) and entire interview (63.8%) was not significant either, $t(47) = 1.52$, $p = .135$. This does not support Hypothesis 4 for details.

Complications. We ran two discriminant analyses to distinguish between truth tellers and lie tellers in the (i) free recall phase and (ii) the entire interview using complications as the predictor. In both cases, the objective group belonging (truthful versus deceptive) was the classifying variable. We present the cross-validated 'leave-one-out' results. For the free recall phase, the analysis was significant, $\chi^2 = 14.63$, Wilks' $\lambda = .85$, $p < .001$, canonical correlation = .384. The vast majority of lie tellers, 89.4%, were correctly classified but this occurred at the expense of correctly classifying truth tellers, 44.7% (67.1% total accuracy). For the entire interview, the analysis was also significant, $\chi^2 = 23.74$, Wilks' $\lambda = .77$, $p < .001$, canonical correlation = .478. Again, the vast majority of lie tellers, 87.2%, were correctly classified but this time also the majority of truth tellers (57.4%) were correctly classified (72.3% total accuracy). Paired-samples *t*-tests showed that the difference in accuracy rates for truth tellers in the entire interview (57.4%) was significantly higher than in the free recall phase (44.7%), $t(47) = 2.21$, $p = .032$. The difference in accuracy rates for lie tellers in the free recall phase (89.4%) and entire interview (87.2.%) was not significant, $t(47) = 0.44$, $p = .660$. This provides support for Hypothesis 4 for truth accuracy only.

Hypothesis Testing: Exploratory Hypothesis 5

An ANOVA was carried out with veracity as factor and verifiable sources mentioned in the verifiable sources phase of the interview as dependent variable. Truth tellers reported significantly more verifiable sources than liars, see Table 1. The effect size was medium but the Bayes factor only showed weak evidence for the alternative hypothesis. In the experiment, lie tellers were specifically instructed to lie to the interviewer about the package, the agent they met, and the location where the exchange took place. These were thus the most serious lies in the experiment. We made a further distinction in verifiable sources related to these aspects,

Table 1. Statistical Results as a Function of Veracity

	Truth		Lie		*F*	*p*	Cohen's *d*		BF_{10}
	M (*SD*)	95% CI	*M* (*SD*)	95% CI			*d*	95% CI	
Details									
Free recall	39.02 (16.60)	34.09, 43.96	27.02 (17.47)	22.09, 31.96	11.66	.001	0.70	0.28, 1.11	31.05
Model statement	37.34 (22.24)	30.84, 43.84	36.45 (22.61)	29.95, 42.94	0.04	.847	0.04	-0.37, 0.44	00.22
Reverse order	04.06 (04.59)	2.93, 5.20	2.11 (3.10)	0.97, 3.24	5.87	.017	0.50	0.08, 0.90	02.77
Sketch	36.58 (19.43)	30.60, 42.56	35.47 (21.78)	29.49, 41.45	0.07	.795	0.05	-0.35, 0.46	00.22
Verifiable sources	08.38 (07.46)	06.32, 10.45	6.21 (6.80)	4.15, 8.28	2.18	.144	0.30	-0.11, 0.71	00.56
Total unique details	125.39 (45.10)	111.98, 138.80	107.26 (47.43)	93.85, 120.60	6.04	.016	0.39	-0.02, 0.79	01.05
Complications									
Free recall	02.17 (02.48)	1.62, 2.72	0.60 (1.08)	0.04, 1.15	15.95	< .001	0.82	0.39, 1.23	174.74
Model statement	03.06 (02.69)	2.45, 3.68	1.34 (1.34)	0.73, 1.96	15.46	< .001	0.81	0.38, 1.22	143.70
Reverse order	00.38 (00.80)	0.22, 0.55	0.04 (0.20)	-0.13, 0.21	8.08	.006	0.58	0.16, 0.99	07.05
Sketch	00.61 (00.94)	0.40, 0.82	0.13 (0.40)	-0.08, 0.34	10.36	.002	0.66	0.24, 1.07	18.18
Verifiable sources	00.26 (00.71)	0.11, 0.42	0.09 (0.28)	-0.07, 0.24	2.59	.111	0.32	-0.09, 0.72	00.68
Total unique complications	06.49 (05.40)	5.33, 7.65	2.19 (1.83)	1.04, 3.35	27.25	< .001	1.05	0.62, 1.48	12,760.86
Verifiable sources									
Total	6.52 (3.08)	5.66, 7.38	5.04 (2.85)	4.18, 5.90	5.84	.018	0.50	0.08, 0.90	02.74
Location	2.43 (1.44)	2.05, 2.82	1.62 (1.21)	1.23, 2.00	8.90	.004	0.61	0.19, 1.01	09.95
Elsewhere	4.09 (2.29)	3.39, 4.78	3.43 (2.52)	2.73, 4.12	1.77	.186	0.27	0.14, 0.68	00.47

