

Cues to Deception in the Employment Interview

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Candidates' use of deceptive impression management (IM) during the employment interview has been found to influence employment outcomes. Unfortunately, interviewers are often unable to detect when deceptive IM is used. The current study applied research on cues to deception to the employment interview context to examine which micro- and macro-level behavioral cues are indicators of deceptive IM. One hundred nine individuals completed mock employment interviews. We found that interviewees who used deceptive IM exhibited restrained facial behavior (i.e., less smiling), unrestrained verbal behavior (i.e., more speaking errors, less silences), and, unexpectedly, gave off the impression of being less anxious. The results suggest that behavioral cues have promise for future efforts to increase interviewers' ability to detect deception.

1. Introduction

Applicants' use of impression management (IM), or their attempts to present themselves in a positive light, has been extensively studied in the employment interview (Barrick, Shaffer, & DeGrassi, 2009). The research has shown that applicants tend to use IM extensively in interviews, and that IM use can influence interviewers' evaluation of applicants' qualifications for the job (e.g., Levashina & Campion, 2007; Stevens & Kristof, 1995). In some instances, IM involves providing genuine information about oneself to demonstrate ones' qualifications (honest IM), and in other cases, applicants consciously distort their responses to questions to appear more qualified than they really are (deceptive IM; Gilmore & Ferris, 1989; Levashina & Campion, 2006, 2007; Swider, Barrick, Harris, & Stoverink, 2011). Deceptive IM poses a greater problem for organizations, as it increases the risk that less-qualified individuals are selected based on fraudulent information (Levashina & Campion, 2006).

Perhaps more alarmingly, recent findings suggest that interviewers are often unable to accurately detect when applicants use deceptive IM (Roulin, Bangerter, & Levashina, 2014a, b). Yet, Roulin et al. (2014b) high-

lighted that some interviewers did detect deception better than others, and suggested that those interviewers who can be considered better IM detectors may be using and interpreting the right cues while ignoring less appropriate cues. Research on deception detection has indeed identified macro-cues (broad categories of behavior such as appearing nervous) and micro-level cues (discrete behaviors, such as hand gestures) that distinguish liars from truth-tellers (e.g., DePaulo et al., 2003). However, we are aware of no attempts to test the validity of such cues with deceptive IM used in employment interviews.

The present study proposes to fill this gap by examining which cues could be considered valid indicators of deceptive IM tactics used by applicants in interviews. More precisely, we propose to identify which macro- and micro-level behavioral cues correlate with applicants' use of various deceptive IM tactics. This is an important contribution to the body of knowledge on IM because it provides researchers (and practitioners) with the missing piece necessary to spot deceptive applicants. This will subsequently allow for the development and implementation of programs to train interviewers' ability to detect deceptive IM, and indirectly, improve hiring decisions.

2. Deceptive IM in the interview

In this study, we adopted Levashina and Campion's (2007) taxonomy of deceptive IM behaviors. Two types of deceptive IM, *slight image creation* and *extensive image creation*, involve promoting oneself in a deceptive manner. For example, using slight image creation may involve embellishing one's credentials, and extensive image creation includes acts like inventing stories. *Image protection* is used to protect or repair one's image, with strategies such as omitting unfavorable information. Finally, *deceptive ingratiation* involves promoting interpersonal liking in a dishonest manner such as lying about having a common interest with the interviewer.

The use of deceptive IM is highly prevalent in employment interviews. Weiss and Feldman (2006) found that 81% of job applicants admitted to telling at least one lie in the interview, and Levashina, Roulin, and Campion (2012) found that 99% of the applicants in their study used at least one type of deceptive IM. Despite this high prevalence, interviewers tend to underestimate the amount of deceptive IM that applicants use and are inaccurate when attempting to detect it (Levashina et al., 2012). For example, in a lab study where participants recorded their perceptions of IM in real time with videotaped interviews, the use of deceptive IM was correctly detected only 11.8–18.5% of the time across five studies (Roulin et al., 2014b).

Inaccuracy in interviewer perceptions of deception is not a problem in itself; however, research suggests interviewers tend to rely on these (inaccurate) perceptions when evaluating applicants' suitability for the job. For instance, some studies have found that interviewer-perceived slight image creation (Roulin et al., 2014a), as well as extensive image creation and image protection (Roulin et al., 2014b) has negative effects on interview performance when controlling for self-reports of deceptive IM. As such, individuals who are perceived to be lying during the interview, even though they are not, are being penalized.

