J Police Crim Psych (2013) 28:48–53
DOI 10.1007/s11896-012-9109-3

Language Proficiency and Police Officers' Lie Detection Performance

Amy-May Leach · Cayla S. Da Silva

Published online: 7 July 2012

Abstract We examined lay persons' and police officers' abilities to detect lying in second-language speakers. Participants (N=121) viewed targets who were lying or telling the truth about an event in either their first or second languages. Overall, participants were better able to detect deception in native-language speakers than second-language speakers. In addition, they tended to believe that native-language speakers were telling the truth. However, contrary to our hypotheses, expertise did not affect lie detection performance. Implications will be discussed.

Keywords Lie detection · Police officers · Bilingualism · Signal detection theory

Introduction

Police officers often use investigative interviewing techniques to uncover suspects' lies. Ideally, both the officer and the suspect are able to communicate effectively with one another. However, suspects do not always have the opportunity to speak in their native languages when they are being interviewed by law enforcement officials (e.g., Office of the Commissioner of Official Languages 2005). As a result, suspects may be forced to communicate in their weaker, second languages. It is unknown how this practice affects people's abilities to detect lies.

This project was supported by a grant from the American Psychology-Law Society.

A.-M. Leach (✉) · C. S. Da Silva
Faculty of Social Science and Humanities,
University of Ontario Institute of Technology,
2000 Simcoe Street North,
Oshawa, Ontario L1H 7K4, Canada
e-mail: amy.leach@uoit.ca

Typically, lay persons' lie detection accuracy is poor. In fact, Bond and DePaulo (2006) found that, across studies, lie detection performance was only 54 %. Examining this result more closely revealed that lay persons were far better able to detect truth-telling (61 % accuracy) than lie-telling (47 % accuracy). Yet, it is unlikely that lay persons are merely proficient truth detectors. Rather, they appear to have a truth-bias, or an increased likelihood of labelling individuals as truth-tellers (Bond and DePaulo 2008). This bias may not be surprising given that it is socially desirable to overlook lying (Ekman 2009).

Police officers may not have the same expectations about lying. The base rate of lying is likely much higher during officers' investigative interviews than lay persons' daily interactions. Perhaps as a result, police officers have a tendency to believe that suspects are lying (e.g., Meissner and Kassin 2002). In addition, officers report that they are relatively proficient lie detectors (Kassin et al. 2007). However, several studies have shown that officers' abilities to discriminate between lie-tellers and truth-tellers are similar to those of lay persons (e.g., Ekman and O'Sullivan 1991).

It is possible that the investigative context has an impact on officers' accuracy. Recently, in a review of the literature, O'Sullivan et al. (2009) argued that police officers are more familiar with high-stakes lies – which are personally relevant and feature substantial negative consequences if unsuccessful. Indeed, when police officers are asked to detect high-stakes lies, they are more accurate than lay persons. Thus, differences between law enforcement officials and lay persons may depend on the significance of the lie.

Cross-cultural factors might also affect the investigative context and, subsequently, lie detection accuracy. Cultures differ in terms of their display rules (i.e., heuristics that establish the appropriateness of behaviors; Saarni and Salisch 1993). Thus, familiarity with display rules in one's own culture could put a person at a disadvantage when trying to detect deception in another culture. There is limited research on the

topic and the findings are mixed. Some studies have shown that lay persons are slightly better at detecting deception within their own culture; other studies have failed to find a difference (Bond and Atoum 2000). Any observed differences have been quite small, with lie detection rates hovering around 50 %. In addition, researchers have discovered that perceived cues to deception are similar across cultures (Global Deception Research Team 2006). Together, these findings suggest that there is no meaningful disadvantage to cross-cultural lie detection.

