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The Impact of Nonverbal Behavior in the Job Interview

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Introduction

In human resources, employee selection plays a major role. Given that an organization functions only with its members, the selection of a member who contributes the most and best to the productivity is aspired (Guion & Highhouse, 2006). Thus, the selection has a powerful impact on the company's outcome, going both ways; as much as a good selection can have a positive impact, a bad selection can have a negative impact on the company.

While a wide array of different employment selection tools are used such as ability tests, personality tests, and assessment centers (Gatewood, Feild, & Barrick, 2011), the job interview is the most frequently used selection tool across countries, jobs, and levels (McDaniel, Whetzel, Schmidt, & Maurer, 1994; Salgado, Viswesvaran, & Ones, 2001). Recruiters value the job interview to a large extent because they believe that a better hiring decision can be made after having met the applicant in person than from evaluating the applicant's biographical data or test scores only (Gatewood et al., 2011). Moreover, research has shown that recruiters tend to trust their first impressions more than objective tests (Dipboye, 1994). Thus, to get in contact with the applicant and to draw inferences about him or her based on his or her interpersonal behavior seems to be a desired aspect by practitioners.

Because the job interview is a dyadic social interaction in which the applicant and the recruiter normally meet for the first time, the nonverbal cues such as one's smiling, nodding, eye contact, body posture (i.e., visual cues) but also voice pitch, speaking rate, and speaking time (i.e., paralinguistic or vocal cues) play an important role. Both the applicant and the recruiter try to form a first impression of their interaction partner. In case

of the applicant's behavior, the recruiters try to infer different characteristics relevant for the job such as a specific personality profile, certain skills, job-relevant competences, but also motivation, values, leadership, and company attraction (Gatewood et al., 2011). Although this information can be drawn from the verbal behavior, the nonverbal behavior is often more important (Arvey & Campion, 1982) because useful information expressed nonverbally can very often not be expressed verbally (Schlenker, 1980). For instance, if an applicant emphasizes in a job interview being very stress resistant while at the same time nervously fidgeting in the chair, the recruiter might have the impression that this applicant might not be the right person for a job in which stress resistance is an important competence.

When using nonverbal behavior to form a first impression, different questions can be raised such as how the applicant's nonverbal behavior is linked to the recruiter's hiring decision? What information is conveyed by the applicant's nonverbal behavior? Which applicant nonverbal cues are used to infer certain characteristics? How accurate are the inferences based on the nonverbal behavior? And, what is the impact of the recruiter's nonverbal behavior on the applicant? We first introduce results concerning the link between the applicant's nonverbal behavior and recruiter evaluation and then present the Brunswikian lens model (1956) based on which we summarize the literature focusing on the role of the applicant's (i.e., sender) nonverbal behavior, the recruiter's (i.e., perceiver) perception, and the judgment accuracy of the recruiter. In a last section we review literature on recruiter nonverbal behavior and how it influences the perception and behavior of the applicant.

The applicant's nonverbal behavior and job interview outcomes

It is widely accepted that the first impression of the applicant by the recruiter is not only based on *what* the applicant says but also on *how* the applicant answers the recruiter's questions (Imada & Hakel, 1977). In other words, applicants convey a first impression through their expressed nonverbal behavior during the job interview. For instance, an applicant who shows a high amount of smiling and uses extensive hand gestures might reveal the impression of being an extraverted person. This first impression can affect different outcomes, such as how favorably the applicant is evaluated.

Research shows that there is a positive relation between applicant *positive nonverbal behavior* and recruiter evaluation. Positive nonverbal behavior can be defined as immediacy behavior which elicits proximity and liking in the interaction partner as for example a high level of eye contact, smiling, confirmative nodding, hand gestures, and variation in pitch and speaking rate (Guerrero, 2005). Applicants who used more immediacy behavior (i.e., eye contact, smiling, body orientation toward interviewer, less personal distance) were perceived as being more suitable for the job, more competent, more motivated, and more successful than applicants using less immediacy behavior (Imada & Hakel, 1977). Forbes and Jackson (1980) showed that selected applicants maintained more direct eye contact, smiled more, and nodded more during the job interview than applicants who were not selected for the job. Moreover, applicants who maintained a high amount of eye contact with the recruiter, who showed a high energy level, were affective, modulated their voice, and spoke fluently during the job interview were more likely to be invited for a second job interview than applicants revealing less of those nonverbal behaviors (McGovern & Tinsley, 1978). Parsons and Liden (1984) found that speech patterns such as

articulation, voice intensity, and pauses predicted recruiter hiring decision, above and beyond objective information (e.g., school and extracurricular activities). Also, selected applicants showed more eye contact and more facial expression during the job interview than non-accepted applicants (Anderson & Shackleton, 1990). Finally, applicants who showed authentic smiles were evaluated more favorably than applicants with a fake or neutral smiling behavior (Krumhuber, Manstead, Cosker, Marshall, & Rosin, 2009).