Given the problem that the incorrect detection of deceptive IM presents, the current study extends the research in this field by investigating which cues could be used as indicators of deception during the interview. As a first step in this direction we review next the extensive literature on cues to deception in everyday interpersonal interactions.

3. Behavioral cues to deception

Deception researchers have long attempted to understand how to differentiate liars from truth-tellers. Vrij, Akehurst, Soukara, and Bull (2004) described liars as experiencing increased cognitive load, due to the mental effort involved in keeping the details of a lie straight.

Sporer and Schwandt (2007) argued that the increased cognitive load required to fabricate responses would lead to behavioral responses such as greater delays in responding to questions and more pauses. Vrij et al. (2004) also argued that liars may exert more behavioral control to avoid nervous fidgeting as compared with truth-tellers. Consistent with this argument, DePaulo et al. (2003) suggested that liars might mistakenly believe that fidgeting is associated with lying and thus overcontrol their movements in order to appear truthful. They argued that liars are therefore more likely to appear as though they are 'holding back.'

There has been extensive investigation into which cues can differentiate liars from truth-tellers, some of which is consistent with the cognitive load and behavioral control explanation. The accumulated evidence has been summarized by DePaulo et al. (2003) in a meta-analysis combining the results of 116 studies. They examined a total of 158 behavioral cues, but only highlighted a handful of them (i.e., about 25% of examined cues) as valid indicators of deception. Moreover, even valid cues were associated with only small to moderate effect sizes and/or were based on a small number of studies. For micro-cues, they showed that liars (vs. truth-tellers) were less verbally and vocally involved, talked less, provided less detail, and repeated themselves more often while using a higher frequency or pitch. Liars also raised their chin more often and had more dilated pupils. However, DePaulo et al. found no difference for eye contact or gaze aversion, hand or body movements, change in posture, blinks, or smiling. For macro-cues, liars looked more nervous or anxious, more insecure or uncertain, more indifferent, less cooperative, and less logical.

A number of studies have engaged in further examination of micro-cues, sometimes highlighting different valid cues. For example, Sporer and Schwandt (2007) conducted a meta-analysis on 11 nonverbal cues to deception and found only three to be valid overall (i.e., liars engaged in less nodding, hand movements, and leg movements). Mann, Vrij, and Bull (2002) found that suspects in police interviews who were lying took longer pauses and blinked less frequently than truth-tellers. Vrij et al. (2004) found that truth-tellers were more likely to move their hands and fingers. These findings are all consistent with the notion of higher cognitive load and increased behavioral control.

Altogether, although there are some valid cues to deception, most of them are not as evident as Pinocchio's growing nose (Vrij, 2008). The general beliefs about the indicators to deception often differ from objective indicators. For instance, people believe that liars engage in *more* body, hand, or head movements, while they actually engage in *less* such movements (Vrij, 2008). Similarly, most people rely on stereotypical cues that are not valid when trying to detect deceit, and even

recommendations provided to professionals who are frequently facing deception (e.g., in police manuals) are mostly misleading (Vrij, Granhag, & Porter, 2010). This is why people are usually not better than chance when detecting deception (Bond & DePaulo, 2008). However, when individuals attempting to distinguish liars from truth-tellers use the right cues of deception, detection can be improved. For instance, police officers are better detectors when they focus on details in suspects' story rather than on stereotypical cues like gaze aversion (Mann, Vrij, & Bull, 2004).

In summary, the extensive literature on deception in interpersonal interactions offers a long list of cues that are (vs. are not) valid indicators to help individuals distinguish truth from lies. Below we propose to translate this literature to applicant IM in employment interviews, in order to provide a theoretical frame to our hypotheses.

4. Behavioral cues to deceptive IM in interviews

The interview is a dynamic interaction during which interviewees engage in a myriad of behaviors. Not only do interviewees communicate responses to questions, but they also emit a wide variety of cues, in the form of verbal and nonverbal behaviors, which influence the interviewers' impressions. Discrete behaviors (or micro-cues) such as eye contact and hand gestures have been found to influence interviewer judgments (e.g., DeGroot & Gooty, 2009). In addition, broader cues (or macro-cues) such as being attentive or dominant also influence interpersonal perceptions (e.g., Ambady & Rosenthal, 1993). But behavioral cues may also indicate that the interviewee is attempting to influence the interviewer using deceptive IM.