Yet, little is known about how language proficiency affects deception. This issue has only been explicitly examined in two studies; they have yielded mixed results. Cheng and Broadhurst (2005) asked individuals to lie or tell the truth about their opinions in either their native or second languages. Language proficiency did not affect lay persons' lie detection performance. However, the researchers permitted code-switching (i.e., alternating between native and second languages) during the interviews. Thus, the interviews did not feature 'pure' native- and second-language speech. In a more recent study by Da Silva and Leach (2012), individuals chose to lie or tell the truth about an actual transgression. Individuals were interviewed in English – which was either their native language or weaker, second language – and code-switching was not permitted. Lay persons were better able to discriminate between lie- and truth-tellers who were speaking in their native language (vs. second language). In addition, biases were evident in their performance: lay persons were more likely to identify native-language speakers as truth-tellers and second-language speakers as lie-tellers. Thus, there is evidence that language proficiency can affect lie detection performance. The impact that language has on police officers' judgments remains unknown.

We focused on two issues in the current study. First, we continued to explore whether language proficiency had an effect on lie detection. Second, we examined whether speakers' language proficiencies would affect experienced lie detectors (i.e., police officers). We used the same video footage as in Da Silva and Leach's (2012) study; thus, we expected to replicate their results with lay persons. However, in Da Silva and Leach's original study, lay persons viewed both native- and second-language speakers within the same testing session. As a result, the participants may have inferred that the researchers were testing how judgments would differ based on speakers' language proficiencies (and, subsequently, changed their responses). To reduce the potential for demand characteristics in the current study, we employed a between-participants design.

We also used signal detection analyses to reveal the two components underlying accuracy: discrimination and bias. First, we examined lay persons' and police officers' abilities to correctly differentiate between lie-tellers and truth-tellers. Because we were conducting a high-stakes interview, we hypothesized that police officers would be better able to discriminate between lie-tellers and truth-tellers than lay persons.

Second, we tested participants' tendency to choose a particular response option (i.e., bias). We expected to replicate Da Silva and Leach's (2012) finding that lay persons exhibited a truth-bias for native language speakers and a lie-bias for second-language speakers. Due to their established biases (e.g., Meissner and Kassin 2002), police officers were expected to exhibit a lie-bias for both groups.

Finally, we hypothesized that police officers would be more confident than lay persons. Generally, officers are more confident about their abilities when asked to reflect back on previous interviews or make case-by-case judgments (e.g., Kassin et al. 2007). Due to their relative unfamiliarity with language proficiency effects within an investigative context, lay persons were expected to exhibit less confidence in their judgments of second-language speakers than native-language speakers. Police officers' confidence levels were not expected to be influenced by speakers' language proficiencies.

Method

Participants

One hundred twenty-one individuals (60 undergraduate students; 61 police officers) participated in this study. Undergraduate students (Mage=19.43 years, SD=1.93) were recruited from the Introductory Psychology participant pool at a Canadian university in exchange for course credit. Police officers (Mage=35.84 years, SD=8.21) were recruited on-site from metropolitan Canadian police departments. They were not compensated. Participants self-identified as belonging to the following ethnic groups: Aboriginal (n=1), Arab/West Asian (n=9), Black (n=5), Chinese (n=4), White (n=71), Korean (n=2), South Asian (n=22), South East Asian (n=3), "Other" (n=4).

Materials

Video Footage We used hidden video footage from Da Silva and Leach's (2012) study; they employed a modified version of Russano et al.'s (2005) cheating paradigm. Pairs of individuals were brought into a psychology laboratory; one member of each pair was actually a confederate. A female experimenter explained that the individuals were to complete a series of logic problems. Although the pair would be left in the room together, the experimenter stressed that they were not to share answers on the test, nor work together in

any way. While the experimenter was out of the room, the confederate either asked the individual for help (cheating condition) or remained silent (no cheating condition), as determined by random assignment. After 15 minutes, the experimenter – who was blind to condition – collected the tests, administered a demographics questionnaire, and left the room. When she returned, she looked concerned and said that she had to check on something in the other room. When the pair was alone again, the confederate observed that the experimenter looked upset and asked the participant what he or she thought was wrong. In the cheating condition, the confederate also stated that they should not tell the experimenter that they had shared their answers. A minute later, the experimenter returned and stated that the same wrong answer had appeared on both tests. She asked the confederate to wait outside and informed the remaining individual that the integrity of the study had been violated and that her professor had been contacted. She asserted that the professor was upset about the event and that it could be considered a case of cheating. Then, she tersely interviewed the individual about his or her actions (e.g., "Did you ask her [the confederate] for help? Did you cheat on the test?").