The impact of applicant immediacy nonverbal behavior on job interview outcome has also been investigated in relation to other factors, such as job or applicant characteristics. For instance, applicants who avoid eye contact with the recruiter when applying for a low-status job (blue-collar job) are not evaluated significantly less favorably compared to applicants gazing regularly at the recruiter. In contrast, applicants who avoid eye contact with the recruiter are significantly less favorably evaluated (compared to applicants gazing regularly at the recruiter) when applying for a high-status job (white-collar job) (Tessler & Sushelsky, 1978). Moreover, applicant smiling behavior had a negative impact on jobs which are more masculine (e.g., newspaper reporter) and for which the job holder is expected to smile less (Ruben, Hall, & Schmid Mast, 2012).

In terms of applicant characteristics, applicants high in communication apprehension who used more nonverbal avoidance behavior (i.e., less talking, less eye contact, less fluent talking) were less effective in mock job interviews and were perceived as less suitable for the job than applicants with low levels of communication apprehension (Ayres, Keereetaweep, Chen, & Edwards, 1998). And, applicant gazing had a reversed effect for male compared to female applicants (Levine & Feldman, 2002): The more the male

applicant maintained eye contact with the recruiter the less he was liked, whereas the more the female applicant gazed at the recruiter the more she was liked.

Applicant nonverbal behavior as an impression management (IM) strategy

Whether nonverbal behavior can be used consciously by applicants to convey a favorable impression has been debated. While some argue that nonverbal behavior is more spontaneous, less under control, and thus less conscious than verbal behavior (Peeters & Lievens, 2006), others argue that even if people are not always fully aware of their nonverbal behavior, they are still able to regulate it, especially for self-presentation purposes (Stevens & Kristof, 1995). Research that confirms the former view shows that even if applicants were told to convey a favorable impression (i.e., using more positive nonverbal behavior) during the job interview, they did not express more or less nonverbal behavior than applicants who were told to be as honest as possible (Peeters & Lievens, 2006). Contrary to this, applicants can use their nonverbal behavior as an impression management (IM) strategy. In this case, they consciously modify their nonverbal behavior in order to positively impress the recruiter (Steven & Kristof, 1995). Nonverbal IM typically includes positive nonverbal cues such as applicant smiling, gazing, affirmative nodding, and gesturing.

In the nonverbal IM literature, applicant nonverbal behavior is mostly measured based on self-report questionnaires rather than on coding of actual behavior. This approach rests on the assumption that positive nonverbal behavior is used in a conscious way to convey a favorable impression. Applicants are asked how much they think they smiled during the job interview or how often they think they had eye contact with the recruiter (Kristof-Brown, 2000; Stevens & Kristof, 1995; Tsai, Chen, & Chiu, 2005). Using such self-reports of

applicant nonverbal behavior, the results look very similar to those obtained by more

objective behavioral observation methods: The more the applicant reported to have used

nonverbal IM during the job interview the better he or she was evaluated by the recruiter

(Steven & Kristof, 1995). Also, nonverbal IM had a remarkable impact on the recruiter's

hiring decision when the job interview was less structured compared to a structured job

interview (Tsai et al., 2005). Finally, nonverbal IM positively influenced perceived

recruiter similarity: the more the applicant expressed positive nonverbal behavior during

the job interview the more he or she was perceived by the recruiter as being similar whereas

nonverbal behavior IM did not increase the perceived qualification of the applicant

(Kristof-Brown, Barrick, & Franke, 2002).