called 'exchange and package' and verifiable sources related to other aspects of the mission. The effect was significant only for the verifiable sources related to the exchange and package. The effect size was medium and the Bayes factor showed strong support for the alternative hypothesis. Regarding the verifiable sources related to the other aspects, the Bayes factor showed weak evidence for the null hypothesis, see Table 1. This provides some support for Hypothesis 5.[1]

Exploratory Analyses for Complications

Practitioners prefer within-subjects comparisons: comparing different responses made by the same interviewee in a single interview (Vrij, 2016). We ran a within-subjects analysis for complications. Specifically, the initial free recall was the baseline and the number of complications reported at that stage were ignored. We focused on the number of new complications reported in the phases after the initial free recall. We conducted an ANOVA with veracity as factor and the total number of new complications reported in the phases after the free recall (model statement through to verifiable sources) as dependent variable. The analysis revealed a significant effect, $F(1, 92) = 23.11$, $p < .001$, $d = 0.99$ (0.55, 1.40), $BF_{10} = 2764.60$. Truth tellers reported after the free recall more new complications ($M = 4.32$, $SD = 3.60$, 95% CI [3.52, 5.11]) than lie tellers ($M = 1.60$, $SD = 1.45$), 95% CI [0.80, 2.39]). The effect size was large and the Bayes factor showed very strong support for the alternative hypothesis. We did not run similar analyses for details due to the lack of total details effects in the phases after the initial free recall.

We finally ran a discriminant analysis to distinguish between truth tellers and lie tellers with the number of new complications reported in the phases after the free recall as dependent variable. The objective group belonging (truthful versus deceptive) was the classifying variable. We present the cross-validated 'leave-one-out' results. The analysis was significant, $\chi^2 = 20.51$, Wilks' $\lambda = .80$, $p < .001$, canonical correlation = .448. Substantial majorities of truth tellers (63.8%) and lie tellers (76.6%) were correctly classified (70.2% total accuracy rate).

Discussion

In the present experiment, we examined whether differences between truth tellers and lie tellers would be more pronounced when considering the entire interview versus the initial free recall. This pre-registered hypothesis (Hypothesis 1) was supported for complications. Truth tellers reported more complications than lie tellers both in the free recall ($d = .82$) and in the entire interview ($d = 1.05$), but the difference was most pronounced for the entire interview. When taking into account each phase of the interview, truth tellers reported more complications than lie tellers in all phases of the interview, except the verifiable sources phase (exploratory Hypothesis 2). The increase in complications throughout each phase was also more pronounced in truth tellers than in lie tellers (exploratory Hypothesis 3). The finding that complications became more diagnostic for detecting deceit throughout the different phases of the interview could be considered remarkable, given the substantial difference in complications that was already obtained after the free recall. It could easily have resulted in a ceiling effect but that did not happen.