All interviews were conducted in English: half of the individuals were native English speakers, whereas half spoke English as a second language (i.e., they were enrolled in an ESL program and had been classified as having a low English proficiency using standardized tests). In total, we collected video clips (M length=92.73 seconds, SD=32.17 seconds) of 15 individuals – five lie-tellers and ten truth-tellers – from each language group. Participants from nine different ethnic groups were included: Arab/West Asian (n=12), Black (n=1), Chinese (n=4), South Asian (n=2), South East Asian (n=2), White (n=8), Latin American (n=1). Except in one case, we yoked native-language participants to second-language participants in terms of race and gender.

Lie Detection Decisions Participants were asked to decide whether the target in the video clip was either lying or telling the truth about sharing his or her answers on the test. Correct decisions were coded as "1" and incorrect decisions were coded as "0." For the purposes of our analyses, we calculated the mean proportion of accurate decisions for each participant.

Confidence In addition, participants were asked to rate how confident they were in each lie detection decision on a scale from 0 (not at all confident) to 100 % (extremely confident).

Procedure

Individually, or in small groups, participants were randomly assigned to watch video footage of either native-language speakers or second-language speakers being interviewed about cheating on a test. Participants were told that they would view randomized video clips of targets who were either lying or telling the truth about a transgression and that each target had a 50-50 likelihood of lying or telling the truth. After each video clip, participants indicated whether they thought that the target was lying or telling the truth and rated their confidence in this judgment. Once all 15 clips were presented, participants were asked to provide demographic information. The duration of the study was approximately 45 minutes.

Results

Preliminary analyses including participant gender failed to yield significant results. Thus, all subsequent analyses were collapsed across gender.

Lie Detection Accuracy

A Language (native language vs. second language) x Occupation (student vs. police officer) x Veracity (lie vs. truth) mixed-factors ANOVA was conducted on the mean proportion of correct decisions. Students (M=0.54, SD=0.21) and police officers (M=0.52, SD=0.21) were equally accurate, F(1, 117)=0.72, p=0.398, η_p^2=0.01. Participants were also equally accurate when viewing lie-tellers (M=0.51, SD=0.23) and truth-tellers (M=0.55, SD=0.18), F(1, 117)=2.49, p=0.117, η_p^2=0.02. However, participants who viewed native-language speakers (M=0.59, SD=0.18) were significantly more accurate than participants who viewed second-language speakers (M=0.48, SD=0.21), F(1, 117)=15.51, p< 0.001, η_p^2=0.12. In addition, there was a significant interaction between veracity and occupation, F(1, 117)=16.40, p<0.001, η_p^2=0.12. A paired samples t-test revealed that students were more accurate when judging truth-tellers (M=0.62, SD=0.18) than lie-tellers (M=0.47, SD=0.23), 95 % CI [-0.21, -0.07], t(59)=-4.01, p<.001, d=0.73. There was no significant difference between police officers' performance when viewing truth-tellers (M=0.50, SD=0.18) and lie-tellers (M=0.55, SD=0.23), 95 % CI [-0.01, 0.13], t(60)=1.75, p=0.086, d=-0.24. There were no other significant interactions.

We conducted an exploratory analysis to examine whether observers' own language proficiencies affected accuracy. Observers were categorized as fluent or non-fluent according to their self-reported English language proficiency. An Observer Language X Language ANOVA failed to yield a significant main effect of Observer Language, F(1, 117)=0.96, p=0.330, η_p^2=0.01, or interaction between the factors, F(1, 117)=0.21, p=0.647, η_p^2=0.00. However, these results must be interpreted with extreme caution due to the small number of non-native English speakers in the sample.

