Using the Model Statement to Elicit Information and Cues to Deceit from Native Speakers, Non-Native Speakers and those Talking Through an Interpreter

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Abstract

We examined how the presence of an interpreter during an interview affects eliciting information and cues to deceit, whilst using a method that encourages interviewees to provide more detail (model statement, MS). Sixty native English speakers were interviewed in English and 186 non-native English speakers were interviewed in English or through an interpreter. Interviewees either lied or told the truth about a mock security meeting, which they reported twice: in an initial free recall and after listening to the MS. The MS resulted in the native English speakers and those interviewed with an interpreter providing more reminiscences (additional detail) than the non-native English speakers interviewed without an interpreter. As a result, those interviewed through an interpreter provided more detail than the non-native English speakers, but only after the MS. Native English participants were most detailed in both recalls. No difference was found in the amount of reminiscences provided by liars and truth tellers.

Keywords: interpreter, model statement, non-native speakers, information gathering, deception

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An increasingly globalised world means that investigators and interviewees often do not share the same native language (Mulayim, Lai, & Norma, 2014). Deception researchers have started to examine cross-cultural interactions. Bond and colleagues' early pioneering work in cross-cultural deception, examining the ability to detect deceit across cultures (Bond & Rao, 2004) has been followed up by more recent work in this domain (DaSilva & Leach, 2013; Duñabeitia, & Costa, 2015; Evans & Michael, 2014; Evans, Michael, Meissner, & Brandon, 2013; Leach & DaSilva, 2013). None of these studies address the issue we examine in this article: The use of interpreters in cross-cultural interactions.

When investigators and interviewees do not share the same native language, it can hinder the effectiveness of an investigative interview (Gibbons, 2001). In such circumstances an interpreter could become a vital part of the investigation. Ewens et al. (2014) examined the effect of an interpreter on eliciting information and cues to deceit. They found that non-native English interviewees who spoke in their native language through an interpreter gave the same amount of information as non-native English interviewees who spoke in English and both groups gave less information than English interviewees who were interviewed in English. The non-native English participants who spoke in English may have lacked the vocabulary to say more but that does not apply to those interviewed through an interpreter. They therefore have the potential to provide more detail.

Several methods have been shown to encourage people to report more detail, including introducing a silent second interviewer who is supportive throughout (Mann et al., 2012), or deliberately mimicking the interviewee (Shaw et al., 2015). See Vrij (2014) and Vrij, Leal, Mann, Vernham, & Brankaert (2015) for reviews of such techniques. Another way to encourage participants to give more detail is to provide them with a detailed model

statement (MS), which is an example of a detailed account/story unrelated to the topic of the interview. Without prompting, interviewees tend not to report all they remember, in part, because their beliefs about how much detail is expected from them is inadequate (Fisher, 2010; Vrij, Hope, & Fisher, 2014). A MS changes interviewees' expectations and shows them that they are expected to be more detailed. As a result, interviewees provide more detail after having been exposed to a MS than without such a MS (Hirn, Fisher, & Carol, 2012; Leal, Vrij, Warmelink, Vernham, & Fisher, 2015).

When native speakers -after their initial free recall followed by a MS- realise that the investigator expect them to provide more detail, they should have the vocabulary to give additional details. Also for those speaking through an interpreter language is not a barrier, so they also should be able to give additional details. For interviewees who are interviewed in a non-native language without an interpreter a problem may occur as they may not possess the vocabulary to give additional details.

In the present experiment three groups of participants took part. Interviewees who shared the same language as the interviewer (English) and were interviewed in that native language (native English condition); interviewees who did not share the same language as the interviewer and who spoke in their own language through an interpreter (interpreter condition); and interviewees who did not share the same language as the interviewer and who were interviewed in the language of the interviewer (English), for them a non-native language (non-native English condition). Interviewees initially provided a free recall. After this free recall they listened to a MS and were then asked to report their experience again.

In the initial free recall before listening to the MS, we could expect a replication of Ewens et al. (2014) which would mean that native English participants are likely to give more information compared to those who are speaking through an interpreter and those asked to

speak in a non-native language, whereas the interpreter group and non-native English group may not differ in detail (Hypothesis 1).

The MS may have a different effect on the native English and interpreter participants on the one hand and on the non-native English participants on the other hand. The participants in the native and interpreter conditions will be able to give additional detail (reminiscences) after listening to the MS than the non-native English participants who will lack the vocabulary to do so. We therefore predicted that after the MS (Phase 2) the native English speakers and participants in the interpreter condition will add more reminiscences than the non-native English speakers (Hypothesis 2). As a result, in Phase 2, the native English speakers will provide more details than those who are interviewed through an interpreter who, in turn, will provide more details than the non-native English speakers (Hypothesis 3).