The verifiable sources phase was the only phase in the interview without veracity differences in complications. There are at least three reasons as to why no veracity differences in complications were found in the verifiable sources phase. First, it was the final phase of the interview. That puts this phase in a disadvantageous position compared to the previous phases because there are fewer opportunities to add new complications in later than in earlier phases. In other words, perhaps in the verifiable sources phase truth tellers had reported all complications they could remember. Second, it was the fifth time the interviewees recalled their mission. Perhaps at that stage participants were fatigued and did not put enough effort in providing new information that included complications. Third, the verifiable sources questions had a specific aim: to encourage interviewees to report sources that can be checked. It was not specifically meant to elicit veracity differences in complications unlike the model statement, reverse order, and sketching while narrating questions.

Based on the complications reported in the entire interview, 57.4% of truth tellers were correctly classified, significantly more than in the free recall (44.7% accuracy rate). For lie tellers, the difference in accuracy rates between free recall (89.4%) and entire interview (87.2%) was not significant. Although this shows support for Hypothesis 4 regarding truth accuracy rates, the results for classifying truth tellers were not impressive. It became higher only when the new complications after the initial free recall were taken

into account. In that scenario, a better correct classification of truth tellers (63.8%) was obtained whilst the correct classification of lie tellers remained high (76.6%) (70.2% total accuracy). Considering only the new complications after the free recall results in a within-subjects comparison, the initial free recall is used as a baseline and only additions to this baseline are taken into account for veracity assessment purposes. Within-subjects comparisons are preferred by practitioners as they control for individual differences (Vrij, 2016).

The total accuracy rate of 70.2% implies that still substantial percentages of truth tellers and lie tellers were incorrectly classified. An accuracy rate of around 70% is typical in verbal lie detection research. It is for example obtained in the Verifiability Approach, the Assessment Criteria Indicative of Deception tool, Criteria-Based Content Analysis, and Reality Monitoring (Vrij, 2018). It thus appears to be challenging to obtain accuracy rates above 70% when making veracity assessments based on speech content. There are at least four reasons why in the present experiment (and perhaps in making veracity assessments based on speech content in general) accuracy rates much beyond 70% are typically not achieved.

The first reason is related to laboratory research, suggesting that in real life higher accuracy rates could be obtained. Although truth tellers more than lie tellers reported sources that could be verified, lie tellers were not shy of bluffing and also reported verifiable sources, including about crucial aspects of the mission: the exchange and package. We think that bluffing is more likely to occur in an experiment than in real life, because the consequences of getting caught are more severe in real life than in an experiment. In addition, in all likelihood truth tellers will put more effort in recalling an account five times in real life than in a laboratory experiment. This could result in more additional details and complications after each phase in real life than in the laboratory. Veracity differences are therefore likely to be more pronounced in real life than in an experiment. Second, making veracity assessments based on speech content alone is difficult because there is nothing a statement could be compared with, such as evidence. If a statement could be compared with evidence, accuracy rates are likely to increase. In the present experiment truth tellers and lie tellers provided many details that investigators could check, and such checks would have confirmed that truth tellers were speaking the truth and lie tellers were not.

Third, lie tellers reported that large parts of their statements were truthful (38.30%), which reflects real life (Leins et al., 2013). The more truthful information lie tellers report, the more they will sound like truth tellers and the more difficult it will become to distinguish them from truth tellers. Fourth, in the present experiment – as well as in verbal lie detection in general – a good within-subjects measure was lacking. A good within-subjects measure would be that truth tellers would report something (i.e., complications) whereas lie tellers would never report complications but would report something else instead. We did not examine cues that lie tellers tend to report more than truth tellers in the present experiment.

Vrij and colleagues recently started to examine apart from complications (a cue to truthfulness) two cues to deceit: common knowledge details and self-handicapping strategies (Vrij & Vrij, 2020; Vrij, Leal, Jupe, et al, 2018; Vrij, Leal, et al., 2020). Common knowledge details refer to strongly invoked stereotypical information about events ("We visited the Louvre museum where was saw the Mona Lisa") (Vrij, Leal, et al., 2020). Self-handicapping strategies refer to explicit or implicit justifications as to why someone is not able to provide information ("I can't remember; it was a while ago when this happened") (Vrij, Leal, et al., 2020). Common knowledge details and self-handicapping strategies were not coded in the present experiment because a quick scan of the transcripts revealed that they rarely occurred.