One could argue that the cues identified as being correlated with deception in the literature reviewed earlier should also be valid cues of deceptive IM. The same underlying processes of attempting to engage in behavioral control and withstanding a high cognitive load should be present when using deceptive IM, just as it would occur when lying in other interpersonal interactions. Therefore, based on the literature on deception, which suggests that liars may overcontrol their movements, we expected similar controlled facial and hand movements with individuals engaging in deceptive IM.

Hypothesis 1: Deceptive IM will be negatively associated with illustrators, such as facial cues (e.g., nodding, head movement, smiling), and hand cues (e.g., gestures, tapping).

Based on the literature suggesting that liars experience increased cognitive load to keep their lies straight, we expected that individuals' verbal cues when using deceptive IM would be consistent with verbal uncertainty.

Hypothesis 2: Deceptive IM will be positively associated with speaking errors, prolonged silences, and fillers, and negatively associated with speaking quickly and talkativeness.

Our hypotheses also align with DePaulo et al.'s (2003) findings with respect to macro-cues. For example, increased behavioral control could explain why liars appeared more indifferent and less cooperative (i.e., more closed-off). The high cognitive demands of lying could also explain why liars came across as more anxious, more uncertain, and less logical in their explanations. In the current study, we explore a number of macro-cues and expect a similar behavioral pattern of indifference and uncertainty from individuals engaging in deceptive IM.

Hypothesis 3: Deceptive IM will be positively associated with anxiousness, and negatively associated with being animated, attentive, dominant, professional, and supportive.

Whereas the literature on cues to deception is based on a binary outcome (i.e., truthful vs. deceptive message), the taxonomy of deceptive IM involves various forms of tactics (Levashina & Campion, 2007). It comprises assertive tactics oriented toward the interviewee's qualities or experiences (i.e., slight or extensive image creation), defensive tactics to protect the interviewee's image of a qualified candidate (i.e., image protection), and tactics oriented toward the interviewer (i.e., deceptive ingratiation). There are some important similarities between such tactics and the way deceptive messages have been conceptualized in the deception literature. For instance, slight or extensive image creation tactics involve interviewees' exaggerations or inventions when describing experiences or qualifications. This is similar to the majority of experimental situations in the deception literature, where the message senders are asked to describe (truthfully or not) attitudes, facts, images, stories, or personal experiences (DePaulo et al., 2003). Image protection tactics involve omitting or concealing negative aspects of one's background, which is similar to deception used in the context of suspect interrogation by the police, such as hiding information to protect one's image of innocence (e.g., Mann et al., 2004; Vrij, Mann, Robbins, & Robinson, 2006). Yet, the deception literature has not undertaken specific comparisons of the cues associated with lying when describing facts versus concealing them. Moreover, deceptive ingratiation involves tactics to please the interviewer and create the illusion of similarity between the interviewee and the interviewer. This would correspond to a form of 'white lie' used in many interpersonal situations (e.g., pretending to like the dinner prepared by your mother-in-law to make a good impression) that is different from the two forms

described earlier. But again, earlier research has not investigated differences in cues between those various forms of deception. As such, it is unclear if the valid cues described earlier will be related to all forms of deceptive IM or only some of them. Given the lack of theoretical foundation or empirical evidence available, we do not propose specific hypotheses regarding the relations between cues and different forms of deceptive IM. However, we will explore these relations in our study.

Finally, we recognize that it is important to examine the relationships between behavioral cues, deceptive IM, and interview performance. It is possible that some behavioral cues are indicators of deception during the interview and also have an influence on interviewer ratings of candidate suitability (e.g., DeGroot & Motowidlo, 1999; Gifford, Ng, & Wilkinson, 1985). For example, a cue may be positively related to deceptive IM, indicating that it is a cue to deception, while also being positively related to interview performance, suggesting that it has a positive influence on interviewer ratings. This type of scenario will also be explored in the current investigation.

5. Method

5.1. Participants

A total of 119 students from a Canadian university were recruited for this study. Ten participants were removed from the sample due to their response of 'strongly disagree' or 'disagree' to the post-interview filter question, 'I took the mock interview as seriously as I would normally take a real interview.' After removing these participants, the average response for this question was 4.27 on a scale from 1 to 5 (1 = *strongly disagree*, 5 = *strongly agree*). The final sample consisted of 109 participants (70% female; 70% European/Canadian descent; mean age = 19.8); they had participated in an average of 4.5 previous interviews.