Cues to Deceit

Deception research has shown that truth tellers typically provide more detail than liars (DePaulo et al., 2003; Masip, Sporer, Garrido, & Herrero, 2005; Vrij, 2008). This may be because liars may lack the imagination and skills to convey the amount of detail that truth tellers convey (Vrij, 2008), or may be reluctant to provide detail through fear that such details may provide leads for investigators to check (Nahari, Vrij, & Fisher, 2014). Both truth tellers and liars will realise when listening to a MS that more detail is required but these two reasons suggest that truth tellers will give more additional detail than liars. We thus predict that a MS would lead to more additional detail (reminiscences) from truth tellers than from liars (Hypothesis 4).

In terms of number of detail provided, when interviewees say more (the result of the MS) the likelihood of cues to deceit occurring will increase, because words are the carriers of verbal cues to deceit (Vrij, Mann, Kristen, & Fisher, 2007). Thus the difference in detail

between truth tellers and liars, which we expect to be present in Phase 1 before the MS, may become more pronounced after the MS in Phase 2, particularly in the conditions where we expect a large number of reminiscences: the native English and interpreter conditions (Hypothesis 5).

Method

Participants

A total of 246 participants (90 males and 156 females) took part in the study. Their age ranged from 17-41 years with an average age of $M = 21.50$ years ($SD = 2.96$). Participation took place in four different universities in the United Kingdom, Russia, Republic of Korea and USA, and the background of the participants was British ($n = 60$), Russian ($n = 65$), Korean ($n = 80$) and Hispanic ($n = 41$).

Insert Table 1 about here

Table 1 shows the age and gender distribution in each Interview Condition. Age differed between conditions $F(2, 240) = 6.23$, $p = .002$, *partial eta*$^2 = .05$, with the participants in the native-English condition being somewhat younger than the participants in the non-native English and Interpreter conditions. No other differences emerged in terms of age. When Age was introduced as a covariate in the Total Detail and Reminiscences analyses reported in the Results section it was found that Age did not have a significant effect on Total Detail, $F(1, 239) = .19$, $p = .661$, *partial eta*$^2 = .001$ or Reminiscences, $F(1, 239) = .17$, $p = .678$, *partial eta*$^2 = .001$.

Gender was not equally distributed across all three conditions $X^2(2, 246) = 6.54$, $p = .038$, *phi* = .16, with relatively few males being allocated to the non-native English condition. When Gender was introduced as a covariate in the Total Detail and Reminiscences analyses reported in the Results section it was found that Gender had a significant effect on Total Detail, $F(1, 239) = 4.81$, $p = .029$, *partial eta*$^2 = .02$, but not on Reminiscences, $F(1, 239) =$

2.30, $p = .131$, *partial eta*$^2 = .01$. However, the analysis of covariance did not change the findings reported in the Results section regarding Total Detail.

Grasp of English

In the post-interview questionnaire non-native English participants were asked to rate their English proficiency using an English language training scheme scale from Embassy English. The scale consists of five categories: [1] Beginner (those who know a few English words i.e., hello, taxi, football), [2] Elementary (those who can communicate in a basic way/can make simple sentences, reply to questions on a range of personal and common subjects, talk about likes and dislikes, family and routines), [3] Pre-Intermediate (those with a good basic ability to communicate and understand many subjects and give opinions, grammar includes understanding of adjectives, adverbs, comparatives and basic prepositions), [4] Intermediate (those who have the grammar to talk about a wide number of subjects, have some understanding of tone and style, can confidently make sentences, question forms and clauses), and [5] Upper-Intermediate (those who can talk fluently and almost completely accurately). Participants in the non-native English condition classified themselves as Beginner 2%, Elementary 23%, Pre-Intermediate 44%, Intermediate 23% and Upper-Intermediate 8%. Those in the interpreter conditions classified themselves as Beginner 10%, Elementary 36%, Pre-Intermediate 14%, Intermediate 22% and Upper-Intermediate 18%. These two distributions differ significantly from each other, $X^2(4, 186) = 25.54$, $p = .001$, *phi* = .37, and show that the participants in the interpreter condition found themselves somewhat less skilled in English than participants in the non-English condition. It is the result of allocating participants whose English was thought not to be good enough to be interviewed in English to an interpreter condition (see below). This probably reflects real life with the least skilled interviewees opting most frequently for being interviewed through an interpreter.

Additionally, all non-native participants were asked if they would request an interpreter in a police interview in an English-speaking country via a yes/no response. In the non-native English condition 84% would have requested an interpreter, whereas in the interpreter conditions 78% would have requested an interpreter. Those findings did not differ between these groups, $X^2(1, 186) = .70$, $p = .40$, $phi = .06$.