Signal Detection Analyses

In keeping with advances in the field (e.g., Meissner and Kassin 2002), a signal detection approach was used to determine how well observers discriminated between lie-tellers and truth-tellers (i.e., d′[1]). This approach was also used to determine bias[2] (i.e., whether observers were more likely to choose one response option). Please see Wixted and Lee (n.d.) for a full description of the signal detection formulas.

Discrimination We conducted a Language x Occupation between-participants ANOVA on d' (i.e., discrimination). Participants were better able to discriminate between truth- and lie-telling native-language speakers (M=0.36, SD=0.58), CI 95 % [0.20, 0.51] than truth- and lie-telling second-language speakers (M=-0.08, SD=0.65), CI 95 % [-0.24, 0.07], $F(1, 117)=15.48$, $p<0.001$, $\eta_p^2=0.12$. There were no other significant main effects or interactions.

In addition, we compared participants' d′ values to zero (i.e., no sensitivity) using one-sample t-tests. Participants were able to discriminate between truth- and lie-telling native-language speakers, $t(60)=4.81$, $p<0.001$, CI 95 % [0.21, 0.50], d=1.24. However, they were not able to discriminate between truth- and lie-telling second-language speakers, $t(59)=-1.00$, $p=0.330$, CI 95 % [-0.25, 0.09], d=-0.26.

Response Bias We conducted a Language x Occupation ANOVA on bias (i.e., β). There were no significant main or interaction effects.

Using one-sample t-tests, we examined whether the groups exhibited specific biases. That is, we compared β values to a score of one (indicative of no bias). Overall, participants exhibited a truth-bias when judging native-language speakers (M=1.40, SD=1.18), $t(60)=2.64$, p=0.011, CI 95 % [0.10, 0.70], d=0.68. They did not exhibit any bias when they judged second-language speakers (M=1.15, SD=0.78), $t(59)=1.46$, $p=0.150$, CI 95 % [-0.06, 0.35], d=0.38. Analyzing group tendencies, we found that students (M=1.16, SD=.78) were not biased, $t(59)=1.58$, p=.120, CI 95 % [-0.42, 0.40], d=0.41. However, police officers (M=1.39, SD=1.19) exhibited a truth-bias, $t(60)=2.55$, p=.013, CI 95 % [0.84, 0.69], d=0.66.

Lie Detection Confidence

A Language x Occupation x Veracity ANOVA was conducted on confidence. There were no significant main effects. There was, however, an interaction between language and veracity, $F(1, 117)=8.47$, $p=0.004$, $\eta_p^2=0.07$. A paired samples t-test indicated that participants were significantly more confident when judging native-language truth-tellers (M=78.10, SD=8.71), than native-language lie-tellers (M=74.52, SD=11.67), CI 95 % [-6.08, -1.10], $t(60)=-2.88$, p=0.005, d=0.35. There were no significant differences in terms of judges' confidence ratings when they viewed second-language truth-tellers (M=75.72, SD=11.86) or lie-tellers (M=77.52, SD=15.31), CI 95 % [-0.95, 4.55], $t(59)=1.31$, p=0.200, d=-0.13. There were no other significant interactions.

Discussion

We examined whether language proficiency and law enforcement expertise had an effect on lie detection. Both police officers and lay persons were more accurate than chance when differentiating between lie-telling and truth-telling native-language speakers; however, they performed at chance when viewing second-language speakers. In addition, they exhibited a truth-bias when viewing native speakers. That is, observers were more likely to believe that these individuals were telling the truth.

Our results suggest that language proficiency does affect lie detection. Regardless of expertise, discrimination performance was poorer when observers viewed second-language speakers (as compared to native-language speakers). This finding replicated Da Silva and Leach's (2012) work and extended it to a new population (i.e., police officers). Research does suggest that second-language speakers exhibit cues that are normally attributed to lying (e.g., gaze aversion) – even when they were telling the truth (e.g., Gregersen 2005). Thus, observers may have been confused when faced with second-language speakers' behaviors and more likely to resort to guessing.