Participants were recruited from two sources. Forty-five were senior students in a human resources management course, who were required to complete the mock employment interview and receive feedback on their performance. The remaining 64 students were recruited from a psychology student participant pool, and were given feedback on their performance in the interview for developmental purposes. To increase participants' motivation, three \$50 gift certificates were awarded to the interviewees who achieved the highest interview ratings. In sum, the participants in our study did not engage in a high-stakes interview, but there were safeguards in place to ensure that they took the interview seriously and were representative of entry-level job applicants.

5.2. Procedure

Prior to the study session, participants were given a job posting for a summer job as an administrative assistant. This type of job was chosen as it was likely interesting to the participants as a summer position and was also a job for which they were qualified. Participants were also asked to complete a questionnaire with measures relevant to a different study.

One of four management consultants, with a mean of 1.6 years of consulting experience, conducted each interview. Interviewers were instructed to remain as neutral as possible and use minimal probing so that the procedure was consistent across interviewees. Specifically, they could repeat the question if necessary and say 'anything else?' if answers were abrupt. Each interview consisted of three behavior description and three situational questions, one of each type that assessed a competency related to the position of an administrative assistant (i.e., communication skills, flexibility, and organizational skills). For example, the behavior description question for communication skills was, 'Tell me about a time when you had to present complex information in a simplified manner in order to explain it to others. Describe the situation, what you did, and the outcome.'

5.3. Interview performance

Interviewers took notes during the interview and scored the responses for each question on a Behaviorally Anchored Rating Scale that ranged from 1 to 5. Internal consistency was acceptable for the six questions ($\alpha = .73$). Therefore, scores on the six questions were averaged, resulting in a final interview performance score out of 5.

5.4. IM

After the interview, participants completed a measure of deceptive IM consisting of 14 items from the Interview Faking Behavior Scale (Levashina & Campion, 2007). The scale had four items for slight image creation ($\alpha = .82$), four items for extensive image creation ($\alpha = .73$), three items for image protection ($\alpha = .73$), and three items for ingratiation ($\alpha = .81$). In addition, we computed an overall deceptive IM score by averaging the four types of deceptive IM ($\alpha = .80$).

5.5. Coding of behavioral cues

5.5.1. Micro-cues

Based on a literature search of nonverbal cues and deceptive behavior (e.g., Mann et al., 2002) and nonverbal cues in an interview context (e.g., DeGroot & Gooty, 2009) 13 micro-cues were selected for coding (see

Table 2). A coding scheme used in past research to measure micro-cues was adopted for this study (Feiler & Powell, 2015). Each cue was coded as ranging in frequency from 1 to 4 (1 = *not at all*, 4 = *frequently*). Inter-coder agreement ranged from $\alpha = .62$ to $.94$ (see Table 2). The cues 'clamping hands' and 'tapping hands' had a smaller sample size because the positioning of the video camera for some interviews did not allow for a proper view of the interviewees' hands unless they were gesturing.

5.5.2. Macro-cues

Six macro-cues (see Table 3), which have been assessed in past research (Ambady & Rosenthal, 1993) were coded. Coders rated the extent to which they agreed that the interviewee exhibited each cue from 1 to 5 (1 = *not at all*, 5 = *strongly agree*). Inter-coder agreement ranged from $\alpha = .53$ to $.79$ (see Table 3).

5.5.3. Coders

Nine research assistants participated in a 2-hr training session to learn how to code the behavioral cues. A minimum of five coders were assigned to each video. Reliability for the micro-cues was high ($M_\alpha = .81$, see Table 2). Reliability for the macro-cues was not as high ($M_\alpha = .69$, see Table 3). In their review of the measurement of nonverbal behavior, Baesler and Burgoon (1987) found that although overall reliability in the measurement of cues tended to be high, there was variability in their estimates. They noted that some types of cues are simply difficult to code and are more ambiguous, which is consistent with what we found in this study.

6. Results

Descriptive statistics and inter-item correlations for self-reported IM are shown in Table 1. The distributions of scores for IM were positively skewed. As a result, all reported analyses are using the maximum likelihood robust (MLR) estimation within Mplus version 5 (Muthén & Muthén, 1998–2013). MLR estimation takes into account the nonnormality of the data when estimating

standard errors (Field & Smith, 1994). Because of the nested nature of the data (i.e., interviewers interviewed multiple participants), interviewer was included as a cluster variable, using the complex sampling option Type = Twolevel in Mplus, in all analyses.