Procedure

On arrival to the corresponding university, participants were greeted by members of the research team. They were informed that they were going to play the role of a security officer and that they would be viewing video footage from an intelligence agency of a secret meeting. All participants completed a pre-interview questionnaire in which they were asked to what extent they were motivated to perform well in the interview on a 5 point Likert-scale (1 = not at all motivated to 5 = very motivated). The pre-questionnaire was translated and completed in the native language of the participant.

Participants then watched the secret meeting video. The purpose of the secret meeting was to vote on a suitable location to plant a spy device. All participants were told to watch the footage and that it was essential they remembered as much detail as they could. The videos were dubbed over into Russian, Korean, and Hispanic and presented to the participants in their native language. The videos were derived from Shaw et al. (2015). See Appendix A for a review of the content.

Once the video had finished the participants were allocated to the truth telling (n = 122) or lying (n = 124) condition and subsequently given instructions (derived from Shaw et al., 2015). Truth tellers were told to be completely truthful in the interview. Liars were instructed to give false information about the location that was selected to hide the spy device. They were further instructed to give some truthful and some false information when asked to describe the device (see Appendix B for full instructions).

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All participants were told that they must convince the investigators that they were telling them the truth, and if they did they would receive £7 (or an equivalent amount in Russia, Korea and the US). They were further told that if they could not convince the investigators, they would be asked to write a report about the meeting.

Participants were then brought to the interview room and introduced to the interviewer and, if present, the interpreter. Both interviewer and interpreter were blind to the veracity of the participant. Two British female interviewers were used for all interviews and spoke English during the interviews. The interviewers (and interpreters if present) were instructed to keep an open posture but to avoid displaying any expressiveness, as being supportive or sceptical influences participant's responses during an interview (Mann et al., 2012). Both interviewers have vast experience in interviewing native English and non-native English participants in research studies, and were also used as interviewers in Ewens et al. (2014) and Vrij, Granhag, Mann, & Leal (2011).

In total, six interpreters were used in the study: Russian (n = 2), Korean (n = 2) and Hispanic (n = 2). Interpreters were requested to speak in the first person and to give a complete account of the interviewee's response [to the best of their ability] after the interviewee had finished answering each question. The Korean and Hispanic interpreters were professional interpreters, the Russian interpreters spoke fluent English and both had a Masters degree, which included English language. They were allowed and encouraged to take notes when the interviewee spoke.

Aside from the interpreter condition (n = 125), the study included two conditions that did not have an interpreter present. One condition (native English) consisted of native English speaking participants (n = 60) who were interviewed in English. The other condition (non-native English) consisted of Russian, Korean and Hispanic native speakers (n = 61) who were interviewed in English (and answered in English). In the non-native English condition, all

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participants spoke English well enough to ensure they would be able to get by in the interview. The non-native languages were equally distributed across the non-native English and interpreter conditions, ensuring that language did not affect the non-native conditions. The non-native participants were randomly allocated to the experimental conditions as much as possible. The exception were some non-native speakers whose grasp of English was too limited to be interviewed without an interpreter. They were allocated to the interpreter condition.

To make the interviewee feel comfortable and to avoid floor effects in establishing rapport interviewees were offered a glass of water from the interviewer, as offering something helps rapport building (reciprocation principle, Cialdini, 2007). The interview contained three initial questions. Question 1: "I'd like to start with you recalling what happened during the meeting. That is, starting from the moment the video started; please describe to me what happened from that point onwards until the end of the meeting?": Question 2 (which was about the selected site): "I would like you to describe what it looked like from the inside, including the exact location where the device would be planted?"; Question 3: "Moving on to the device, I would like you to describe for me what the device looked like and all of its technical features?" Following these questions the participants were played an audio recording of a model statement (MS). The model statement is a 1 minutes 30 second recording which contains a detailed account. After listening to the MS participants were asked the same three questions. The order in which the second and third questions were asked in Phase 2 was counterbalanced.

To rule out that unspecified idiosyncratic features in the MS would be responsible for the absence of presence of the predicted MS effect, we used two MS (both equal in length). Both were unrelated to the secret meeting videotape, as we wanted to give participants an idea about what a detailed account entails rather than to give them an idea about what they

actually could say during the interview. In one recording (also used in Leal et al., 2015) a person gives a detailed account of attending a motor racing event. In the second recording a person gives a detailed account of a day at the beach. Both recordings were a spontaneous, unscripted, recall of an event, truly experienced by the person, and the only instruction each person received was to be as detailed as possible (for a transcript of the recordings please contact the first author). No difference emerged between the two MS in the number of reminiscences they elicited, $F(1, 244) = 1.75$, $p = .187$, $d = .17$, and in the number of detail provided at Phase 2, $F(1, 244) = .63$, $p = .43$, $d = .10$.