To examine common knowledge details and self-handicapping strategies other deception scenarios are required than the one introduced in the current experiment. They are typically examined in a 'travel' scenario where participants report a trip they allegedly have made in the last twelve months (Vrij & Vrij, 2020). Making a trip is arguably a somewhat scripted activity, which makes common knowledge details likely to occur ("We visited the market, after which we went to the beach. We had dinner in a Mexican restaurant"). And when the trip occurred some time ago, it gives lie tellers the opportunity to include self-handicapping strategies ("I cannot remember which restaurants we went to in the evenings, we went there three months ago"). The situation is different when, for example, a source approaches his handler saying that he just overheard a conversation about the planning of an attack or, as in the present study, an agent discusses a mission s/he just completed. Common knowledge details and self-handicapping strategies are unlikely to occur in those scenarios. For common knowledge details to occur frequently enough to be analysed, interviewees probably have to describe an event that lasted longer than the short mission used in the present experiment. For self-handicapping strategies to occur frequently enough to be analysed, a larger time interval between the allegedly experienced event and the interview is probably required than the short time interval used in the present experiment.

The results for details were not as predicted. Truth tellers reported more details than lie tellers after both the free recall and the entire interview, but the difference did not become more pronounced throughout the interview. This does not support the pre-registered Hypothesis 1 for details and, since the exploratory Hypotheses 2 and 4 were based on the pre-registered Hypothesis 1, exploratory Hypotheses 2 to 4 were not supported either. The results in the individual phases may explain why the hypothesis was not supported. Truth tellers and lie tellers reported a similar number of new details after the model statement, which reflects the typical finding in previous model statement research (Vrij, Leal, & Fisher, 2018). Truth tellers reported more additional details than lie tellers after the reverse order recall. This also reflects previous research (Ewens, Vrij, Mann, et al., 2016; Shaw et al., 2014). However, the number of details truth tellers and lie tellers added in the reverse order phase was more than ten times smaller (M = 3) than what they added in the model statement (M = 37) and sketch (M = 36) phases. Therefore, the reverse order veracity effect had only limited impact on the veracity effect in the entire interview. Since the sketch phase followed the reverse order phase but resulted in more details, the position of the reverse order in the interview sequence cannot fully explain this finding. A reason why interviewees added so few new details in the reverse order phase is that a reverse order recall is a mentally taxing activity (Vrij et al., 2008). Putting a mental strain on interviewees is likely to have a negative effect on reporting information (Vrij, Meissner, et al., 2017).

Truth tellers and lie tellers reported an equal number of new details in the sketch phase, which contradicts Vrij, Leal, Fisher, et al. 2018 and Vrij, Mann, et al., 2020, but is in alignment with Vrij, Leal, Fisher, et al. (2019). As expected, truth tellers added a substantial number of details in this phase; the effect was not significant because lie tellers also added a large number of new details. The sketch question focused on the exchange, the part of the missions lie tellers were instructed to lie about. That they added so much details about this part of the mission indicates that they may have been bluffing. Perhaps they thought it unlikely that their statements would be checked. If true, better results would be achieved if real life settings where bluffing is less likely to occur.

Although the findings regarding details were disappointing from a lie detection perspective, they were positive from an information-gathering perspective as the different phases generated a considerable number of new details. For truth tellers, the number of unique details provided in the interview went up from 39 in the free recall to 125 in the entire interview and for

lie tellers from 34 in the free recall to 107 in the entire interview. These are encouraging findings. Perhaps the most crucial aim of an interview is to generate information (Bull, 2010; Fisher, 2010) and CCA achieved that. This is also good news for lie detection. The more information an interviewee volunteers, the more opportunity for investigators to check the veracity status of the statement. Thus, although CCA did not increase the ability to distinguish between truth tellers and lie tellers during the interview when taking total details into account, it may facilitate lie detection after the interview when investigators have the opportunity to check the information provided.

