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## Omission Lies: The Effect of Omitting Little or Much Information on Verbal Veracity Cues

Aldert Vrij<sup>1</sup>, Sharon Leal<sup>1</sup>, Haneen Deeb<sup>1</sup>, and Ronald P. Fisher<sup>2</sup>

<sup>1</sup>University of Portsmouth, UK; <sup>2</sup>Florida International University, USA

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### ABSTRACT

**Background:** People sometimes lie by deliberately leaving out information. Such omission lies can have different sizes: Lie tellers can deliberately omit less or more information. We examined the effect of omission size on verbal cues to deceit. **Method:** A total of 152 participants followed a target person during his mission in which he met two other persons. In the debrief interview, truth tellers reported all they could remember; small-omission lie tellers omitted one meeting and large-omission lie tellers omitted both meetings. The analyses focused on the parts of the mission all participants reported truthfully. We distinguished between essential information (parts of the mission surrounding the omission) and non-essential information (parts of the mission that were not close to the omission). We examined external, contextual, internal details, complications, common knowledge details, and self-handicapping strategies. We also measured participants' strategies. **Results:** Truth tellers reported more complications than both groups of lie tellers in both the essential and non-essential information parts. Lie tellers were more than truth tellers inclined to keep their story simple. **Conclusion:** It further supports the notion that omission lie tellers are inclined to keep their stories simple and that, perhaps because of that, complications emerged as a veracity indicator.

### Mentiras por omisión: efecto de la omisión de poca o mucha información en los indicios verbales de veracidad

### RESUMEN

**Antecedentes:** A veces las personas mienten deliberadamente omitiendo información. Las mentiras por omisión pueden tener tamaños diferentes: los mentirosos pueden omitir más o menos información a propósito. Analizamos el efecto del tamaño de la omisión en los indicios verbales asociados al engaño. **Método:** Un total de 152 participantes siguieron a un hombre durante una misión, en la que éste se encontró con otras dos personas. En la subsiguiente entrevista, a los que decían la verdad se les pidió que narraran todo lo que podían recordar y a los que mentaban con una ligera omisión que omitieran un encuentro y a los que mentaban con una gran omisión que omitieran ambos encuentros. Los análisis se centraron en las partes de misión que todos los participantes contaron con sinceridad. Se distingue entre información esencial (omisión de información adyacente a la misión) e información no esencial (omisión de información no adyacente a la misión). Se analizan los detalles externos, contextuales e internos, las complicaciones, detalles de conocimiento común y las estrategias de auto-justificación. También se midieron las estrategias de los participantes. **Resultados:** Los que decían la verdad informaron de más complicaciones que ambos grupos de mentirosos, tanto en las partes esenciales como en las no esenciales de la información. Los mentirosos tendían más que los sinceros a simplificar su relato. **Conclusión:** Se refuerza la idea de que los mentirosos tienden a simplificar su relato y que, tal vez por ese motivo, las complicaciones aparecían como indicadores de veracidad.

People sometimes lie by deliberately omitting information (DePaulo et al., 1996). They prefer telling such omission lies instead of fabricating details (Metts, 1989), and do so for different reasons (Levine et al., 2003; Vrij, 2008). Telling an omission lie is relatively easy, because lie tellers do not have to invent details that they may need to remember in case the topic of the lie arises later. Also, if

caught in telling an omission lie, lie tellers can claim to have forgotten to mention it, whereas it is more difficult to generate a plausible excuse if caught in telling a fabrication. Omission lies are also easier to justify morally to themselves. Lie tellers can justify omissions by thinking "Everything I said was truthful, I just didn't mention the 'whole' truth." Finally, lies are often detected because the information

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lie tellers provide includes leads that are shown to be incorrect by further checking. Omission lie tellers do not provide such false leads and they are therefore difficult to detect.

Independent evidence can sometimes be used to detect omission lies. Suppose an interviewee had lunch in a restaurant with someone else but does not mention this when reporting all his other activities during that day. If investigators possess independent evidence (e.g., through CCTV footage, named witness) showing that the interviewee had lunch with someone else in a restaurant that day, the failure to mention the lunch meeting could be the result of forgetting to mention it, but it could also indicate that the person is telling an omission lie (Granhag & Hartwig, 2015; Oleszkiewicz & Watson, 2021). If investigators do not possess independent evidence, they can ask interviewees to provide information that the investigators can check. Truth tellers are more likely than omission lie tellers to provide verifiable sources (“I had lunch with someone else in a restaurant. You can check with the owner, because he saw us there”) (Palena et al., 2021; Verschuere et al., 2021).

Suppose investigators are interested in what the two people discussed during lunch. CCTV footage showing that they had lunch together does not provide evidence about what they discussed and, if the conversation was not recorded, truth tellers are unlikely to be able to provide verifiable information about their conversation. Detecting omission lies using verbal veracity tools is challenging when no independent evidence is available or can be obtained because all the information omission lie tellers provide may be entirely truthful. Such lies can then be detected only if the truthful information omission lie tellers report reveals that they are lying. Research has shown that the truthful information omission lie tellers provide may contain verbal cues to deceit. Van Swol et al. (2012) examined linguistic cues (e.g., pronouns, negative emotion words, causation words) and compared two types of lie (false information lies and omission lies) with truth telling. Omission lie tellers used fewer causation words (words such as ‘because’, ‘effect’, ‘hence’) than the other participants; however, the study included only seven participants who reported false information. Four published experiments examined several types of detail (Leal et al., 2020; Leal, Vrij, Deeb, Burkhardt, et al., 2023; Leal, Vrij, Deeb, & Fisher, 2023, 2024). In these experiments, complications tellers (e.g., “I forgot my phone, so had to use my friend’s phone to call my mum”) emerged as the most diagnostic veracity cue. All four experiments showed that truth tellers provided more complications than lie tellers, a result also found in research when lie tellers provide false information (Vrij, Palena, et al., 2021).

### Verbal Cues to Omission Lies

We examined the same six verbal cues as Leal et al. (2024) in their omission lies experiment: external details, contextual details, internal details, complications, common knowledge details, and self-handicapping strategies. External details are perceptual details, contextual details are spatial and temporal details, and internal details are details about feelings. Complications are occurrences that make a statement more complex (e.g., “I forgot to bring my sandwiches into work so I had to go to the shop to buy new sandwiches”), common knowledge details refer to strongly invoked stereotypical (general) knowledge about the event (e.g., “He walked through the park and was looking at the birds”), and self-handicapping strategies are justifications as to why someone is not able to provide information (e.g., “I could not see what he was doing because I forgot to bring my glasses”).

All six cues have been found to discriminate between truth tellers and lie tellers when lie tellers fabricate information. Truth tellers typically report more details (Amado et al., 2016; Gancedo et al., 2019), more complications (Vrij, Palena, et al., 2021) and fewer common

knowledge details and self-handicapping strategies than lie tellers (Vrij, Palena, et al., 2021). These veracity effects are thought to be the result of the different strategies truth tellers and lie tellers use in interviews (Vrij, Granhag, et al., 2022). Truth tellers are typically willing to be forthcoming and ‘to tell it all’, whereas lie tellers prefer to keep their stories simple (Hartwig et al., 2007). This inclination to keep stories simple even occurs in omission lies scenarios when all the information lie tellers report can be entirely truthful (Leal, Vrij, Deeb, & Fisher, 2023, 2024). If lie tellers employ the same strategy in omission lies as they do when fabricating information, the same verbal veracity cues may emerge in omission lies as in false information lies.

If lie tellers keep their stories simple, they may be less inclined to include external, contextual, and internal details than would truth tellers, because the more information someone provides, the less simple a statement becomes. Keeping it simple may also be negatively associated with reporting complications and positively correlated with reporting common knowledge details and self-handicapping strategies. Adding complications in a statement is the opposite of keeping a story simple; reporting information in a general way (common knowledge details) and justifying why someone cannot give detailed information (self-handicapping strategies) are two possible ways to limit the number of details to report and, hence, keep the story simple.

When examining complications, common knowledge details and self-handicapping strategies, Vrij, Leal, Jupe, et al. (2018) introduced a new metric: the proportion of complications (the number of complications divided by the number of complications + number of common knowledge details + number of self-handicapping strategies). Given that truth tellers typically report more complications but fewer common knowledge details and fewer self-handicapping strategies than lie tellers, it is expected that the proportion of complications will be higher for truth tellers than for lie tellers.