The interviews were video (interviewees only) and audio recorded and the English speech in the audiotapes was subsequently transcribed. In other words in the interpreter conditions the speech from the interpreter was transcribed. We did this because it is this speech that interviewers will understand in real life interviews with interpreters. In a study in which the interviewee's and interpreter's speech were both transcribed, coded and analysed, virtual identical findings in the two data sets emerged in terms of eliciting information and cues to deceit (Ewens et al., 2016).

After the interview, participants completed a post-interview questionnaire, which was translated and completed in the native language of the participant. The questionnaire measured likelihood of receiving £7 (or the equivalent) and likelihood of writing a statement, both were measured on 7 Likert point scales (1 = not at all to 7 = totally).

Participants were further asked two questions related to the MS: (i) The model statement made me realise that my initial answers were not detailed enough and (ii) The model statement made me realise that my initial answers were too detailed. Both questions could be answered on Likert scales ranging from [1] not at all to [7] very much so.

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Participants in the interpreter conditions also were asked whether they could understand (i) the interviewer and (ii) what the interpreter translated back into English. Both questions could be answered on Likert scales ranging from [1] not at all to [7] very much so.

Coding

All coders were blind to the hypotheses and experimental conditions of the study.

Total Detail and Reminiscences.[1] A coder first read the transcripts and coded each of the first three questions (Phase 1) for number of detail. We used the same coder as in Ewens et al. (2014). She is a well experienced coder trained in the second author's lab. Detail included all the perceptual details (information about what the examinee saw or heard); spatial details (information about locations or the spatial arrangement of people and/or objects); and temporal details (information about when the event happened or an explicit description of a sequence of events). We did not split detail into these sub-categories as no hypotheses were formulated about them. The three questions after the MS was played (Phase 2) were coded for detail in the same was as in Phase 1 but this time it was also coded whether new details emerged (reminiscences, detail reported in Phase 2 which were not reported in Phase 1). A second coder coded a random sample of 50 transcripts. Inter-rater reliability between the two coders was, total detail (Single Measures ICC = .95) and reminiscences (Single Measures ICC = .92).

Results

Manipulation Checks

Motivation, likelihood of receiving an incentive and receiving a penalty. The grand mean score revealed that the participants were motivated to perform well (M = 3.90, SD = .72 on a 5-point scale), with truth tellers and liars being equally motivated, $F(1, 240)$ = 2.88, p = .091, d = 0.22. Differences emerged in motivation between Interview Condition, $F(3, 238)$ = 5.60, p = .001, *partial eta*^{2} = .07, but when motivation was included as a

covariate they had no effect on the findings related to Total Detail and Reminiscences discussed below. Truth tellers (M = 4.74, SD = 1.35, 95% CI [4.52, 4.99]) were more convinced that they would receive the incentive of £7 (or equivalent) than liars (M = 4.10, SD = 1.41, 95% CI [3.85, 4.32]), $F(1, 240) = 18.38$, $p < .001$, $d = 0.46$, whereas liars thought the likelihood of writing a statement was significantly higher (M = 3.96, SD = 1.28, 95% CI [3.73, 4.20]) than truth tellers (M = 3.48, SD = 1.40, 95% CI [3.23, 3.71]), $F(1, 240) = 9.51$, $p = .004$, $d = 0.36$. A full account of the 2 (Veracity) X 3 (Interview Condition) analyses regarding motivation, incentives and penalties is available from the first author.

Understanding the interviewer and interpreter. In the analyses for being able to understand (i) the interviewer and (ii) what the interpreter translated back in English only the interpreter group was included. Regarding being able to understand the interviewer $F(1, 123) = .32$, $p = .573$, $d = .10$, and being able to understand what the interpreter translated back in English, $F(1, 123) = .18$, $p = .671$, $d = .05$, no differences emerged between truth tellers and liars.

Impressions about purpose of the MS. A majority of participants (58%) reported that the model statement made them realise that their initial statement was not detailed enough (a score of 5 or higher on the 7-point Likert scale). A 2 (Veracity) X 3 (Interview Condition) ANOVA with the question whether the MS made the participants realise that their initial answer was not detailed enough as dependent variable showed that the Veracity main effect, $F(1, 240) = 3.70$, $p = .055$, $d = 0.33$, Interview Condition main effect, $F(2, 240) = .21$ $p = .811$, *partial eta*^{2} = .002, and Veracity X Interview Condition interaction effect, $F(2, 240) = 1.37$, $p = .255$, *partial eta*^{2} = .01 were all not significant.