Given that the study participants came from two distinct sources (i.e., human resource management students and psychology students), the intra-class correlation (ICC) values were also examined to ensure that participant responses were independent of their cluster. The ICC values (.00 for interview performance, .00–.04 for self-reported IM tactic use) confirmed that clustering did not need to be accounted for across the groups. Therefore, the two groups were merged in all of the study analyses.

The correlations between behavioral micro-cues and self-reported deceptive IM are presented in Table 2. With regards to facial cues, smiling was significantly negatively related to two types of deceptive IM ($r_s = -.20$ and $-.21$, $p < .05$, for extensive image creation and deceptive ingratiation, respectively). The relation between smiling and overall deceptive IM also approached significance ($r = -.19$, $p < .10$). This finding is consistent with Hypothesis 1. However, deceptive IM was not significantly related to any hand cues.

With regards to verbal cues, two cues were significantly related to deceptive IM. Consistent with Hypothesis 2, speaking errors were positively related to extensive image creation ($r = .21$, $p < .05$). In addition, the relation between speaking errors and overall deceptive IM approached significance ($r = .17$, $p < .10$). Speaking errors were also positively related to interview performance ($r = .32$, $p < .05$). However, contrary to expectation, silences were negatively related to slight image creation ($r = -.20$, $p < .05$), deceptive ingratiation ($r = -.28$, $p < .05$), and overall deceptive IM ($r = -.28$, $p < .05$). The relation between silences and extensive image creation and image protection also approached significance ($r_s = -.18$ and $-.17$, $p < .10$, respectively). Finally, the relation between speaking quickly and extensive image creation approached significance ($r = .19$, $p < .10$), albeit in the opposite direction than expected. Interestingly, speaking quickly (but also talkative) was positively related to interview performance scores

Table 1. Descriptive statistics and intercorrelations for outcome variables

Variable	M (SD)	1	2	3	4
1. Slight image creation	2.04 (.91)				
2. Extensive image creation	1.41 (.67)	.45*			
3. Image protection	1.86 (.95)	.43*	.43*		
4. Deceptive ingratiation	1.91 (.87)	.60*	.63*	.50*	
5. Interview performance	3.03 (.67)	-.02	.16	.04	.11

N = 104–109. SD = standard deviation.

* $p < .05$.

Table 2. Correlations between behavioral micro-cues and outcome variables

Cue	α	Mean (SD)	Slight image creation	Extensive image creation	Image protection	Deceptive ingratiation	Deceptive IM	IP
Facial cues								
Blinks	.62	1.22 (0.31)	-.09	-.05	-.12	.00	-.09	-.07
Eye contact	.88	3.05 (0.60)	.03	.07	.14	.08	.11	.18*
Smiling	.89	2.34 (0.69)	-.14	-.20*	-.07	-.21*	-.19 [†]	.16
Nodding	.75	1.55 (0.45)	.03	.01	-.08	-.01	-.02	.13
Head movement	.73	2.67 (0.60)	.02	.12	-.03	-.15	-.02	.26 [†]
Hand cues								
Clamping hands	.87	3.14 (0.78)	-.08	-.20	-.07	-.16	-.15	-.13
Hand gestures	.94	2.69 (0.88)	-.15	.01	.03	-.09	-.07	.30 [†]
Tapping hands	.70	1.21 (0.39)	.00	.00	-.03	.02	-.03	-.05
Verbal cues								
Speaking errors	.74	2.21 (0.50)	.10	.21*	.11	.12	.17 [†]	.32 [†]
Speaking quickly	.84	1.54 (0.63)	-.02	.19 [†]	-.01	.02	.05	.24 [†]
Talkative	.91	1.53 (0.63)	.02	.06	-.07	-.02	-.01	.45 [†]
Silences	.74	1.70 (0.38)	-.20*	-.18 [†]	-.17 [†]	-.28*	-.28*	-.08
Fillers	.90	3.37 (0.62)	.00	.05	.00	-.06	.00	.15

Note: α = inter-coder agreement; SD = standard deviation; IM = impression management; IP = interview performance. Correlations were calculated with maximum likelihood robust estimation and with clustering by interviewer. $N = 103-107$ except for clamping hands ($N = 61$), and tapping hands ($N = 68$).

[†] $p < .10$, * $p < .05$.