### Small vs. Large Omission Lies

People can tell omission lies in different ways. This is the first experiment in which the type of omission lie was manipulated. We focused on the size (in terms of information left out) of the omission. The amount of information lie tellers deliberately omit from their statement may differ in size. If lie tellers deliberately leave out larger parts of an experience, they may feel the need to compensate for this by reporting many details about the parts of their experience they are willing to talk about. This would mean that they do not use a keeping-stories-simple strategy. In contrast, if the omission is small, lie tellers may not feel the need to compensate and may be inclined to use their preferred keeping-stories-simple strategy when discussing the experiences they are willing to talk about. This would mean that veracity differences are more likely to occur when comparing truth tellers with small-omission lie tellers than when comparing truth tellers with large-omission lie tellers.

### Hypotheses

The experimental design included three Veracity cells: truth tellers, small-omission lie tellers and large-omission lie tellers. We tested the following two pre-registered (<https://doi.org/10.17605/OSF.IO/FVBZN>) hypotheses:

*Hypothesis 1:* Lie tellers will report in the post-interview questionnaire that they used a ‘keep-it-simple’ strategy more than truth tellers, particularly in the small-omission lie condition.

*Hypothesis 2:* Truth tellers will report the most details (external, contextual, and internal) and complications, and will obtain the highest proportion of complications, whereas lie tellers in the small-omission lie condition will report the fewest details

(external, contextual, and internal) and complications, and will make the lowest proportion of complications.

### Essential vs. Nonessential Details Exploration

In the present experiment participants followed a target person. Lie tellers were asked to omit one key part of the event (small omission lie: the target meeting another person in the park) or two key parts of the event (large omission lie: target person meeting other persons [i] in the shopping centre and [ii] in the park). We explored the veracity differences when reporting what Leal et al. (2024) – and we in the Open Science Framework entry – labelled essential and non-essential information. Essential information is information about what happened just before and just after the parts the lie tellers were asked to omit (meeting other people). We label this essential information because lie tellers had to be careful when reporting those parts and avoid making slip-ups. Non-essential information is information about the other parts of the mission. All participants could report such non-essential information truthfully and since those events were not close in time to events lie tellers had to omit, they could report it without the risk of making any slip-ups. Leal et al. (2024) found veracity differences (for external details, contextual details, complications, and proportion of complications) in the essential details only, suggesting that the risk of slip-ups is associated with veracity cues in omission lies.

## Method

### Participants

A G\*Power analysis revealed that to obtain 99% power and a medium effect size ( $f^2 = 0.15$ ) at least 141 participants should be recruited, based on previous omission lies deception research (Leal et al., 2020; Leal, Vrij, Deeb, Burkhardt, et al., 2023; Leal, Vrij, Deeb, & Fisher, 2023). We recruited 157 participants, five of whom were discarded because they did not follow the instructions or the recording failed. The final sample of 152 participants included 95 females, 56 males and one non-binary person. The average age in the sample was  $M = 24.28$  ( $SD = 8.68$ ). The largest group of participants ( $n = 59$ ) were British, followed by Asian ( $n = 37$ ), European ( $n = 24$ ), African ( $n = 11$ ), Arab ( $n = 4$ ), and Caribbean ( $n = 3$ ) participants. The remaining participants ( $n = 15$ ) were of mixed origin. For 10 participants the highest level of education was O-levels. For the remaining participants the highest level of education was A-levels ( $n = 75$ ), Bachelors ( $n = 34$ ), Masters ( $n = 30$ ), or PhD ( $n = 3$ ). The experiment conformed with the principles of the Declaration of Helsinki and ethics approval was granted by the University Faculty's ethics committee (G-2023-084) and the sponsor's ethics committee (2023-12\_714-23).

All procedures performed in studies involving human participants were in accordance with the ethical standards of the institutional [University of Portsmouth Faculty of Science and Health Ethics Committee SHFEC C-2023-084] and the funding (HIG) research committee (2023-12\_714-23) and with the 1964 Helsinki declaration and its later amendments or comparable ethical standards. Informed consent was obtained from all individual participants included in the study.

### Design

Data were analysed with MANOVAs with Veracity (truth, small omission lie, large omission lie) as the only factor. Separate MANOVAs were carried out for the questionnaire variables, perceptions of the mission, deception strategies, and verbal veracity

cues. We also report Pearson correlations between the deception strategies and verbal veracity cues. The correlation between the verbal cues external details and complications was  $r = .59$ , which is just under the threshold commonly used ( $r = .60$ ) and well below .80 which indicates that multi-collinearity was not a problem (Midi et al., 2010). Both variables were therefore included in the same analysis.

### Materials

Participants completed a pre- and a post-interview questionnaire. The pre-interview questionnaire measured background characteristics (age, gender, ethnicity, and level of education), motivation to perform well during the interview, preparation thoroughness, and preparation time. The post-interview questionnaire measured percentage of truth telling during the interview, perceived likelihood of (i) having to write a statement, (ii) being entered into the prize draw, and (iii) winning the prize of the best surveillance officer, and rapport with the interviewer. It also measured the participants' self-reported deception strategies and their perceptions of the mission.

### Procedure

We recruited participants through the participant pool, departmental databases, and university portals. The study advertisement was entitled "Are you following me? Investigating credibility cues when individuals lie or tell the truth about a surveillance mission." It explained that the study would take 90 minutes to complete, that we were recruiting participants who were 18 years or older with a good grasp of English and that they would receive £15 or 1.5 course credits for taking part. It further explained the study in brief including that participants would be asked to follow a target person, be interviewed about it with the possibility to be asked to lie, and could win prizes for being a good surveillance officer and being convincing during the interview.

A date to take part in the experiment was arranged for people who wanted to participate. They were emailed at least 24 hours before they took part: 1) the participant information sheet and 2) the consent form. When participants arrived for the experiment in the University building, they were given the opportunity to discuss the participant information sheet and consent form with the experimenter and to ask any questions they might have. All participants were willing to continue and signed the consent form.

The experimenter then gave the following information: "I would like you to imagine that you are a new surveillance officer for the government. I am about to send you on a mission to follow this target of interest [experimenter showed picture of confederate]. We know that he usually wears a blue bandana on his wrist and that he goes out for a walk for about 20 minutes at this time of day. As with any surveillance operation, it is very important that you ensure that the target is unaware that you are following him. If the target was not aware that he was followed you will be entered into a draw for 'best surveillance officer' whereby you can win prizes worth £150 (first prize), £75 (second prize), or £50 (third prize). You will be interviewed what you have witnessed after completing the mission."

### The Surveillance Mission and Veracity Instructions

The mission included the target of interest leaving the University building walking to the shopping centre, where he meets a person (confederate 1) and receives a package from that person. The target then heads to the park where he goes to the animal enclosure and receives a phone call after which he meets another person (confederate 2) under the bridge to whom he hands the package. He

then returns to the University building. To add details to the mission, the target person (1) walks in one direction, stops, changes his mind, and then walks in the other direction; (2) bends down to tie his shoelaces; (3) goes briefly inside a shop; (4) frequently looks over his shoulder to see whether he is followed; and (5) stops to get money at a cash point.

After the participants completed the surveillance mission they returned to the lab. They were told that they would be interviewed by a security official regarding the surveillance mission they just have been on. Participants were then randomly assigned to the truth teller ( $n = 51$ ), small omission lie teller ( $n = 52$ ), and large omission lie teller ( $n = 49$ ) conditions. "Truth tellers" were asked to truthfully recall everything that they have witnessed. "Lie tellers in the small-omission condition" were told that the person who will interview them cannot be trusted, and that the person may be acting as a double agent. Participants were asked whether they witnessed the target person meeting other people (all lie tellers mentioned to have witnessed the two meetings). They were then told that it is 'vital' not to mention having witnessed the target of interest meeting the person in the park. Participants were further told that the interviewer knows they were on a surveillance mission to follow the target and that they can be truthful about everything else they witnessed during the surveillance task.

Lie tellers in the large-omission condition received the same instruction as the lie tellers in the small omission condition with one difference: they were told that it is vital not to mention the target witnessing meeting one person in the shopping centre and another person in the park.

All participants were then told that it is important to appear convincing. If the interviewer believed they were cooperative and telling the truth, they would be entered into a draw to win up to £150 in prize money. If the interviewer did not believe them, they would be asked to write a statement about what happened during the mission. Participants were then given time to prepare for the interview. They were given as much time as they wanted and were asked to let the experimenter know when they were ready to be interviewed.

### Pre-Interview Questionnaire

When participants told the experimenter that they were ready to be interviewed, they completed a pre-interview questionnaire. It measured, apart from background characteristics (age, gender, ethnicity, level of education), how motivated they were to perform well during the interview on a 5-point scale ranging from 1 (*not at all motivated*) to 5 (*very motivated*). It also measured their preparation thoroughness via three items (1 = *shallow* to 7 = *thorough*; 1 = *insufficient* to 7 = *sufficient*; and 1 = *poor* to 7 = *good*) (the three answers were averaged, Cronbach's  $\alpha = .90$ ) and preparation time through a single question: 'Do you think the amount of time you were given to prepare was' (1 = *insufficient* to 7 = *sufficient*).