A total of 11% of the participants reported that the model statement made them realise that their initial statement was too detailed (a score of 5 or higher on the 7-point Likert scale). A 2 (Veracity) X 3 (Interview Condition) ANOVA with the question whether the MS made

the participants realise that their initial answer was too detailed as dependent variable, showed that the Veracity main effect, $F(1, 240) = 2.67$, $p = .104$, *partial eta*$^2 = .01$, the Interview Condition main effect, $F(2, 240) = 1.28$, $p = .281$, *partial eta*$^2 = .01$, and the Veracity X Interview Condition interaction effect, $F(2, 240) = .87$, $p = .422$, *partial eta*$^2 = .01$, were all not significant.

It sounds reasonable that these two variables correlate with the amount of detail the participants gave at Phase 1. The less detailed at Phase 1 the more likely it is that participants understood that they had to be more detailed after listening to the MS; and the more detailed at Phase 1, the more likely it is that participants thought that they were too detailed in Phase 1 after listening to the MS. To examine this, we carried out such correlations. The more participants realised after hearing the MS that they were not detailed enough in Phase 1, the fewer detail they had reported at Phase 1 ($r(246) = .313$, $p < .001$); and the more participants realised after the MS that they were too detailed at Phase 1, the more details they had reported at Phase 1, ($r(246) = -.13$, $p = .045$).

It also sounds reasonable that these two variables correlate with the number of reminiscences given at Phase 2. The more participants correctly understood the purpose of the MS (to provide more detail) the more likely it is that they would provide reminiscences in Phase 2, and the more they incorrectly understood the purpose of the MS (that they were too detailed at Phase 1), the less likely it is that they would provide reminiscences in Phase 2. To examine this we carried out such correlations. The more participants realised after hearing the MS that they were not detailed enough at Phase 1, the more reminiscences they reported at Phase 2 ($r(246) = .300$, $p < .001$); and the more participants realised after the MS that they were too detailed at Phase 1, the fewer reminiscences they reported at Phase 2 ($r(246) = -.19$, $p = .003$).

Hypothesis Testing

Total detail (Hypotheses 1, 3 and 5). A mixed ANOVA was conducted with Phase (Phase 1, Before the MS vs. Phase 2 After the MS) as the Within-subjects factor and Veracity (Truth vs. Lie) and Interpreter Condition (native-English vs. interpreter vs. non-native English) as the Between-subjects factors. The dependent variable was Total Detail. There was a significant main effect for Phase, $F(1, 240) = 134.00$, $p < .001$, $d = 0.36$. Interviewees gave more detail in Phase 2 ($M = 58.05$, $SD = 27.18$, 95% CI [55.26, 61.35]) than in Phase 1 ($M = 43.86$, $SD = 23.10$, 95% CI [41.53, 46.61]). There was also a significant main effect for Veracity, $F(1, 240) = 40.65$, $p < .001$, $d = 0.84$, with truth tellers ($M = 120.32$, $SD = 48.79$, 95% CI [113.57, 128.23]) providing more detail than liars ($M = 83.80$, $SD = 37.75$, 95% CI [76.60, 91.10]). The Interpreter Condition main effect was also significant, $F(2, 240) = 17.48$, $p < .001$, *partial eta*$^2 = .13$. Tukey posthoc tests showed significant differences between all three conditions: Participants in the native-English speaking condition gave more detail ($M = 125.52$, $SD = 45.33$, 95% CI [115.10, 135.93]) than participants in the interpreter condition ($M = 100.37$, $SD = 49.06$, 95% CI [92.48, 108.25]), who gave more detail than participants in the non-native English condition ($M = 81.85$, $SD = 33.49$, 95% CI [71.29, 91.95]).

The Phase X Interpreter interaction effect was significant, $F(2, 240) = 6.71$, $p = .001$, *partial eta*$^2 = .05$. In Phase 1, the three Interpreter Conditions differed significantly from each other in terms of detail, $F(2, 243) = 8.77$, $p = .001$, *partial eta*$^2 = .07$. Post hoc tests revealed that native-English participants ($M = 53.75$, $SD = 22.76$, 95% CI [48.04, 59.46]) provided more detail than interpreter participants ($M = 42.31$, $SD = 25.14$, 95% CI [38.37, 46.26]), and non-native English participants ($M = 37.30$, $SD = 14.72$, 95% CI [31.63, 42.96]). The latter two conditions did not differ. This supports Hypothesis 1.

In Phase 2, the three Interpreter Conditions also differed significantly from each other in terms of detail $F(2, 243) = 17.16$, $p < .001$, *partial eta*$^2 = .12$. Tukey posthoc tests revealed that participants in the native English condition ($M = 71.77$, $SD = 26.19$, 95% CI [65.26,

78.28]) provided more detail than participants in the interpreter condition (M = 58.06, SD = 26.78, 95% CI [53.56, 62.56]) and non-native English condition (M = 44.56, SD = 22.05, 95% CI [38.10, 51.01]). Additionally, participants in interpreter condition gave more detail than those in the non-native English condition. This supports Hypothesis 3.