Table 3. Correlations between behavioral macro-cues and outcome variables

Cue	α	Mean (SD)	Slight image creation	Extensive image creation	Image protection	Deceptive ingratiation	Deceptive IM	IP
Animated	.79	2.15 (0.82)	-.11	-.01	-.04	-.15	-.10	.29*
Attentive	.58	3.86 (0.63)	.04	.16	.13	.19 [†]	.18 [†]	.38*
Anxious	.71	2.70 (0.61)	-.18 [†]	-.16	-.09	-.21*	-.21*	-.23*
Dominant	.75	2.70 (0.80)	.02	.15	.01	.07	.08	.36*
Professional	.77	3.53 (0.72)	-.18 [†]	.04	-.06	.00	-.07	.50*
Supportive	.53	3.53 (0.55)	-.08	.04	-.10	.06	-.03	.41*

Note: α = inter-coder agreement; SD = standard deviation; IM = impression management; IP = interview performance. Correlations were calculated with maximum likelihood robust estimation and with clustering by interviewer. $N = 103-107$.

[†] $p < .10$, * $p < .05$.

($r_s = .24$ and $.45$, $p < .05$, respectively). In sum, interviewees who engaged in deceptive IM during the interview tended to smile less. They also spoke with more errors and less silences.

The correlations between behavioral macro-cues and self-reported deceptive IM are presented in Table 3. Counter to Hypothesis 3, the cue 'anxious' was negatively related to deceptive ingratiation ($r = -.21$, $p < .05$) and overall deceptive IM ($r = -.21$, $p < .05$). The relation between 'anxious' and slight image creation also approached significance in the same direction ($r = -.18$, $p < .10$). Interestingly, 'Anxious' was also negatively related to interview performance. As expected, the cue 'professional' was negatively related to slight image creation ($r = -.18$, $p < .10$), although this correlation only approached significance. However, the relation between 'attentive' and deceptive ingratiation as well as overall deceptive IM approached significance in the expected direction ($r_s = .19$ and $.18$, $p < .10$, respectively). No other cues were significantly related to deceptive IM.

7. Discussion

The purpose of this study was to extend the research on indicators of deception in interpersonal interactions by examining indicators of deception during the employment interview. Our results revealed that interviewees who were more deceptive during the interview showed a pattern of restrained facial behavior (i.e., less smiling), unrestrained verbal behavior (i.e., more speaking errors and less silences), and, unexpectedly, gave off a general impression of being less anxious. It appears that there may be some similarities and some differences between deceptive IM in an employment interview, and other types of lies or deception.

Our finding that deceptive IM was associated with restrained facial behavior is consistent with the notion from the general deception literature that liars tend to overcontrol their movements. Specifically, interviewees engaging in deceptive IM were less likely to smile. Previous studies on deception (e.g., Sporer & Schwandt,

2007; Vrij et al., 2004) have reported less nodding, hand gestures and limb movements for liars. Although not statistically significant in this study, we also found that slight image creation and deception ingratiation were associated with less hand gestures ($r = -.15$ and $-.09$ respectively).

Interestingly, our findings with regards to verbal behavior were not fully consistent with the idea that interviewees using deception would be under increased cognitive load. Although speaking errors were indicators of deception, individuals engaging in deceptive IM were less likely to take pauses, showing a general pattern of unrestrained verbal behavior. A possible explanation for this discrepancy is that the interview is a unique situation where the interviewee is already experiencing increased cognitive load in order to fulfill the goals of the interview (e.g., answer questions, procure a job offer). Engaging in deceptive IM over and above the normal requirements of an interview may be especially taxing, leading to an inability of a person who is using deceptive IM to reign in their verbal output. Of note, unrestrained verbal behavior, in the form of being talkative, speaking quickly, and making speaking errors was also positively correlated with interview performance, making these particularly difficult cues to interpret.

The most notable difference between our results and existing meta-analyses on cues to deception was that in our study, more self-rated deceptive IM was associated with less observer-coded anxiety. Anxiety is often associated with lying – generally anxiety associated with the fear of being caught (Ekman, 1992). However, the interview context may elicit interview anxiety – a type of anxiety experienced by many job candidates, which is unrelated to lying (McCarthy & Goffin, 2004). It may be the case that interviewees who experience interview anxiety might not even attempt IM – perhaps the cognitive load of managing their interview anxiety is already too high to manage another task – that of fabricating or embellishing their responses. Individuals who appeared to be anxious also performed worse during the interview, which is in line with past research in this field (e.g., Feiler & Powell, 2015; McCarthy & Goffin, 2004). Therefore, it seems that although interviewees who were anxious were less likely to lie, the appearance of anxiety was detrimental to their performance. Conversely, those who appear less anxious are lying more, yet they could be getting away with it and achieving high interview performance ratings.