We failed to find support for our hypothesis that there would be lie detection differences between police officers and lay persons. Police officers were expected to perform better due to the high-stakes context. However, police officers were no better able to detect lie- and truth-telling than lay persons. Anecdotal evidence from the officers who were tested suggested that they were witnessing substantial increases in the number of immigrants – who spoke English as a second language – in the region; however, they had not received training about cues to second-language lying. Thus, it was not that these officers had not been exposed to second-language speakers at all. Rather, it may be that simply having experience interacting with non-proficient speakers did not aid performance. Perhaps familiarity with second-language speakers in the absence of explicit training led officers to rely upon incorrect, previously-learned information about how to detect lying in native-language

[1] z(Hits) - z(False Alarms)
[2] exp[d′*0.5*(z(Hits)+z(False Alarms))]

speakers. In turn, their performance was similar to untrained lay persons.

Observers did differ in terms of their biases. Unlike in previous research (e.g., Meissner and Kassin), police officers exhibited a truth-bias and lay persons did not exhibit a bias. In addition, we failed to replicate Da Silva and Leach's (2012) lie-bias toward second-language speakers; this finding could be attributed to the experimental design. In Da Silva and Leach's study, lay persons viewed native and second-language speakers within the same session. It is possible that they noticed the distinct fluency differences between the groups and anticipated that the researchers expected more negative judgments (i.e., "lie" decisions) about second-language speakers. In the current study, observers only viewed native-language speakers or second-language speakers. Thus, it is possible that the previously-found lie-bias related to second-language speakers was an artefact of the testing method rather than a real difference. Yet, it is important to note that even the lack of bias observed in the current study may, in itself, be perceived as disadvantageous to second-language speakers given the corresponding truth-bias associated with native-language speakers. This issue can only be fully resolved with additional research.

Overall, our findings suggest that even law enforcement officials are susceptible to language proficiency effects. Although officers may receive training regarding cross-cultural differences, very little information has been disseminated about linguistic differences. The lack of training is not surprising due to the paucity of research on the topic. However, it does suggest that officers may fail to make adjustments based on the language of the speaker. In fact, our findings indicated that language proficiency had little effect on observers' confidence in their decisions (and, generally, confidence was quite high). Given the limited availability of multi-lingual investigators (Office of the Commissioner of Official Languages 2005), officials may be at a disadvantage when interviewing suspects in a second language. The Reid technique – one of the most prolific lie detection training programs received by police officers – essentially stipulates that the first phase of investigative interviewing should be used to make a decision about a suspect's truthfulness (Inbau et al. 2001). Only when the officer believes that the suspect is lying, should he or she move to the guilt-presumptive interrogation. However, our findings suggest that officers are more likely to make errors when judging second-language speakers. This discovery has two undesirable consequences: compared to native-language speakers, more innocent second-language speakers will move to interrogations and more guilty second-language speakers will go free.

This issue has only recently been identified in the literature; thus, it merits additional research. In particular, the boundary conditions of the findings must be examined. For example, it remains unclear the extent to which experience with second-language speakers moderates proficiency effects. It is possible that groups who are more likely to come into daily, prolonged contact with second-language speakers display a different pattern of results. In Canada, customs officers must meet extensive bilingualism requirements; thus, these officials may be more accustomed to both interacting with second-language speakers and conducting interviews in their own second languages. Bilingual observers may be well-versed in the behaviors exhibited during second-language speech. As a result, they may be less confused or distracted by second-language speakers' behaviors and better able to narrow in on actual, suspicious behavior that is indicative of lying.