The Phase X Veracity, $F(1, 240) = .63$, $p = .428$, *partial eta*^{2} = .01, Veracity X Interview Condition, $F(1, 240) = .44$, $p = .643$, *partial eta*^{2} = .02, and Phase X Veracity X Interview Condition interaction effects, $F(2, 240) = .73$, $p = .484$, *partial eta*^{2} = .01 were not significant. A more appropriate test of Hypothesis 5 is to compare groups' effect sizes to understand the magnitude of differences in each of the truth-lie comparisons (see du Prel, Hommel, Röhrig, & Blettner, 2009 and Fritz, Morris & Richler, 2012). This information is provided in Table 2.

Insert Table 2 about here

Table 2 reveals that in Phase 1 truth tellers gave significantly more detail than liars in all three interview conditions with the effect sizes being substantial (d = .91 to d = 1.06). In Phase 2 truth tellers were also more detailed than liars in all three interview conditions, but the effect sizes in Phase 2 were less substantial (d = .70 to d = .72) than in Phase 1, which means that Hypothesis 5 is rejected.

Reminiscences (Hypotheses 2 and 4). A 2 (Veracity) X 3 (Interview Condition) ANCOVA was conducted with Reminiscences as dependent variable and detail at Phase 1 as a covariate. We included this covariate, as the number of reminiscences depends on the amount of detail provided in Phase 1. The more detail given in Phase 1, the less opportunity participants have to add new detail in Phase 2.

The Veracity main effect, $F(1, 239) = .12$, $p = .725$, d = .12, and Veracity X Interview Condition interaction effect, $F(2, 239) = .62$, $p = .542$, *partial eta*^{2} = .005, were not significant but there was a significant Interview Condition main effect, $F(2, 239) = 5.79$, p =

.003, *partial eta*^{2} = .05. Tukey posthoc tests showed that participants in the non-native English condition gave fewer reminiscences (*M* = 21.52, *SD* = 15.31, 95% CI [17.33, 25.65]), than participants in the native English condition (*M* = 34.68, *SD* = 17.14, 95% CI [30.49, 38.88]), and in the interpreter condition (*M* = 28.94, *SD* = 16.58, 95% CI [26.05, 31.85]). The latter two groups did not differ from each other. The Interview Condition main effect findings support Hypothesis 2, but the absence of a Veracity main effect means that Hypothesis 4 is rejected.

Discussion

In line with Hypothesis 1 and previous research (Ewens et al., 2014) the native English participants provided more detail before the MS (in Phase 1) than the non-native English speakers and participants interviewed through an interpreter. It is likely that the non-native English speakers failed to match the amount of information given by the native English speakers due to a lack of vocabulary. However, those in the interpreter group did not lack the vocabulary, as they were speaking in their native language, yet they provided less detail than the native English participants and a similar amount of detail as the non-native English participants.

We therefore argued that it may help to differentiate between non-native speakers and those interviewed through an interpreter by encouraging interviewees to provide more detail, which we did via the introduction of a MS. Interviewees who have the vocabulary (those who are interviewed in their native language or through an interpreter) should benefit the most of this. This is exactly what we found. The participants in the native English condition, interviewed in English, and participants who were interviewed with an interpreter provided more reminiscences after listening to the MS than the non-native English participants speaking in English, supporting Hypothesis 2. Introducing the MS set the expectations for the amount of detail that is required in response to the questions asked. It is likely that the non-

native English speakers lacked the vocabulary to provide the reminiscences that the MS showed them they should provide. In contrast, participants in the native English condition and those who spoke through an interpreter did not have an issue with vocabulary and were therefore able to add sufficient additional detail after listening to the MS.

After the MS (in Phase 2), the native English speakers provided more detail than those who were interviewed through an interpreter who, in turn, provided more detail than the non-native English speakers. Thus, non-native interviewees provided more information when interviewed through an interpreter than when interviewed in a non-native language, but only after being encouraged to say more via a MS. This supported Hypothesis 3.

As the MS raised the expectations of all participants we had no reason to believe that after the MS the interpreter group would give an equal amount of detail as the native English group. This indeed did not happen and the interpreter group still gave less information than native English speakers. As language is not a barrier for this group it is important to try to understand the reasons why they do not give as much information. Impaired memory could be a reason for obtaining less information in interviews with interpreters. Interpreters disrupt the flow of providing information and interruptions impair memory retrieval and, subsequently, recall (Vrij et al., 2014). This cognitive explanation suggests that obtaining less information is inherent to consecutive interpreting, and perhaps more information would be obtained in simultaneous interpreting. This is a question for future research.