### The Interview

The aim of the interview was to obtain a detailed account of the mission and consisted of three stages. The first stage was an initial free recall. This was followed by a Model Statement, an audio-recording of an event unrelated to the topic of investigation (Leal et al., 2015). A Model Statement typically raises expectations about how much information someone is expected to provide (Ewens et al., 2016; Vrij et al., 2017), and typically leads to additional information not provided in the first free recall (Vrij, Leal, & Fisher, 2018). We used the Model Statement from Leal et al. (2015). The Model Statement was followed by a second free recall. Stage 3 of the

interview was a request to talk the interviewer through two specific parts of the mission (taking money from the cash machine and what happened after the target received the phone call in the park) while sketching what they could experience at that time. Sketching while narrating often results in new information, particularly from truth tellers (Vrij et al., 2020; Vrij, Mann, et al. 2021). See Appendix 1 for a transcript of the interview protocol. All participants completed this three stages interview, and these stages were always completed in the same order. The lack of manipulation in the interview protocol means that no conclusions can be drawn about the effectiveness of each stage in eliciting information and verbal veracity cues. The results for the individual stages are therefore not further discussed but presented in the Supplementary Materials for information only.

### Post-interview Questionnaire

Participants completed a post-interview questionnaire after the interview. It measured the percentage of truth telling during the interview on an 11-point Likert scale ranging from 0% to 100%. It further measured the perceived likelihood of (i) having to write a statement, (ii) being entered into the prize draw, and (iii) winning the prize of the best surveillance officer on 7-point Likert scales from 1 (*not at all likely*) to 7 (*very likely*). Rapport with the interviewer 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 satisfied, awkward, friendly, and positive (Cronbach's  $\alpha = .90$ ).

Participants also completed the 21 item Deception Strategies Questionnaire (DSQ) (Leal, Vrij, Deeb, Fisher, et al., 2023) representing the (i) "tell it all", (ii) "keep it simple", and (iii) "demeanour" strategy. Answers were given on 7-point Likert scales ranging from 1 (*strongly disagree*) to 7 (*strongly agree*). The "tell it all" strategy consisted of six items including 'to report the mission in as much detail as possible' and 'to elaborate on specific details.' These six items were clustered into the "tell it all" index (Cronbach's  $\alpha = .67$ ). The "keep it simple" strategy consisted of eight items including 'to keep to the point' and 'to be brief and orderly.' These eight items were clustered into the "tell it all" index (Cronbach's  $\alpha = .76$ ). The "demeanour" strategy consisted of seven items, including 'to be consistent (stick with a story and don't change important elements within it)' and 'to sound confident.' These seven items were clustered into the "demeanour" index (Cronbach's  $\alpha = .73$ ). The demeanour strategy was included because it is a frequently cited strategy amongst truth tellers and lie tellers (Hartwig et al., 2007). Finally, participants were shown eight aspects of the mission (see Table 2) and asked for each aspect to rate its importance on 7-point scales ranging from 1 (*not at all important*) to 7 (*very important*).

### Debrief

After completing the post-interview questionnaire participants were given details on how to obtain payment or course credits. All participants were told that the interviewer believed them and that the target person did not notice that he was followed. As a result, all participants were entered into the two prize draws. The prize winners were randomly chosen. Participants also received a debrief form describing the aims of the experiment.

### Coding

The interview recordings were transcribed and the transcripts were used for coding. Each detail was coded once and all repetitions were ignored both within each interview stage as between the

**Table 1.** Questionnaire Variables Results as a Function of Veracity

Questionnaire variables	Truth tellers		Lie tellers: Small omission		Lie tellers: Large omission		<i>F</i>	<i>p</i>	$\eta_p^2$
	<i>M</i> ( <i>SD</i> )	95% CI	<i>M</i> ( <i>SD</i> )	95% CI	<i>M</i> ( <i>SD</i> )	95% CI			
Motivation (5-point scale)	4.55 (0.67)	4.37, 4.73	4.60 (0.66)	4.42, 4.77	4.63 (0.57)	4.45, 4.81	0.22	.805	.003
Preparation thoroughness (7-point scale)	5.31 (1.49)	4.94, 5.67	5.40 (1.20)	5.03, 5.76	5.17 (1.27)	4.80, 5.55	0.37	.689	.005
Preparation time (7-point scale)	6.39 (0.92)	6.11, 6.67	6.35 (0.99)	6.07, 6.62	6.22 (1.12)	5.94, 6.51	0.37	.695	.005
Truth telling (percentage)	95.69 <sup>3</sup> (10.25)	91.68, 99.69	78.27 <sup>2</sup> (16.42)	74.31, 82.23	70.41 <sup>1</sup> (15.94)	66.32, 74.49	40.21	< .001	.351
Likelihood to be entered into draw for being convincing in the interview (7-point scale)	4.78 (1.80)	4.31, 5.26	4.42 (1.85)	3.95, 4.90	4.04 (1.47)	3.56, 4.53	2.33	.101	.030
Likelihood to having to write a statement (7-point scale)	2.94 (1.71)	2.47, 3.41	3.02 (1.71)	2.55, 3.49	3.69 (1.67)	3.21, 4.17	2.95	.055	.038
Likelihood to win prize for the best surveillance officer (7-point scale)	3.55 <sup>1</sup> (2.28)	2.98, 4.12	3.46 <sup>1</sup> (2.05)	2.89, 4.03	2.59 <sup>1</sup> (1.85)	2.01, 3.18	3.25	.042	.042

Note. Only mean scores with a different superscript differed significantly ( $p < .05$ ) from each other.

interview stages. For example, if a detail was mentioned in both Stages 1 and 3, it would be coded only in Stage 1.

One rater, blind to the veracity conditions and hypotheses, coded external, contextual and internal details (Bogaard et al., 2019; Leal, Vrij, Deeb, & Fisher, 2023, 2024). “External details” is information regarding the event in question that was gained from the senses (e.g., describing who, what, and where). The phrase “A woman with long blond hair gave him an envelope” contains seven external details. “Contextual details” are descriptions of temporal or spatial relationships between objects and/or actors. The sentence “He went up the stairs and took a right” contains two contextual details. “Internal details” is information regarding the subjective mood of the interviewee. The sentence “He constantly looked over his shoulder which made me nervous” contains one internal detail. A second rater, blind to the veracity conditions and hypotheses, coded the external, contextual, and internal details of a random sample of 74 transcripts (49% of the total). Inter-rater reliability between the raters, using the two-way random effects model measuring consistency, was good for all three verbal cues: external details (single measures ICC = .70), contextual details (single measures ICC = .75), and internal details (single measures ICC = .83)

A third rater, blind to the veracity conditions and hypotheses, coded complications, common knowledge details and self-handicapping strategies (Vrij, Leal, Jupe, et al., 2018). A “complication” is an occurrence that affects the storyteller and makes a situation more complex. The sentence “I was too close to him so I pretended to go on my phone” contains two complications. The details that are included in complications are also coded as external, contextual, and internal details. Common knowledge details is information that refers to strongly invoked stereotypical knowledge about the event. The sentence “And then he walked through Victoria Park” contains one common knowledge detail. The details that are included in common knowledge details are also coded as external, contextual, and internal details. Self-handicapping strategies are justifications as to why someone is not able to provide information. The sentence “I did not see what he was doing because I took a picture of a pigeon that I was going to send to my mum” contains one self-handicapping strategy. The details that are included in a self-handicapping strategy are also coded as external, contextual, and internal details.

A fourth rater, blind to the veracity conditions and hypotheses, coded the complications, common knowledge details and self-handicapping strategies in all 152 transcripts (100% of the total). Inter-rater reliability between the raters, using the two-way random effects model measuring consistency, was good for all three verbal cues: complications (average measures ICC = .94), common knowledge details (average measures ICC = .63), and self-handicapping strategies (average measures ICC = .76).

The codings of the two raters were averaged and the averaged codings were used in the analyses. To reduce the number of tests in the

hypotheses-testing part of the experiment (and to increase statistical power) we report the results for “complications” and “proportion of complications” defined as complications / (complications + common knowledge details + self-handicapping strategies) in the Results section. We report the results for “common knowledge details” and “self-handicapping strategies” in Appendix 2.

## Results

### Questionnaire Variables

A MANOVA was carried out with Veracity (truth, small omission lie, large omission lie) as the only factor and the seven questionnaire variables listed in Table 1 as dependent variables. The multivariate Veracity main effect was significant,  $F(14, 288) = 5.82$ ,  $p < .001$ ,  $\eta_p^2 = .22$ . The Veracity univariate main effects are presented in Table 1.