Our discussion mainly focuses on how behavioral cues are indicators of deceptive IM generally. However, a secondary aim of our study was to explore whether some cues are differentially related to the types of deceptive IM. The type of deceptive IM associated with more micro-cues was extensive image creation. This is of practical importance because extensive image creation involves inventions or intensive exaggerations of

qualifications, and is therefore arguably the most damaging type of deceptive IM for organizations. When examining macro-cues, a lack of professionalism was an indicator of slight image creation specifically ($r = -.18$). Individuals using deceptive ingratiation were also more likely to appear attentive ($r = .19$), which is consistent with the idea that coming across as interested in what the interviewer is saying would increase interpersonal attraction (i.e., the goal of deceptive ingratiation).

The existing literature on cues to deception has primarily looked at comparing liars with truth-tellers, whereas the present study looked at cues in an employment interview context, where all interviewees are (presumably) attempting to create a positive self-presentation. As DePaulo et al. (2003) noted, all attempts at self-presentation are edited to some extent, even if the edited version is entirely truthful. When an interviewer asks a question, the interviewee needs to think about the best answer to the question, including thinking about past job experiences and coming up with a relevant example, and tailoring that example to answer the question asked. Which example to use, and how to describe that example, and how much to self-promote one's own contributions are all decisions that an interviewee needs to make quickly. In this way, the line between truth and lie may be less clear in an employment interview, versus a laboratory setting in which participants are instructed to either tell the truth or lie. Deception in the interview is also complex in that it can take multiple forms, which adds the additional complication of some cues being differentially related to the different types of deceptive IM. Therefore, detecting deception during the interview is a complex task, but our findings are a step in the right direction to increase our ability to do so. Theoretically, our findings show that the mechanisms underlying cues to deceit, such as cognitive load and behavior overcontrol may also underlie the cues to deceptive IM. Practically, we have also highlighted specific cues, such as less smiling and more speaking errors, that are associated with deception in this context. In sum, the cues to deception literature appears to provide insight into methods for detecting deception in employment interviews.

7.1. Limitations and future directions

The main limitation of our study was that participants were students completing a mock interview, rather than an interview with an actual organization. It is possible that how the interviewees acted and the levels of IM interviewees engaged in was different than it would be in a high-stakes scenario. However, similar to other studies (e.g., Van Iddekinge, McFarland, & Raymark, 2007), employing such a sample made it possible for us to videotape the interviews and code them for behavior. We are also confident that participants took the inter-

view seriously, given that all participants responded 'agree' or 'strongly agree' with the question 'I took the mock interview as seriously as I would normally take a real interview.' In addition, we simulated many of the elements of a real job interview with consultants as interviewers, a job description given beforehand, and a monetary incentive to perform well. Mean levels of self-reported IM were also consistent with levels reported in studies with high-stakes interviews (e.g., Roulin et al., 2014a). However, future research should attempt to explore the same research questions within a high-stakes interview scenario.

Another limitation of the current study is that some cues had low reliability (e.g., .53 for 'supportive'). On the other hand, the reliability for the micro-cues was generally quite high (e.g., .94 for 'hand gestures'). Perhaps it is not surprising that the more concrete cues were easier for the raters to agree on. Borman (1979), speaking about performance ratings, suggested that raters will be more accurate in their ratings when the dimensions to be rated are unambiguous, and are clearly understood by the raters. It may be the case that the specific behaviors (e.g., hand gestures, smiling) in our study were less ambiguous and better understood by the raters than were the trait descriptions.

8. Conclusion

The limited ability of interviewers to detect deceit poses an issue for organizations. Even though interviewers are inaccurate in their perceptions, these perceptions influence interview performance ratings, and ultimately the decision to hire individuals for a job (e.g., Roulin et al., 2014a). Although we acknowledge that the behavioral cues in our study should not be used to make definitive decisions about the truth of a candidate's statement in an interview, they are a first step toward being able to determine when a candidate is being deceitful. We hope that our findings can be used in concert with future investigations, perhaps into using probing of candidates' responses to detect deception, to increase interviewers' abilities in this area.

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