To design interview protocols that enhances the amount of detail provided by interviewees in interpreter interviews is an important aim as providing detail is the core of investigative interviewing (Bull, 2010; Fisher, 2010; Vrij, Hope, & Fisher, 2014). Introducing a MS is thus a method to achieve this aim. A MS is easy to implement because the only task for the interviewer is to switch on the MS audiotape. Other methods to encourage interviewees to talk may also work and future research should examine this. A MS works

better than a request 'to be as detailed as possible' (Leal et al., 2015), probably because a MS gives interviewees an example of what to do, whereas a verbal request to be detailed is just an instruction. It is easier to learn from examples than from verbal instructions.

The Results further showed that a MS is more effective in some participants than in others. The less detail participants provided in Phase 1 prior to the MS, the better they understood the purpose of the MS (to provide more detail), and the better they understood the purpose of the MS, the more reminiscences they provided. In other words, the MS is better understood and leads to more reminiscences in those who initially said less.

In the present study no difference was found in the amount of reminiscences provided by truth tellers and liars, rejecting Hypothesis 4. Furthermore, the difference in detail between liars and truth tellers was not more pronounced after the MS, rejecting Hypothesis 5. Our assumption was that after the MS truth tellers would provide a more detailed account than liars because liars would lack the imagination to add as many details to their original account as truth tellers. In this study liars were asked to lie about the site that was selected to plant a spy device and also to give a mixture of truth and lies about the device. Perhaps we made the task too easy for liars. They watched a video filled with information and perhaps it was not difficult for them to come up with additional information, based on what they saw in the video. If participants were asked to lie or tell the truth about something more complex, differences may occur. Future research should investigate using a more complex task. If truth tellers do not add more details than liars, the information they add may sound more plausible, as Leal et al. (2015) found. It was impossible to measure plausibility in the present study as truth tellers did not generate their own stories but reported what they say in the video. Future studies in which truth tellers (and liars) generate their own stories could examine whether liars' additions sound less plausible than truth tellers' additions.

Research has shown that informing participants about the working of verbal veracity

assessment tools such as Criteria-Based Content Analysis (CBCA) and Reality Monitoring (RM) decreased the efficiency of such tools as liars, after receiving such information, managed to 'sound like truth tellers' (Caso, Vrij, Mann, & DeLeo, 2006; Gnisci, Caso, Vrij, 2010; Vrij, Akehurst, Soukara, & Bull, 2002, 2004; Vrij, Kneller, & Mann, 2000). The present study and previous work (Leal et al., 2015) shows that a MS does not have such a negative effect. Two reasons may explain this. First, since truth tellers naturally provide statements that include CBCA and RM criteria, there is little to gain for them if they are informed about the working of these tools. In contrast, truth tellers do gain from a MS as it makes them realise that they have to be more detailed. Second, when liars are informed about the working of CBCA and RM they are told exactly what type of detail to include. In contrast, when listening to a MS, liars become aware to be more detailed but are still not told what type of details to include. In other words, the MS example is vaguer which makes it more difficult for liars to learn from it. Exactly for this reason it is important that the story depicted in the MS is unrelated to the topic of the interview (Leal et al., 2015).

Methodological Considerations

Within this study we used a control group consisting of native English speakers, speaking in English. We used this comparison group because it is the most interesting from an applied perspective. Interviewers are interested in the amount of detail given in their own language by native speakers, non-native speakers or by non-native speakers through an interpreter. In the present study we compared these different groups. A consequence of using the control group we used is that the native English speakers were not allocated to the interpreter conditions and that the allocation of participants to conditions was not entirely random. Efforts were made to make the participants in different countries as comparable as

possible and we did so by recruiting them from similar populations (university students). We believe that our conditions were comparable, aside from English as a first language.

The limitation of this control group is that we cannot rule out that cultural differences in talkativeness may have affected the results. Perhaps British speakers are more talkative than Russian, Korean or Hispanic speakers. It is also possible that British speakers said more because the interviewers were British. This means that British participants were interviewed by someone from their own culture, unlike the Russian, Korean and Hispanic participants. In future research a control group could be included in which Russian, Korean and Hispanic participants are interviewed in their own language by interviewers from their own country.

Theoretically, the finding that participants said more in Phase 2 could have been caused by the fact that we asked participants to tell again what they have witnessed rather than by the MS. An experimental design that includes a control group in which participants are just asked to tell again what they have witnessed (without playing a MS) could determine this. It could be that asking again to tell what happened leads to more detail as it could lead to a reaction such as 'since they ask me this again, my first answer may not have been detailed enough'. It is unlikely though that it will be as effective as a MS as research has demonstrated that a MS leads to more information than a verbal instruction to be detailed (Leal et al., 2015).