Overall, there are only few studies that did not show an effect between applicant

nonverbal immediacy behavior and a favorable hiring decision (Kristof-Brown et al., 2002;

Sterrett, 1978) and meta-analytical analyses reveal a clear net effect showing that the more

the applicant uses nonverbal immediacy behavior, the better the interview outcome for the

applicant (e.g., better chances of getting hired or of being evaluated positively): $r_w = .40$

(Barrick, Shaffer, & DeGrassi, 2009) and $r_w = .34$ (Frauendorfer & Schmid Mast, 2013b).

How to explain the applicant nonverbal behavior-hiring decision link

Why does the applicant's nonverbal behavior influence how the applicant is evaluated?

Different explanations are provided by the literature.

First, Forbes and Jackson (1980) suggest that the nonverbal behavior helps the recruiter

to judge the applicant more correctly, as the pre-screening of the applicants might not have

delivered much information about how the applicants differ from each other in terms of

competences, education, or work experience. Thus, specific nonverbal cues might make the

differences among applicants more salient, especially in a rather homogenous group of applicants. This is the so-called *salience hypothesis*. Investigating mentally impaired individuals, research confirms this salience hypothesis in that a group of mentally impaired applicants (who were homogenous in their ability to respond and to articulate), their nonverbal behavior explained a greater portion of the variance in the recruiter's hiring decision than in a group of mentally impaired applicants who were heterogeneous (ranging from people who could not answer questions to people who were responsive) (Sigelman & Davis, 1978; Sigelman, Elias, & Danker-Brown, 1980). Thus, in a situation of homogenous applicants, the focus is rather on the nonverbal behavior, because this helps to differentiate between similar individuals (Edinger & Patterson, 1983).

A second explanation is based on the *reinforcement theory*, claiming that recruiters make their decision already at the very beginning of the job interview and reinforce their first impression of the applicant during the job interview based on the applicant's behavior (Webster, 1964). In this case, the nonverbal behavior of the applicant is nothing else than the response to the recruiter's reinforcement during the job interview. This means that the recruiter's first impression can cause the applicant to behave in a manner that confirms the recruiter's impression (behavioral confirmation; Darley & Fazio, 1980; Snyder & Swann, 1978). According to Forbes and Jackson (1980) this second explanation does not necessarily contradict the first one, because the first impression drawn by the recruiter could be based on the salient nonverbal behavior of the applicant at the very beginning of the job interview.

A third explanation considers the *immediacy hypothesis* claiming that through nonverbal immediacy behavior (e.g., eye contact, smiling, hand gestures, closer

interpersonal distance), applicants reveal more proximity and perceptual availability which entails positive affect in the recruiter and therefore leads to a better evaluation (Imada & Hakel, 1977). Put differently, liking might act as a mediator on the relation between applicant nonverbal behavior and hiring decision (Edinger & Patterson, 1983). Also the explanation based on the *immediacy hypothesis* goes hand in hand with the *reinforcement theory* in that the positive affect elicited in the recruiter can result in reinforcement towards the applicant.

Differences in nonverbal behavior expression

Research has not only shown that the applicant's nonverbal behavior has a positive impact on job interview outcomes, but also that the frequency of nonverbal behavior expression varies according to situation and among individuals. How frequently certain nonverbal behaviors are exhibited in a job interview depends on different factors, such as the situation, the applicant personality, the applicant gender, and the applicant race, among other factors.

Situational factors. Situational factors that are typically considered in the job interview are the type of job interview (past-behavioral vs. situational) and the degree of structure in the job interview (structured vs. unstructured). Past-behavioral means that the recruiter addresses questions to the applicant about specific situations in the past with the intention to know how the applicant behaved in those situations. In situational job interviews recruiters ask applicants about possible future situations and how they think they would behave in those situations (e.g., Campion, Cheraskin, & Stevens, 1994; Janz, 1982; Motowidlo et al., 1992). Structured job interviews mean that the recruiter addresses standardized questions to the applicant and evaluates the applicant according to

standardized criteria. In contrast, unstructured job interviews do not follow any preset

procedure (McDaniel et al., 1994). Investigating the frequency of nonverbal behavior IM in

different types of job interviews, no significant difference was found between past-

behavioral and situational interviews. In both types the same amount of nonverbal

impression management was used (Peeters & Lievens, 2006). However, when investigating

the structure of the job interview, significant differences were found in terms of specific

nonverbal cues, such as applicant self-touch (Goldberg & Rosenthal, 1986). Applicants in

the unstructured condition (chat for a few minutes about no specific topic) revealed more

self-touch (hair, face, arm, and hand) than applicants in the formal job interview condition.