Truth tellers reported more sources that could be verified than lie tellers. However, this was the case only for sources referring to the package and exchange, the aspects of the mission the lie tellers were instructed to lie about. This underlines our earlier conclusion, that the more truthful information lie tellers report, the more they will sound like truth tellers and the more difficult it will become to distinguish them from truth tellers. That verifiable sources discriminated truth tellers from lie tellers is in alignment with previous research (Leal, Vrij, Vernham, et al., 2018; Vrij, Leal, Deeb, et al., 2019) and good news for practitioners who are interested in the Verifiability Approach. Counting verifiable and unverifiable details, as advocated in the Verifiability Approach, is impossible to achieve for practitioners in real time, whereas they can count verifiable sources in real time. The same applies to the total details – complications comparison. Practitioners cannot count total details in real time, but they can count complications in real time.

Two methodological issues merit attention. First, we did not systematically manipulate the different interview techniques. This means that we cannot say anything about the relative impact of each of the techniques. That was not the aim of the experiment. We attempted to examine their combined effect on truth tellers' and lie tellers' responses, making a systematic manipulation unnecessary. Second, we did not vary the order in which the techniques were presented. We chose what we thought was the best and a natural order. Of course, not varying the order means that we cannot tell whether results would have been different if the techniques were introduced in a different order.

We think the present research can be extended in several ways. Creating a deception scenario in which (i) bluffing by lie tellers is less likely to occur and (ii) common knowledge details and self-handicapping strategies can be measured, will enhance our knowledge about the potential of CCA as a veracity assessment approach. In addition, manipulating the different techniques and order of the techniques will enhance our knowledge about the relative impact of each technique. Finally, the CCA interview protocol examined in this article requires asking interviewees to recall their accounts five times. Although this is possible in many applied settings, sometimes shorter protocols may be warranted. Further research could examine the efficacy of CCA when one or two techniques are left out.

Conflict of Interest

The authors of this article declare no conflict of interest.

Note

[1]The distinction between 'exchange and package' versus 'other' can also be made for details and complications. The results for details follow the same pattern of findings as reported in the main text. For complications, again the same pattern emerged as presented in the main text, but the effects were stronger for the 'exchange and package' complications than for the 'other' complications. The full description of the analyses is available from the first author.

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Appendix

The Interview Protocol

Q1. Please tell me in as much detail as possible everything you did from the moment you left this building to the moment you came back.

Thank you for that, I would now like you to tell me again, but this time, before doing so I would like to play you an audio clip which serves as an example of how many details I would like you to include in your response. The example I will play is a so called 'Model Statement' as it gives you an idea of a detailed response to a question. After listening to the example, I will ask you again about what happened during your mission, and would like you to be that detailed in your response ok?

Play Model Statement

Q2. Bearing in mind the amount of detail you heard in that clip, please tell me once more everything that happened from the moment you left the building till the moment you returned.

Q3. Thank you for that, what I would like to do now is ask you to recall your event in reverse order. I ask this because we know from memory research that recalling an event in reverse order aids memory recall. Therefore, I would like you to go back in your memory and recall the event once more but this time talk me back through from the moment you returned to the experimenter right back through to the moment you left the building to collect the package. Please take as much time as you need to prepare yourself for this and to recall the event in reverse order.

Q4. Thank you once again. Another aid to memory is drawing. I would therefore like you to go back in your memory to the moment you received the package. Please think about that specific moment and recall everything what you could see, what you could hear, what you could feel and what you could smell. OK? Now please draw for me what you could see at that moment and whilst doing so, talk me through everything you experienced. I realise that not everyone is good at drawing, so I would like you to talk to me whilst you draw so that I can understand your drawing.

Q5. What I would like you to do now is to talk me through the whole event one final time, but this time I would like you to help me out by including any details that you think I could verify – an example of a detail I could verify would be CCTV footage, official records such as receipts, people who you know by name and who saw you during the mission, etc. Does that make it clear what verifiable details are? OK, please talk me through the whole event once more, but this time, at each phase include any details I can verify.