Only the effect for the percentage truth telling was significant. Tukey post-hoc tests revealed that truth tellers reported to have told the truth more than lie tellers in the small ( $d = 1.27$  [0.83, 1.67]) and large ( $d = 1.89$  [1.40, 2.34]) omission lies conditions. In addition, participants in the small omission condition reported to have told the truth more than participants in the large omission condition ( $d = 0.49$  [0.08, 0.87]). This means that the manipulation was successful and that lie tellers consider deliberately omitting information as lying. The percentage truth telling amongst truth tellers was very high ( $M = 95.69$ ,  $SD = 10.25$ ), but the percentage truth telling in the small ( $M = 78.27$ ,  $SD = 16.42$ ) and large omission lies ( $M = 70.41$ ,  $SD = 15.94$ ) conditions were also high. This supports the notion that lie tellers are largely truthful when telling omission lies.

The average mean scores indicate that participants in all three conditions were highly motivated to perform well during the interview ( $M = 4.55$ ,  $SD = 0.67$ ), or higher in each of the three conditions on a 5-point scale. They also thought they were well prepared for the interview ( $M = 5.17$ ,  $SD = 1.27$ ), or higher in each of the three conditions on a 7-point scale, and were given sufficient time to prepare for the interview ( $M = 6.22$ ,  $SD = 1.12$ ) or higher in each of the three conditions on a 7-point scale.

We asked the two groups of lie tellers how much information they felt they had omitted. Participants in the large-omission condition ( $M = 3.78$ ,  $SD = 1.43$ , 95% CI [3.34, 4.21]) reported to have omitted significantly more information than participants in the small-omission condition ( $M = 2.87$ ,  $SD = 1.63$ , 95% CI [2.44, 3.29]),  $F(1, 99) = 8.82$ ,  $p = .004$ ,  $d = 0.58$  [0.18, 0.98]. This suggests that the small-large omission manipulation was successful. However, even in the large omission condition participants did not feel they had omitted much information.

A MANOVA was carried out with Veracity (truth, small omission lie, large omission lie) as the only factor and the eight questions

**Table 2.** Perceptions of the Mission as a Function of Veracity

	Truth tellers		Lie tellers: Small omission		Lie tellers: Large omission		<i>F</i>	<i>p</i>	$\eta_p^2$
	<i>M</i> ( <i>SD</i> )	95% CI	<i>M</i> ( <i>SD</i> )	95% CI	<i>M</i> ( <i>SD</i> )	95% CI			
Importance of target person	5.69 (1.84)	5.16,6.21	5.31 (1.96)	4.79, 5.83	5.20 (1.92)	4.67, 6.74	0.90	.410	.012
Going wrong way and turning back	3.39 (2.34)	2.76,4.02	3.23 (2.33)	2.61, 3.86	2.84 (2.16)	2.19, 3.48	0.78	.460	.010
Tying shoelaces	6.33 (1.23)	6.03,6.64	6.65 (0.62)	6.35, 6.96	6.20 (1.37)	5.89, 6.52	2.20	.115	.029
Looking around a lot	6.57 (1.17)	6.25,6.89	6.31 (1.23)	5.99, 6.62	6.39 (1.04)	6.06, 6.71	0.69	.502	.009
Receiving a call at the cash machine	6.02 (1.77)	5.60,6.44	6.13 (1.57)	5.71, 6.56	6.18 (1.19)	5.75, 6.62	0.15	.859	.002
Getting money from the cash machine	6.63 (0.98)	6.39,6.87	6.77 (0.68)	6.53, 7.01	6.76 (0.90)	6.51, 7.00	0.42	.658	.006
Meeting person in the shopping centre	6.22 (1.68)	5.77,6.67	6.21 (1.47)	5.77, 6.66	5.92 (1.73)	5.46, 6.38	0.55	.580	.007
Receiving a call in the park	6.35 (1.51)	5.99,6.71	6.40 (1.40)	6.05, 6.76	6.76 (1.31)	6.39, 7.12	1.40	.249	.018
Meeting a person in the park									

**Table 3.** Pearson Correlations between the Reported Strategies and Verbal Cues

Verbal cue	Keeping-it-simple	Telling-it-all	Demeanour
	<i>r</i> ( <i>p</i> )	<i>r</i> ( <i>p</i> )	<i>r</i> ( <i>p</i> )
External details	-.23 (.004)*	.01(.899)	-.04(.649)
Contextual details	-.11(.186)	-.05(.530)	-.01(.879)
Internal details	-.07(.371)	-.02(.850)	-.17(.039)*
Complications	-.25(.002)*	-.07(.381)	-.17(.041)*
Common knowledge details	.19(.019)*	-.12(.129)	-.11(.177)
Self-handicapping strategies	.13(.121)	-.05(.531)	-.06(.471)

about the importance of aspects of the mission as dependent variables. The multivariate effect was not significant,  $F(16, 284) = 1.05$ ,  $p = .405$ ,  $\eta_p^2 = .06$ . Table 2 shows that none of the univariate effects were significant either. Table 2 shows that, apart from tying shoelaces, participants thought that all other mission parts were important, including the parts lie tellers were asked to omit (meeting persons in the shopping centre and park).

### Correlations between Strategies and Dependent Variables

Table 3 presents the Pearson correlations between the three deception strategies and the six verbal cues. The keeping-it-simple strategy correlated with three dependent variables. The more participants were inclined to keep their stories simple, the fewer external details and complications and the more common knowledge details they reported. In addition, paying attention to demeanour was negatively correlated with reporting complications and internal details.

### Details in the Omission Part

Truth tellers were instructed to report the entire mission; small-omission lie tellers were instructed to omit one part of the mission (meeting another person in the park); and large-omission lie tellers were instructed to omit two parts of the mission (meeting one person in the shopping centre and another person in the park). In the hypotheses-testing part of the analyses, we included only the information all participants could report and therefore excluded the information interviewees reported about meeting the two people in the shopping centre and park. None of the large-omission lie tellers

mentioned the two meetings. When reporting these meetings, none of the truth tellers and small-omission lie tellers provided any complications, common knowledge details, and self-handicapping strategies. However, they reported external, contextual and internal details. We carried out three between-subjects ANOVAs with the external, contextual and internal details truth tellers and small omission lie tellers did report. The results are presented in Table 4.

Truth tellers reported more external and contextual information about the meetings than small omission lie tellers. This makes sense as truth tellers reported meetings with two people and small omission lie tellers reported a meeting with only one other person (because they omitted information about meeting the second person). No difference emerged in reporting internal details, most likely because such details were rarely reported (floor effect).

### Hypothesis Testing

We carried out frequentist analyses and Bayesian analyses to test the two hypotheses. Bayesian analyses test the likelihood of the data under both the null hypothesis ( $H_0$ ) and the alternative hypothesis ( $H_1$ ) (Jarosz & Wiley, 2014). A Bayes factor ( $BF_{10}$ ) between 1 and 3 indicates weak evidence for  $H_1$ , between 3 and 20 indicates positive evidence, between 20 and 150 indicates strong evidence, and above 150 indicates very strong evidence for  $H_1$  (Jarosz & Wiley, 2014). A Bayes factor close to 1 means no evidence can be derived from the data for either  $H_0$  or  $H_1$ . The inverse of  $BF_{10}$  is  $BF_{01}$  ( $1/BF_{10}$ ), which is the likelihood of supporting evidence for  $H_0$  compared to  $H_1$ . We report only  $BF_{10}$  statistics because  $BF_{01}$  can be inferred by inverting  $BF_{10}$ .

A MANOVA was carried out with Veracity (truth, small omission lie, large omission lie) as the only factor and the three deception strategies

**Table 4.** Univariate Results for the Details Reported by Truth Tellers and Small Omission Lie Tellers in the Parts Large Omission Lie Tellers were Instructed to Omit

Detail type <i>M</i> ( <i>SD</i> )	Truth tellers		Lie tellers: Small omission		<i>F</i>	<i>p</i>	<i>d</i>
	95% CI	<i>M</i> ( <i>SD</i> )	95% CI				
External details	10.90 (7.49)	9.23, 12.58	5.96 (4.14)	4.30, 7.62	17.24	< .001	0.82 [0.40, 1.21]
Contextual details	2.37 (2.20)	1.88, 2.86	1.04 (1.19)	0.55, 1.52	14.75	< .001	0.75 [0.34, 1.14]
Internal details	0.04 (0.20)	0.001, 0.08	0.00 (0.00)	-0.04, 0.04	2.08	.152	0.28 [-0.11, 0.67]

**Table 5.** Deception Strategy Questionnaire Results as a Function of Veracity

Deception strategy	Truth tellers		Lie tellers: Small omission		Lie tellers: Large omission		<i>F</i>	<i>p</i>	$\eta_p^2$	$BF_{10}$
	<i>M</i> ( <i>SD</i> )	95% CI	<i>M</i> ( <i>SD</i> )	95% CI	<i>M</i> ( <i>SD</i> )	95% CI				
Keeping it simple (7-point scale)	4.17 <sup>1</sup> (1.26)	3.86, 4.49	4.46 <sup>1,2</sup> (1.26)	4.15, 4.78	4.76 <sup>2</sup> (0.86)	4.43, 5.08	3.200	.043	.041	0.98
Tell it all (7-point scale)	4.78 (1.02)	4.48, 5.08	4.85 (1.11)	4.55, 5.15	4.76 (1.14)	4.45, 5.06	0.100	.908	.001	0.07
Demeanour (7-point scale)	5.23 (1.07)	4.95, 5.51	5.41 (1.10)	5.14, 5.68	5.50 (0.79)	5.22, 5.78	0.941	.393	.012	0.15

Note. Only mean scores with a different superscript differed significantly ( $p < .05$ ) from each other.