Conclusion

Interviewees who are interviewed through an interpreter are inclined to hold back information and typically do not provide more information than interviewees who are interviewed in a non-native language. However, the situation changes when interviewees are encouraged to provide detail, as this results in interviewees interviewed through an interpreter to provide more detail than those who speak in a non-native language. Interviewers should be aware of the reluctance of interviewees to 'tell it all' through an interpreter and we

recommend them to actively encourage interviewees to provide more detail in interpreter interviews, such as by inviting interviewees to listen to a MS.

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Table 1. Age and Gender Distributions as a Function of Interview Condition

	Age			Gender	
	M	*SD*	95% CI	Male	Female
Interview Condition					
Interpreter (61 truth and 64 lie)	21.80[ab]	3.26	21.31,22.32	41.6%	58.4%
English (30 truth and 30 lie)	20.37[a]	1.96	19.63,21.10	40%	60%
Non-native English (31 truth and 30 lie)	21.98[b]	2.90	21.25,22.71	23%	77%

Note: Within columns, only means with a different superscript differ significantly from each other ($p < .05$).

Table 2. Detail in each Phase as a Function of Veracity and Interview Condition

	Truth			Lie					
	M	*SD*	95% CI	*M*	*SD*	95% CI	*F*	*P*	*d*
Detail in Phase 1									
Interpreter	54.07	27.77	48.38,59.75	31.11	15.76	25.56,36.66	32.69	<.001	1.05
English	63.20	21.37	55.58,70.82	44.30	20.32	36.68,51.92	12.33	.001	0.91
Non-native English	44.13	13.06	39.44,48.82	30.23	13.06	25.46,35.00	17.27	<.001	1.06
Detail in Phase 2									
Interpreter	67.07	27.97	60.63,73.50	49.47	22.65	43.19,55.75	15.01	<.001	0.70
English	80.73	26.43	71.67,89.80	62.80	23.04	53.74,71.86	7.85	.007	0.72
Non-native English	51.74	22.11	44.21,59.28	37.13	19.71	29.48,44.79	7.41	.009	0.70

Appendix A: Content of the video that participants watched

The meeting contained three members, one of which did all the talking and led the meeting. He spoke firstly about the spy device and its technical features. This was followed by the possible locations to host the device, which included the name of the building, location, where specifically the device would be planted and why it was a suitable location. Two locations were discussed in full but before the third location could be discussed the leading member had to leave. The only information given about the third location was the name of the building. This resulted in all members taking a vote on which of the two locations was best to hide the device. The first location was always chosen as the selected site. Two variations of the video were used for counterbalancing. This was achieved by switching the order in which the three possible locations were presented, meaning that the selected site changed. Additionally, the device was physically different in the two videos. The technical features, however, stayed the same.

Appendix B: Instructions given to truth tellers and liars

Prior to being interviewed, *truth tellers* were informed that the footage they had just watched had disappeared and that the agency had launched an investigation. The agency believed they had a mole working for them and it was of the upmost importance that the investigators knew as much detail about the video as they could. Truth tellers were told to fully cooperate with the investigators, to be completely truthful and to answer the questions to the best of their knowledge.

Prior to being interviewed, *liars* were informed that the footage they had just viewed had disappeared. The agency had launched an investigation and needed to know in as much detail as possible what happened in the video. Liars were told it was their responsibility to recall that information in an interview. The intelligence agency believed they have a mole working for them, which could be the investigators the liars were going to talk to. This means that liars could not disclose all the information truthfully to the investigators. Liars were told the investigators knew the device would be placed somewhere, but that they did not know where. So, above all, liars must *not* reveal the location that was selected to hide the spy device and their objective was to mislead the investigators. Liars were instructed, when asked to describe the location that was *selected*, to provide some false, decoy information. They were told to use the third location as the location that was selected to plant the device (all liars did). The name of the building was presented in the video. However, as no other information was provided in the meeting about this third location, liars needed to invent these details. In total, they needed to make up three bits of information. First, the location of the building where the device would be planted. Second, within that building, where specifically the device would be planted and third a reason why this location was suitable to plant a spy device. Liars were also told that they needed to mislead the investigators about the device.

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The investigators knew something about the device but they did not have all the details, and it is not clear what they knew. Because of this, liars needed to provide *some truthful* and *some false* information about the device, which would help them to appear cooperative without having to tell the investigators everything. It was up to the participants to decide how much truthful and false information they would give.

[1] Total details and reminiscences cannot be derived from each other. Participants may not only add details at Phase 2 (reminiscences), they may also have left out details given at Phase 1 (omissions). Omissions were not coded as they can be derived from total details and reminiscences in the following way: total1+reminiscences-total2 = omissions. Since omissions can be derived from total details and reminiscences and since we did not formulate a hypothesis about omissions, they are not reported either.