Men showed more face touching and women showed more hair touching. Future research

might want to focus on systematic research to obtain a clearer picture about the effects of

different situations on the use of nonverbal behavior by applicants.

Personality factors. Investigating the relation between applicant's personality and the

applicant's nonverbal behavior during the job interview, research shows that more

agreeable applicants express more positive nonverbal behavior during the job interview

(i.e., smiling and maintaining eye contact) (Kristof-Brown et al., 2002), especially when

applicants are told beforehand to evoke a favorable impression (Peeters & Lievens, 2006).

Moreover, high self-monitoring women maintained more eye-contact with the recruiter

than low self-monitoring men and women (Levine & Feldman, 2002). And, high self-

monitoring applicants used more nonverbal behavior during the job interview in general,

than low self-monitoring applicants (Peeters & Lievens, 2006). However, this was only the

case if applicants had specific instructions to use more nonverbal behavior. When there

were no such instructions, applicant self-monitoring was unrelated to applicant nonverbal

behavior (Peeters & Lievens, 2006). So far only little research focused on personality differences in the context of the applicant's nonverbal behavior. Especially personality traits such as extraversion and conscientiousness might be interesting to investigate in the future, because they have shown to predict future job performance. It might be crucial for the recruiter to know how highly extraverted and conscientious applicants express those traits nonverbally.

Gender differences. There are also gender differences concerning the use of nonverbal cues, such as smiling, gazing, interpersonal touch, interpersonal distance, and vocal behavior during the job interview. For instance, female applicants smile and nod more than male applicants (Frauendorfer, Schmid Mast, Nguyen, & Gatica-Perez, 2013b; Van Vianen & Van Schie, 1995). In one study conducted in our lab, female applicants also provided more visual back-channeling (i.e., nodding while speaking), spoke faster and louder, and varied more in their speech loudness than did male applicants. In terms of pitch variation, results were inconsistent; in one of our studies men revealed higher pitch variation than women whereas in another study, the reversed effect emerged. For gazing and speaking time, there seems to be no gender difference (Frauendorfer et al., 2013b; Van Vianen & Van Schie, 1995). Moreover, male applicants keep a larger interpersonal distance from (male) recruiters than do female applicants from (female) recruiters (Levine & Feldman, 2002). In sum, results on gender differences are very similar to the ones found in the general population (Dixon & Foster, 1998; Hall, 1984; Hall & Carter, 2000).

Race differences. In terms of race differences, white applicants maintained more eye contact with the recruiter of both races than did black applicants. Moreover, black and white applicants gazed more at the white recruiter than at the black recruiter (Fugita,

Wexley, & Hillery, 1974). The least amount of eye contact was exchanged when both, the applicant and the recruiter were African American and the most eye contact was exchanged when the applicant and the recruiter were European American (Fugita et al., 1974). Thus, white people use more eye contact in job interviews than do blacks. The latter might have other nonverbal IM strategies to make a good impression (Pelligrini, Hicks, & Gordon, 1970). However, because research on race diversity and nonverbal behavior in job interviews is rare, there is a great need of current research focusing on nonverbal behavior and different ethnicities in the job interview context. Doing so would provide us with a clear insight into how race affects the use of applicant nonverbal behavior.

Summary of role of the applicant's nonverbal behavior in the job interview

Applicant nonverbal behavior seems to have a remarkable impact on the job interview outcome. The more immediacy (or positive) nonverbal behavior the applicant shows during the job interview, the more positive recruiter evaluations of the applicant are. Moreover, different explanations of why applicant immediacy nonverbal behavior positively influences job interview outcome can be found in the literature: the salience hypothesis, the reinforcement hypothesis, or the immediacy hypothesis. Although these explanations have different rationales, they are not necessarily mutually exclusive. They might be considered as an integrative way of explaining the nonverbal behavior-hiring decision link. Finally, which nonverbal behavior is expressed depends on different factors, such as the situation, the personality, the gender, or the race of the applicant. In the next section we will present a Brunswikian perspective investigating what the applicant's nonverbal behavior expresses and what recruiters infer when basing their judgment on the applicant's nonverbal behavior.