**Table 6.** Univariate results for the Verbal Cues as a Function of Veracity

Verbal cue	Truth tellers		Lie tellers: Small omission		Lie tellers: Large omission		<i>F</i>	<i>p</i>	$\eta_p^2$	$BF_{10}$
	<i>M</i> ( <i>SD</i> )	95% CI	<i>M</i> ( <i>SD</i> )	95% CI	<i>M</i> ( <i>SD</i> )	95% CI				
External details	77.61 (26.52)	70.29, 84.93	67.84 (23.40)	60.60, 75.10	70.24 (29.30)	62.78, 77.71	1.89	.154	.025	0.33
Contextual details	40.33 (18.25)	35.33, 45.34	38.71 (16.48)	33.76, 43.67	37.65 (19.46)	32.55, 42.76	0.28	.756	.004	0.08
Internal details	1.45 (1.86)	1.03, 1.87	0.88 (1.53)	0.47, 1.30	0.71 (1.02)	0.29, 1.14	3.27	.041	.042	1.04
Complications	10.04 <sup>2</sup> (7.17)	8.58, 11.50	4.48 <sup>1</sup> (4.03)	3.04, 5.93	5.09 <sup>1</sup> (3.95)	3.60, 6.58	17.01	<.001	.186	1.725 x 10 <sup>5</sup>
Proportion of complications	0.88 <sup>2</sup> (0.17)	0.82, 0.95	0.62 <sup>1</sup> (0.28)	0.55, 0.68	0.58 <sup>1</sup> (0.26)	0.51, 0.65	23.51	<.001	.240	1.254 x 10 <sup>7</sup>

Note. Only mean scores with a different superscript differed significantly ( $p < .05$ ) from each other.

presented in Table 5 as dependent variables. The multivariate effect was not significant,  $F(6, 296) = 1.14$ ,  $p = .340$ ,  $\eta_p^2 = .02$ . Hypothesis 1 referred only to the keep-it-simple strategy. The univariate effect for that strategy was significant, but the Bayes factor analysis showed no evidence for this effect (see Table 5).

A Tukey posthoc test showed a significant effect for the truth tellers – large omission lie tellers comparison ( $p = .032$ ) with large omission lie tellers more than truth tellers reported to have kept their stories simple. The effect size for this effect was medium ( $d = 0.54$  [0.14, 0.94]) and the evidence positive ( $BF_{10} = 4.85$ ). Hypothesis 1 predicted a difference between truth tellers and small lie tellers. That difference was not significant ( $p = 0.383$ ,  $d = 0.24$  [-0.15, 0.62]). We therefore found no support for Hypothesis 1.

A MANOVA was carried out with Veracity (truth, small omission lie, large omission lie) as the only factor and the five verbal cues presented in Table 6 as dependent variables. The multivariate Veracity main effect was significant,  $F(10, 290) = 6.67$ ,  $p < .001$ ,  $\eta_p^2 = .19$ .

Table 6 shows significant Veracity effects for internal details, complications and proportion of complications. The Bayes factor analyses showed very strong evidence for the complications and proportion of complications effect but weak evidence for the internal details effect. The latter effect will therefore not be discussed. Tukey posthoc tests showed that truth tellers reported significantly more complications than both groups of lie tellers (both  $ps < .001$ ), whereas

the two groups of lie tellers did not differ from each other ( $p = .830$ ). The effect sizes were large and the evidence very strong for the differences between truth tellers and small omission lie tellers ( $d = 0.96$  [0.54, 1.35],  $BF_{10} = 3.016 \times 10^4$ ) and between truth tellers and large omission lie tellers ( $d = 0.85$  [0.43, 1.25],  $BF_{10} = 414.96$ ).

Tukey posthoc tests further showed that the proportion of complications was significantly higher for truth tellers than for both groups of lie tellers (both  $ps < .001$ ), whereas the two groups of lie tellers did not differ from each other ( $p = .742$ ). The effect sizes were large and the evidence very strong for the differences between truth tellers and small omission lie tellers ( $d = 1.12$  [0.69, 1.52],  $BF_{10} = 6.794 \times 10^6$ ) and between truth tellers and large omission lie tellers ( $d = 1.37$  [0.92, 1.79],  $BF_{10} = 7.665 \times 10^8$ ). Hypothesis 2 predicted the results we found for complications and proportion of complications when comparing truth tellers with lie tellers, but the predicted difference between small omission and large omission lie tellers was not found. We therefore found only partial support for Hypothesis 2.

Appendix 2 shows the statistical information for the common knowledge details and self-handicapping strategies. Only the effect for common knowledge details was significant. Tukey posthoc tests showed that truth tellers reported fewer common knowledge details than both groups of lie tellers (both  $ps < .001$ ). In addition, small-omission lie tellers reported fewer common knowledge details than large-omission lie tellers ( $p = .007$ ). The effect sizes

**Table 7.** Univariate results for the Verbal Cues as a Function of Veracity for Non-Essential and Essential Details Separately

Verbal cues	Truth tellers		Lie tellers: Small omission		Lie tellers: Large omission		<i>F</i>	<i>p</i>	$\eta_p^2$	$BF_{10}$
	<i>M</i> ( <i>SD</i> )	95% CI	<i>M</i> ( <i>SD</i> )	95% CI	<i>M</i> ( <i>SD</i> )	95% CI				
Non-essential details										
External details	55.90 (20.35)	50.06, 61.75	47.38 (19.27)	41.60, 53.17	48.71 (23.65)	42.75, 54.68	2.40	.094	.031	0.50
Contextual details	26.75 (13.30)	23.08, 30.41	25.48 (11.95)	21.85, 29.11	24.96 (14.48)	21.22, 28.70	0.24	.786	.003	0.08
Internal details	0.98 (1.35)	0.66, 1.30	0.65 (1.33)	0.33, 0.97	0.35 (0.69)	0.02, 0.68	3.67	.028	.047	1.45
Complications	6.50 <sup>2</sup> (5.13)	5.51, 7.50	2.67 <sup>1</sup> (2.26)	1.69, 3.66	3.30 <sup>1</sup> (2.69)	2.28, 4.31	16.67	<.001	.183	2.432 x 10 <sup>5</sup>
Proportion of complications	0.92 <sup>2</sup> (0.17)	0.85, 0.99	0.73 <sup>1</sup> (0.30)	0.67, 0.80	0.76 <sup>1</sup> (0.27)	0.69, 0.83	7.84	<.001	.095	46.33
Essential details										
External details	21.71 (9.23)	19.22, 24.19	20.46 (8.35)	18.00, 22.93	21.53 (9.38)	18.99, 24.07	0.29	.750	.004	0.08
Contextual details	13.59 (6.65)	11.78, 15.40	13.23 (6.28)	11.44, 15.02	12.69 (6.68)	10.85, 14.54	0.24	.790	.003	0.08
Internal details	0.47 (0.86)	0.28, 0.66	0.23 (0.51)	0.04, 0.42	0.37 (0.64)	0.18, 0.56	1.60	.205	.021	0.26
Complications	3.54 <sup>2</sup> (3.09)	2.88, 4.20	1.81 <sup>1</sup> (2.18)	1.16, 2.46	1.80 <sup>1</sup> (1.62)	1.12, 2.47	9.02	<.001	.108	122.35
Proportion of complications	0.83 <sup>2</sup> (0.24)	0.74, 0.92	0.49 <sup>1</sup> (0.37)	0.41, 0.58	0.43 <sup>1</sup> (0.30)	0.34, 0.52	24.52	<.001	.248	6.072 x 10 <sup>8</sup>

Note. Only mean scores with a different superscript differed significantly ( $p < .05$ ) from each other.

were large and the evidence very strong for the differences between truth tellers and small omission lie tellers ( $d = 0.96$  [0.54, 1.36],  $BF_{10} = 3.892 \times 10^4$ ) and between truth tellers and large omission lie tellers ( $d = 1.49$  [1.03, 1.91],  $BF_{10} = 4.669 \times 10^9$ ). The effect size for the small omission – large omission lie difference was medium and the evidence positive ( $d = 0.56$  [0.15, 0.95],  $BF_{10} = 8.82$ ).