Based on these findings, researchers may wish to re-examine existing interviewing contexts and policies. If bilingual speakers were better able to detect second-language speakers' lies, then law enforcement departments could modify hiring practices accordingly. Yet, it may not be important to hire individuals who are actually fluent in multiple languages. Although that approach would ensure that more people could be interviewed in their native languages, it is not practical. Rather, findings may reveal that it is sufficient to employ interviewers who speak an additional language poorly – regardless of the actual language – because they have personal experience with the intricacies of second-language speech. After all, if an interviewer were perfectly bilingual, he or she may make the same errors as unilingual interviewers when faced with second-language speakers (e.g., attributing proficiency-linked behaviors to deception). This issue has yet to be examined empirically, but it would certainly be important from a policy perspective. Researchers have also yet to establish how language proficiency affects the tone of an interview, the move to interrogation, and the likelihood of other consequences (e.g., wrongful conviction). All of these issues must be explored to determine the extent to which language proficiency disadvantages interviewers and suspects.

Conclusions

We examined whether police officers and laypersons could detect the deception of second- and native-language speakers. Our results suggest that the previously-found language proficiency effect is real: observers are better able to discriminate between lie- and truth-telling native-language speakers than second-language speakers. Thus, further research is needed to explore the boundary conditions of this finding and remedies for real-world interviewing contexts in which language may be a factor.

References

Bond CF Jr, Atoum AO (2000) International deception. Pers Soc Psychol Bull 26:385–395

Bond CF Jr, DePaulo BM (2006) Accuracy of deception judgments. Pers Soc Psychol Rev 10:214–234. doi:10.1207/s115327957pspr1003_2

Bond CF Jr, DePaulo BM (2008) Individual differences in detecting deception. Psychol Bull 134:477–492. doi:10.1007/s10979-007-9110-z

Cheng KH, Broadhurst RG (2005) Detection of deception: the effects of language on detection ability among Hong Kong Chinese. Psychiatr Psychol Law 12:107–118

Da Silva CS, Leach A-M (2012) Detecting deception in second-language speakers. Leg Criminol Psychol. doi:10.1111/j.2044-8333.2011.02030.x

Ekman P (2009) Telling lies. Times Books, New York

Ekman P, O'Sullivan M (1991) Who can catch a liar? Am Psychol 46 (9):913–920. doi:10.1037//0003-066X.46.9.913

Global Deception Research Team (2006) A world of lies. J Cross Cult Psychol 37:60–74. doi:10.1177/0022022105282295

Gregersen TS (2005) Nonverbal cues: clues to the detection of foreign language anxiety. Foreign Lang Ann 38:388–400. doi:10.1111/j.1944-9720.2005.tb02225.x

Inbau FE, Reid JE, Buckley JP, Jayne BC (2001) Criminal interrogation and confessions, 4th edn. Aspen, Gaithersburg, MD

Kassin SM, Leo RA, Meissner CA, Richman KD, Colwell LH, Leach A-M, La Fon D (2007) Police interviewing and interrogation: a self-report survey of police practices and beliefs. Law Hum Behav 31:381–400. doi:10.1007/s10979-006-9073-5

Meissner CA, Kassin SM (2002) "He's guilty!": Investigator bias in judgments of truth and deception. Law Hum Behav 26(5):469–480. doi:10.1007/s10979-005-2416-9

O'Sullivan M, Frank MG, Hurley CM, Tiwana J (2009) Police lie detection accuracy: the effect of lie scenario. Law Hum Behav 33:530–538. doi:10.1007/s10979-008-9166-4

Office of the Commissioner of Official Languages (2005) Audit of services to the public at highway border crossings of the Canada Border Services Agency. Author, Ottawa, Ontario Canada

Russano MB, Meissner CA, Narchet FM, Kassin SM (2005). Investigating true and false confession within a novel experimental paradigm. Psychol Sci 16(6):481–486. doi:10.1111/j.0956-7976.2005.01560.x

Saarni C, Salisch MV (1993) The socialization of emotional dissemblance. In: Lewis M, Saarni C (eds) Lying and deception in everyday life. The Guilford Press, New York, pp 106–125

Wixted J, Lee K (n.d.) Signal detection theory [Data file]. Retrieved from http://psy2.ucsd.edu/~kang/sdt/sdt.htm