Brunswikian perspective towards encoding and decoding

So far, several questions remain unanswered, such as what exactly it is that *recruiters* infer from nonverbal cues, or which nonverbal cues express applicant characteristics, and how accurate recruiters are at inferring applicants' characteristic when basing their judgment on the applicant's nonverbal behavior. Before we present the Brunswikian lens model (1956), it is important to look at which applicant characteristics are normally inferred by recruiters who try to gain a first impression about applicants.

The most frequently measured constructs in the selection process are applicant personality traits and cognitive ability (Ng & Sears, 2010; Van Vianen & Van Schie, 1995) because they have shown to predict later job performance (Barrick & Mount, 1991; Dunn, Mount, Barrick, & Ones, 1995; Nicholls & Visser, 2010; Schmidt & Hunter, 1998; Tews, Stafford, & Tracey, 2011). While cognitive ability and conscientiousness predict job performance in all job categories (Schmidt & Hunter, 1998), extraversion is a valid predictor for jobs requiring social interactions (Barrick & Mount, 1991). Moreover, applicant personality traits do not only influence future job performance but also have an impact on the job interview outcome. For instance, applicants with a high level of extraversion, openness to experience, and conscientiousness use more social preparation (e.g., talking to others) before the job interview and are therefore more successful in the job interview (Caldwell & Burger, 1998). Thus, applicant personality traits are crucial in the job interview context because they are the most frequently assessed characteristics (besides general mental ability) and they have shown to predict the job interview outcome and job performance.

The Brunswikian lens model (1956) posits that target characteristics are expressed through the target's nonverbal behavior on which in turn the perceiver bases his or her

judgment. Thus, the nonverbal behavior mediates the relation between the target's characteristics and the perceiver's judgment. *Encoding* means the relation between the actual target characteristics and the corresponding expressed nonverbal behavior and *decoding* means the relation between the target's nonverbal behavior and the perceiver's judgment. Encoding gives information about how a given target characteristic is expressed in behavioral cues (i.e., cue validity) whereas the decoding process gives information about which behavioral cues the perceiver uses for his or her judgment (i.e., cue utilization). Finally, the relation between the perceiver's judgment and the target's characteristic is an indicator of judgment accuracy. The more cue validity and cue utilization are similar, the higher the accuracy of the perceiver's judgment (Ambady, Hallahan, & Rosenthal, 1995; Gifford, 2011; Sommers, Greeno, & Boag, 1989). Based on the lens model, the following sections review the literature on cue utilization, cue validity, and judgment accuracy in the job interview.

Recruiter assessment through applicant nonverbal behavior

On which nonverbal cues does the recruiter base his or her judgment (i.e., cue utilization according to the Brunswikian lens model)? One study, for instance, has shown that the more the applicant showed eye contact and was facially expressive, the more he or she was perceived as being *interesting, relaxed, strong, successful, active, mature, enthusiastic, sensitive, pleasant, dominant,* and *liked* (Anderson & Sheckleton, 1990). And, applicants showing more postural change were perceived as more *enthusiastic* and more applicant head movement was perceived as being more *sensitive.* Moreover, constructs such as *social skills* of an applicant were inferred based on the applicants' amount of gesturing, and time talked and applicant's *motivation* for the job was based on the

applicant's smiling, gesturing, and time talked (Gifford, Ng, & Wilkinson, 1985). The more

applicants used these nonverbal cues the more they were perceived as being socially skilled

and motivated. Also, a high amount of applicant eye contact predicted perceived

competence and *personal strength* whereas more positive facial expressions predicted

perceived *liking* and *motivation* (Anderson, 1991). Finally, in one of the studies conducted

in our lab, applicant *extraversion* was inferred based on numerous applicant vocal cues

(i.e., more applicant speaking time, less short utterances - such as "mmhh", "ah" - less

speaking turns, and a higher speaking rate), *openness* was inferred through more speaking

time, *neuroticism* was negatively related to speaking time and positively related to number

of turns during the job interview, *agreeableness* was inferred based on visual cues (i.e.,

more smiling and gazing behavior), and vocal cues (i.e., higher speaking rate, higher

variation in speaking rate and more speaking fluency), and *conscientiousness* was

positively related to more nodding behavior and higher speaking rate. *Intelligence* was

inferred based on more nodding, speaking time, a higher speaking rate, less short utterances

(i.e., "mmhh", "ah"), and less turns. (Frauendorfer et al., 2013b).