### Exploratory Analyses: Non-Essential vs. Essential Information

Two MANOVAs were carried out with Veracity (truth, small omission lie, large omission lie) as the only factor and the five verbal cues reported in Table 7 as dependent variables. One analysis included the non-essential information and the other analysis the essential information. The multivariate effect for the non-essential information analysis was significant,  $F(10, 290) = 4.59$ ,  $p < .001$ ,  $\eta_p^2 = .14$ . The univariate effects for internal details, complications and proportion of complications were significant (see Table 7). The Bayes factors showed very strong evidence for the complications effect and strong evidence for the proportion of complications effect, but weak evidence for the internal details effect. The latter effect will therefore not be discussed.

Tukey posthoc tests showed that truth tellers reported significantly more complications than both groups of lie tellers (both  $ps < .001$ ), whereas the two groups of lie tellers did not differ from each other ( $p = .660$ ). The effect sizes were large and the evidence, respectively, very strong and strong for the differences between truth tellers and small omission lie tellers ( $d = 0.97$  [0.55, 1.36],  $BF_{10} = 2.647 \times 10^4$ ) and between truth tellers and large omission lie tellers ( $d = 0.78$  [0.36, 1.17],  $BF_{10} = 127.93$ ).

Tukey posthoc tests further showed that the proportion of complications was significantly higher for truth tellers than for small omission lie tellers ( $p = .001$ ) and large omission lie tellers ( $p = .006$ ), whereas the two groups of lie tellers did not differ from each other ( $p = .881$ ). The effect sizes were large and the evidence strong for the differences between truth tellers and small omission lie tellers ( $d = 0.78$  [0.37, 1.17],  $BF_{10} = 105.40$ ) and between truth tellers and large omission lie tellers ( $d = 0.71$  [0.30, 1.11],  $BF_{10} = 40.05$ ).

The multivariate effect for the essential information analysis was significant,  $F(10, 290) = 5.38$ ,  $p < .001$ ,  $\eta_p^2 = .16$ . The univariate effects for complications and proportion of complications were significant and the Bayes factor showed very strong evidence for the complications effect and strong evidence for the proportion of complications effect.

Tukey posthoc tests showed that truth tellers reported significantly more complications than both groups of lie tellers (both  $ps < .001$ ), whereas the two groups of lie tellers did not differ from each other ( $p = 1.00$ ). The effect sizes were medium and the evidence strong for the differences between truth tellers and small omission lie tellers ( $d = 0.65$  [0.24, 1.03],  $BF_{10} = 22.89$ ) and between truth tellers and large omission lie tellers ( $d = 0.70$  [0.29, 1.09],  $BF_{10} = 41.87$ ).

Tukey posthoc tests further showed that the proportion of complications was significantly higher for truth tellers than for both groups of lie tellers ( $p < .001$ ), whereas the two groups of lie tellers did not differ from each other ( $p = .572$ ). The effect sizes were large and the evidence very strong for the differences between truth tellers and small omission lie tellers ( $d = 1.09$  [0.66, 1.49],  $BF_{10} = 2.470 \times 10^5$ ) and between truth tellers and large omission lie tellers ( $d = 1.48$  [1.01, 1.89],  $BF_{10} = 9.482 \times 10^9$ ).

Appendix 2 shows the statistical information for the common knowledge details and self-handicapping strategies. Only the effect for common knowledge details in the essential information was significant and the Bayes factors showed very strong evidence for this effect. Tukey posthoc tests showed that truth tellers reported fewer common knowledge details than both groups of lie tellers (both  $ps < .001$ ), whereas small omission lie tellers reported fewer common knowledge details than large omission lie tellers ( $p =$

.007). The effect sizes were large and the evidence very strong for the differences between truth tellers and small omission lie tellers ( $d = 0.99$  [0.57, 1.39],  $BF_{10} = 2.749 \times 10^4$ ) and between truth tellers and large omission lie tellers ( $d = 1.73$  [1.25, 2.16],  $BF_{10} = 4.493 \times 10^{10}$ ). The effect size for the small omission – large omission lie difference was large and the evidence strong ( $d = 0.70$  [0.29, 1.09],  $BF_{10} = 59.64$ ).

### Discussion

Truth tellers reported more complications than large- and small-omission lie tellers. Truth tellers reporting more complications than lie tellers was also found in each of the previous four omission lies experiments in which complications were examined (Leal et al., 2020; Leal, Vrij, Deeb, Burkhardt, et al., 2023; Leal, Vrij, Deeb, & Fisher, 2023, 2024). Our complications result therefore strengthens the notion that complications is a diagnostic veracity indicator in omission lies. In the only other experiment in which a distinction was made between essential and non-essential information (Leal et al., 2024), the complication effect emerged only for essential details. In the present experiment it emerged for both essential and non-essential details. The findings for non-essential details are remarkable because these details are about parts of the mission unrelated to the parts of the mission the omission lie tellers were asked to omit. In other words, lie tellers could discuss these parts freely without any chance of a slip-up. Yet they reported fewer complications than truth tellers when discussing these non-essential parts of the mission. Truth tellers also typically report more complications than lie tellers when telling fabrication lies (Vrij, Palena, et al., 2021). This means that the same veracity cue (complications) emerges in both omission and fabrication lies. This is good news for investigators, because they would not know beforehand what type of lie someone will tell; however, since complications emerges in both types of lie, this is irrelevant when investigators use complications as a veracity indicator.

No veracity effect emerged for total details. The previous omission lie experiments that examined details showed mixed results. No difference between truth tellers and lie tellers was also obtained by Leal et al. (2020), whereas in another experiment lie tellers reported more details than truth tellers (Leal, Vrij, Deeb, Burkhardt, et al., 2023). The effect predicted in our Hypothesis 2 -truth tellers report more details than lie tellers- was found twice (Leal, Vrij, Deeb, & Fisher, 2023, 2024), although Leal et al. (2024) found this effect only for the essential details. In the present experiment a null finding emerged for both non-essential and essential details. The results to date thus show a conflicting pattern and suggest that details is an unreliable veracity indicator for omission lies. The omission lies results therefore differ from the fabrication lies results, because the number of details typically emerges as a diagnostic veracity indicator in fabrication lies (Amado et al., 2016; Gancedo et al., 2021). Since practitioners do not know what type of lie someone tells, it is probably best not to consider the total number of details provided when assessing veracity in interviews. We do not find this problematic, as concerns have been raised about using total details as a veracity cue (Vrij et al., 2023). Perhaps the main concern is that the cue is sensitive to countermeasures. If investigators consider the number of details provided when making veracity judgements regardless of the type of detail, lie tellers just have to talk to come across as sincere.

Common knowledge details, but not self-handicapping strategies, emerged as a veracity indicator, with small and large omission lie tellers reporting more common knowledge details than truth tellers when discussing essential details. In the only other omission lies experiment in which common knowledge details and self-handicapping strategies were measured (Leal et al., 2024) the exact same finding emerged. More research is required but it would be good news if common knowledge details is a diagnostic



veracity indicator in omission lies. Common knowledge details is a cue to deception (lie tellers report such details more than truth tellers), whereas the other diagnostic veracity cue that emerged in the experiment (complications) is a cue to truthfulness (truth tellers report more complications than lie tellers). Investigators can be more confident that someone is lying if the absence of cues to truthfulness (complications) is associated with the presence of cues to deceit (common knowledge details) rather than just relying on the absence of cues to truthfulness or the presence of cues to deceit.

We based our hypothesis regarding the veracity differences for details and complications on the assumption that lie tellers prefer to keep their stories simpler than truth tellers. The self-report results showed this to be the case. In the other two omission lies experiments where deception strategies were measured it was also found that lie tellers prefer to keep their stories simpler than truth tellers (Leal, Vrij, Deeb, & Fisher, 2023, 2024). However, in the other two experiments truth tellers reported more details than lie tellers, whereas we found a null effect in the present experiment. The null finding was unexpected because the tendency to keep a story simple was negatively correlated with reporting details (and positively correlated with reporting complications). The negative correlation was small ( $r = -.23$ ) and perhaps a stronger negative correlation is required for the strategy to keep a story simple to result in reporting fewer details.

The results for the small and large omission lies conditions were very similar, which means that the small-large omission manipulation had hardly any effect. Only one difference between the two lie conditions emerged with large omission lie tellers reporting more common knowledge details than small omission lie tellers. None of the verbal cues included in Hypothesis 2 (external, contextual and internal details, complications and proportion of complications) were affected by the small-large omission manipulation. On the one hand, the manipulation was successful because large omission lie tellers reported that they felt to have omitted more information than the small omission lie tellers. On the other hand, however, the manipulation was unsuccessful because even large omission lie tellers did not think that they omitted much information ( $M = 3.78$  on a 7-point scale). It is worth examining whether differences emerge between the two groups of lie tellers when the large omission lie tellers are requested to omit more information than they were requested to do in the present experiment.

Despite the absence of effects between the two groups of lie tellers, we believe that the experiment advanced our knowledge about omission lies. It further supports the notion that omission lie tellers are inclined to keep their stories simple. Perhaps because of that, complications emerged as a veracity indicator because reporting complications are the opposite of keeping a story simple. Lie tellers even reported fewer complications when reporting the non-essential parts of the mission where they could speak the truth freely without running the risk of a slip-up. Omission lies is an important but neglected area of deception research. More research is needed, including research examining whether different types of omission lies people tell affect verbal veracity indicators.

### Conflict of Interest

The authors of this article declare no conflict of interest.

### References

- Amado, B. G., Arce, R., Fariña, F., & Vilarino, M. (2016). Criteria-based content analysis (CBCA) reality criteria in adults: A meta-analytic review. *International Journal of Clinical and Health Psychology, 16*(2), 201-210. <https://doi.org/10.1016/j.ijchp.2016.01.002>
- Bogaard, G., Colwell, K., & Crans, S. (2019). Using the reality interview improves the accuracy of the criteria-based content analysis and reality monitoring. *Applied Cognitive Psychology, 33*(6), 1018-1031. <https://doi.org/10.1002/acp.3537>
- DePaulo, B. M., Kashy, D. A., Kirkendol, S. E., Wyer, M. M., & Epstein, J. A. (1996). Lying in everyday life. *Journal of Personality and Social Psychology, 70*(5), 979-995. <https://doi.org/10.1037/0022-3514.70.5.979>
- Ewens, S., Vrij, A., Leal, S., Mann, S., Jo, E., Shaboltas, A., Ivanova, M., Granskaya, J., & Houston, K. (2016). Using the model statement to elicit information and cues to deceit from native speakers, non-native speakers and those talking through an interpreter. *Applied Cognitive Psychology, 30*(6), 854-862. <https://doi.org/10.1002/acp.3270>
- Gancedo, Y., Fariña, F., Seijo, D., Vilarino, M., & Arce, R. (2021). Reality monitoring: A meta-analytical review for forensic practice. *European Journal of Psychology Applied to Legal Context, 13*(2), 99-110. <https://doi.org/10.5093/ejpalc2021a10>
- Granhag, P. A., & Hartwig, M. (2015). The Strategic Use of Evidence (SUE) technique: A conceptual overview. In P. A. Granhag, A. Vrij, & B. Verschuere (Eds.), *Deception detection: Current challenges and new approaches* (pp. 231-251). Wiley.
- Hartwig, M., Granhag, P. A., & Strömwall, L. (2007). Guilty and innocent suspects' strategies during police interrogations. *Psychology, Crime & Law, 13*(2), 213-227. <https://doi.org/10.1080/10683160600750264>
- Jarosoz, A. F., & Wiley, J. (2014). What are the odds? A practical guide to computing and reporting Bayes factors. *The Journal of Problem Solving, 7*(1), 2-9. <https://doi.org/10.7771/1932-6246.1167>
- Leal, S., Vrij, A., Deeb, H., Burkhardt, J., Dabrowna, O., & Fisher, R. P. (2023). Lying through omitting information: Examining the effect of a Model Statement interview protocol on verbal cues to deceit. *European Journal of Psychology Applied to Legal Context, 15*(1), 1-8. <https://doi.org/10.5093/ejpalc2023a1>
- Leal, S., Vrij, A., Deeb, H., & Fisher, R. P. (2023). Interviewing to detect omission lies. *Applied Cognitive Psychology, 37*(1), 26-41. <https://doi.org/10.1002/ACP.4020>
- Leal, S., Vrij, A., Deeb, H., & Fisher, R. P. (2024). Verbal cues in omission lies: The effect of informing sources about the essential part of the event. *Applied Cognitive Psychology, 38*(4), e4232. <https://doi.org/10.1002/acp.4232>
- Leal, S., Vrij, A., Deeb, H., Hudson, C., Capuzzo, P., & Fisher, R. P. (2020). Verbal cues to deceit when lying through omitting information. *Legal and Criminological Psychology, 25*(2), 278-294. <https://doi.org/10.1111/lcrp.12180>
- Leal, S., Vrij, A., Warmelink, L., Vernham, Z., & Fisher, R. (2015). You cannot hide your telephone lies: Providing a model statement as an aid to detect deception in insurance telephone calls. *Legal and Criminological Psychology, 20*(1), 129-146. <https://doi.org/10.1111/lcrp.12017>
- Levine, T. R., Asada, K. J. K., & Lindsey, L. L. M. (2003). The relative impact of violation type and lie severity on judgments of messages' deceptiveness. *Communication Research Reports, 20*(3), 208-218. <https://doi.org/10.1080/08824090309388819>
- Metts, S. (1989). An exploratory investigation of deception in close relationships. *Journal of Social and Personal Relationships, 6*(2), 159-179. <https://doi.org/10.1177/026540758900600202>
- Midi, H., Sarkar, S. K., & Rana, S. (2010). Collinearity diagnostics of binary logistic regression model. *Journal of Interdisciplinary Mathematics, 13*(3), 253-267. <https://doi.org/10.1080/09720502.2010.10700699>
- Oleszkiewicz, S., & Watson, S. J. (2021). A meta-analytic review of the timing for disclosing evidence when interviewing suspects. *Applied Cognitive Psychology, 35*(2), 342-359. <https://doi.org/10.1002/acp.3767>
- Palena, N., Caso, L., Vrij, A., & Nahari, G. (2021). The verifiability approach: A meta-analysis. *Journal of Applied Research in Memory and Cognition, 10*(1), 155-166. <https://doi.org/10.1037/h0101785>
- Vallano, J. P., & Schreiber Compo, N. (2011). A comfortable witness is a good witness: Rapport-building and susceptibility to misinformation in an investigative mock-crime interview. *Applied Cognitive Psychology, 25*(6), 960-970. <https://doi.org/10.1002/acp.1789>
- Van Swol, L. M., Braun, M. T., & Malhotra, D. (2012). Evidence for the Pinocchio Effect: Linguistic differences between lies, deception by omissions, and truths. *Discourse Processes, 49*(2), 79-106. <https://doi.org/10.1080/0163853X.2011.633331>
- Verschuere, B., Bogaard, G., & Meijer, E. H. (2021). Discriminating deceptive from truthful statements using the verifiability approach: A meta-analysis. *Applied Cognitive Psychology, 35*(2), 374-384. <https://doi.org/10.1002/acp.3775>
- Vrij, A. (2008). *Detecting lies and deceit: Pitfalls and opportunities* (2<sup>nd</sup> ed.). John Wiley and Sons.
- Vrij, A., Fisher, R. P., & Leal, S. (2023). How researchers can make verbal lie detection more attractive for practitioners. *Psychiatry, Psychology and Law, 30*(3), 383-396. <https://doi.org/10.1080/13218719.2022.2035842>
- Vrij, A., Granhag, P. A., Ashkenazi, T., Ganis, G., Leal, S., & Fisher, R. P. (2022). Verbal lie detection: Its past, present and future. *Brain Sciences, 12*, 1644. <https://doi.org/10.3390/brainsci12121644>
- Vrij, A., Leal, S., & Fisher, R. P. (2018). Verbal deception and the Model Statement as a lie detection tool. *Frontiers in Psychiatry, section Forensic Psychiatry, 9*, 492. <https://doi.org/10.3389/fpsy.2018.00492>

- Vrij, A., Leal, S., Jupe, L., & Harvey, A. (2018). Within-subjects verbal lie detection measures: A comparison between total detail and proportion of complications. *Legal and Criminological Psychology*, 23(2), 265-279. <https://doi.org/10.1111/lcrp.12126>
- Vrij, A., Leal, S., Mann, S., Dalton, G. Jo, E., Shaboltas, A., Khaleeva, M., Granskaya, J., & Houston, K. (2017). Using the Model Statement to elicit information and cues to deceit in interpreter-based interviews. *Acta Psychologica*, 177, 44-53. <https://doi.org/10.1016/j.actpsy.2017.04.011>
- Vrij, A., Mann, S., Leal, S., & Fisher, R. P. (2021). Combining verbal veracity assessment techniques to distinguish truth tellers from lie tellers. *European Journal of Psychology Applied to Legal Context*, 13(1), 9-19. <https://doi.org/10.5093/ejpalc2021a2>
- Vrij, A., Mann, S., Leal, S., Fisher, R. P., & Deeb, H. (2020). Sketching while narrating as a tool to detect deceit. *Applied Cognitive Psychology*, 34(3), 628-642. <https://doi.org/10.1002/acp.3646>
- Vrij, A., Palena, N., Leal, S., & Caso, L. (2021). The relationship between complications, common knowledge details and self-handicapping strategies and veracity: A meta-analysis. *European Journal of Psychology Applied to Legal Context*, 13(2), 55-77. <https://doi.org/10.5093/ejpalc2021a7>

## Appendix 1

### The Interview Protocol

I understand that you have been on a surveillance mission today to follow a target that is of interest to us. In this interview I will ask you questions about that mission. Depending on your answers, we may decide to interview you a second time.

Q1. Please tell me in as much detail as possible everything you witnessed 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 and then say:

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 to focus in on a different specific part of your mission. We are aware from our mobile phone technical team that the target received a phone call whilst in Victoria Park.

Therefore, this time I would like you to go back in your memory to the moment the target received a telephone call in Victoria Park. Please think about that moment -think about what you could see, what you could hear, what you could feel and what you could smell- and let me know when you are back in that moment? (Once participant says they are there say) Now please draw for me what you could see at that moment and whilst doing so, talk me through everything you experienced. (If the person says they cannot draw well, reassure them that drawing ability does not matter. Also, if they stop talking whilst drawing remind them to keep narrating whilst drawing. If the participant denies witnessing the telephone call, then just say "ok in that case please think about the moment you first saw him in Victoria Park).

Q4. Thank you for that, what I would like to do now is to again focus in on a different specific part of your mission. We are also aware that the target withdrew money from a cash machine. Therefore, this time I would like you to go back in your memory to the moment the target withdrew money from a cash machine. Please think about that moment -think about what you could see, what you could hear, what you could feel and what you could smell, and let me know when you are back in that moment? (Once participant says they are there say) Now please draw for me what you could see at that moment and whilst doing so, talk me through everything you experienced. If the person says they cannot draw well, reassure them that drawing ability does not matter. Also, if they stop talking whilst drawing remind them to keep narrating whilst drawing. ( If the participant denies witnessing the target withdrawing money from a cash machine, then just say ok please draw what you could see when you saw him near the bank).

Thank you, that is the end of my questions, thank you. Now please return to the experimenter.

Questions 3 and 4 were counterbalanced.

## Appendix 2

### Univariate results for Common Knowledge Details and Self-Handicapping Strategies as a Function of Veracity

	Truth tellers		Lie tellers: Small omission		Lie tellers: Large omission		<i>F</i>	<i>p</i>	$\eta_p^2$	BF <sub>10</sub>
	<i>M</i> ( <i>SD</i> )	95% CI	<i>M</i> ( <i>SD</i> )	95% CI	<i>M</i> ( <i>SD</i> )	95% CI				
Non-essential and essential details combined										
Common knowledge details	0.67 <sup>1</sup> (0.93)	0.34, 0.99	1.70 <sup>2</sup> (1.19)	1.38, 2.02	2.42 <sup>3</sup> (1.38)	2.09, 2.75	28.10	< .001	.274	6.122 x 10 <sup>9</sup>
Self-handicapping strategies	0.15 (0.35)	0.03, 0.27	0.16 (0.45)	0.04, 0.28	0.22 (0.51)	0.10, 0.35	0.43	.654	.006	0.09
Non-essential details										
Common knowledge details	0.29 (0.66)	0.10, 0.49	0.61 (0.74)	0.41, 0.80	0.65 (0.76)	0.45, 0.86	3.73	.026	.048	1.42
Self-handicapping strategies	0.08 (0.21)	0.004, 0.15	0.04 (0.22)	-0.04, 0.11	0.05 (0.27)	-0.03, 0.13	0.30	.743	.004	0.09
Essential details										
Common knowledge details	0.37 <sup>1</sup> (0.53)	0.14, 0.60	1.10 <sup>2</sup> (0.89)	0.87, 1.33	1.77 <sup>3</sup> (1.02)	1.53, 2.00	34.60	< .001	< .001	1.42 x 10 <sup>10</sup>
Self-handicapping strategies	0.07 (0.22)	-0.01, 0.15	0.13 (0.33)	0.05, 0.21	0.17 (0.32)	0.09, 0.26	1.61	.203	.021	0.26

## Supplementary Materials

## Univariate Results for the Verbal Cues as a Function of Veracity for Free Recall, Model Statement and Sketches Separately

	Truth tellers		Lie tellers: Small omission		Lie tellers: Large omission		<i>F</i>	<i>p</i>	$\eta_p^2$	BF <sub>10</sub>
	<i>M</i> ( <i>SD</i> )	95% CI	<i>M</i> ( <i>SD</i> )	95% CI	<i>M</i> ( <i>SD</i> )	95% CI				
Free recall										
External details	43.88 (17.01)	38.98, 48.79	37.06 (15.90)	32.20, 41.92	27.24 (20.15)	32.24, 42.25	2.45	.090	.032	0.52
Contextual details	27.12 (12.94)	23.12, 31.12	25.25 (13.41)	21.29, 29.21	24.53 (16.85)	20.45, 28.61	0.43	.652	.006	0.09
Internal details	0.57 (0.85)	0.37, 0.77	0.29 (0.67)	0.09, 0.48	0.27 (0.57)	0.07, 0.47	2.88	.059	.037	0.75
Complications	4.022 (3.73)	3.22, 4.82	2.00 <sup>1</sup> (2.50)	1.21, 2.79	2.01 <sup>1</sup> (2.15)	1.20, 2.82	8.28	<.001	.100	58.40
Common knowledge details	0.58 <sup>1</sup> (0.81)	0.32, 0.84	1.25 <sup>2</sup> (0.87)	0.99, 1.51	1.86 <sup>3</sup> (1.12)	1.59, 2.12	23.20	<.001	.237	5.721 x 10 <sup>6</sup>
Self-handicapping strategies	0.03 (0.16)	-0.004, 0.06	0.03 (0.12)	-0.004, 0.06	0.01(0.07)	-0.02, 0.04	0.41	.664	.005	0.11
Model Statement										
New external details	22.04 (16.09)	17.98, 26.10	18.25 (13.22)	14.23, 22.28	20.55 (14.65)	16.40, 24.70	0.87	.421	.012	0.14
New contextual details	10.94 (10.37)	8.36, 13.52	10.21 (8.73)	7.65, 12.77	10.18 (8.81)	7.55, 12.82	0.11	.898	.001	0.07
New internal details	0.51 (1.07)	0.30, 0.72	0.27 (0.60)	0.06, 0.48	0.29 (0.54)	0.07, 0.50	1.54	.218	.020	0.24
New complications	4.74 <sup>2</sup> (4.78)	3.81, 5.66	1.83 <sup>1</sup> (2.09)	0.91, 2.74	2.30 <sup>1</sup> (2.52)	1.35, 3.24	11.11	<.001	.130	599.53
New common knowledge details	0.09 <sup>1</sup> (0.26)	-0.03, 0.21	0.27 <sup>1,2</sup> (0.45)	0.15, 0.39	0.41 <sup>2</sup> (0.55)	0.29, 0.53	6.88	.001	.085	20.91
New self-handicapping strategies	0.05 (0.18)	0.002, 0.10	0.02 (0.10)	-0.03, 0.070	0.05 (0.21)	0.003, 0.10	0.57	.566	.008	0.11
Sketches										
New external details	11.69 (7.17)	9.61, 13.76	12.54 (8.32)	10.48, 14.60	12.45 (6.92)	10.33, 14.57	0.20	.820	.003	0.08
New contextual details	2.27 (1.88)	1.46, 3.09	3.25 (3.61)	2.44, 4.06	2.94 (3.11)	2.10, 3.77	1.46	.237	.019	0.23
New internal details	0.37 (0.85)	0.14, 0.61	0.33 (1.10)	0.09, 0.56	0.16 (0.51)	-0.08, 0.41	0.82	.444	.011	0.13
New complications	1.28 (1.56)	0.94, 1.63	0.65 (0.92)	0.31, 1.00	0.79 (1.23)	0.43, 1.14	3.54	.031	.045	1.48
New common knowledge details	0.00 <sup>1</sup> (0.00)	-0.08, 0.08	0.18 <sup>2</sup> (0.33)	0.11, 0.26	0.15 <sup>2</sup> (0.37)	0.07, 0.23	6.04	.003	.075	9.67
New self-handicapping strategies	0.07 (0.20)	-0.03, 0.17	0.11 (0.34)	0.02, 0.21	0.16 (0.47)	0.06, 0.26	0.90	.408	.012	0.14