Investigating composites of nonverbal cues, DeGroot and Gooty (2009) found that

perceived applicant *conscientiousness* and *openness to experience* were positively related to

a composite of applicant visual cues (i.e., overall index of physical attractiveness, amount

of smiling, gazing at the recruiter, hand movement, and body movement towards the

recruiter). And, perceived applicant *extraversion* was positively related to a composite of

applicant vocal cues (i.e., overall index of pitch, pitch variability, speech rate, pauses and

amplitude variability). Moreover, perceived applicant *conscientiousness, openness to*

experience, and *extraversion* mediated the positive relation between applicant nonverbal

behavior (i.e., visual and vocal cues) and the job interview outcome. The more the applicant

revealed vocal and visual cues the more he or she was perceived as being conscientious,

open, and extraverted which in turn lead to a more favorable evaluation (DeGroot & Gooty,

2009). Thus, personality traits are not only inferred based on single applicant nonverbal

cues but also based on composites of different nonverbal cues.

Table 1 provides an overview of studies investigating nonverbal cues upon which

diverse applicant personality traits and characteristics are assessed. As can be seen,

applicant eye contact and facial expressiveness are used to assess most applicant

characteristics (e.g., success, dominance, personal strength, likability). Interestingly,

characteristics which are similar to each other such as intelligence and conscientiousness

are assessed based on the same nonverbal cues, as for instance, applicant nodding and

speech rate. Moreover, extraversion and neuroticism are assessed mostly based on vocal

nonverbal behavior, whereas conscientiousness is mostly assessed via visual nonverbal

cues (except for speaking rate). And, when inferring applicant agreeableness, both visual

and vocal nonverbal behavior is used. Finally, openness seems to be least often assessed by

applicant nonverbal behavior.

Applicant traits and skills expressed in nonverbal behavior

Which applicant nonverbal cues convey the applicant's personality traits and skills

during a job interview? To date, there has been little research conducted answering this

question. Because the illustration of cue validity in job interviews is highly relevant for the

present review, we will briefly summarize research conducted in non-job interview

situations. We focus on so called zero-acquaintance situations because in the job interview, typically, the recruiter meets the applicant for the first time.

One study, for instance, shows that *extraversion* is expressed by a powerful voice, a friendly expression, smiling, and head movements, *agreeableness* is indicated by a high voice, friendly expression, less frequent hand and head movements, and *neuroticism* is expressed via a powerful voice (Borkenau & Liebler, 1992). Another study reports *extraversion* being correlated with a friendly expression, smiling, and a powerful voice, *conscientiousness* with a powerful voice, *neuroticism* with a less friendly expression and a weak voice, and *openness* and *intelligence* with a low voice (Borkenau & Liebler, 1995). In yet another study, *intelligence* was mostly expressed through less fidgeting behavior and more eye contact with the interaction partner (Murphy, Hall, & Colvin, 2003).

Research on cue validity in the job interview is scarce. Using the Brunswikian lens model approach, Gifford, Ng, and Wilkinson (1985) found that applicant *social skills* were positively related to gestures and time talked during the job interview. Moreover, applicant *motivation* was revealed through trunk recline (Gifford et al., 1985). Based on two studies conducted in our lab, a high level of applicant *extraversion* was encoded by more speaking time, higher speaking rate, and more speaking rate variation, a high level of applicant *openness* was revealed by more audio back-channeling (i.e., short utterances while recruiter is speaking) and a louder voice, a higher level of applicant *neuroticism* was shown by less speaking time and higher pitch, a higher level of applicant *agreeableness* is revealed through more audio back-channeling and more smiling, and a higher level of applicant *conscientiousness* was encoded by a higher amount of speaking time and more eye contact

with the recruiter (Frauendorfer et al., 2013b). Finally, applicant's *intelligence* was revealed through less speaking time.

The right side of Table 1 provides an overview of studies investigating the nonverbal behavior that is indicative of actual applicant characteristics. As can be seen, extraversion is mostly expressed through vocal nonverbal behavior. And, constructs similar to each other such as intelligence and conscientiousness are expressed through the same nonverbal cues (i.e., speaking time).

Conclusions have to be drawn carefully because there is little research so far investigating the link between actual applicant personality traits and expressed applicant nonverbal behavior. Moreover, Gifford (2006) argues that the encoding process faces different complexities. For instance, not all nonverbal behaviors might be relevant in all situations. That is, dominant nonverbal behavior might be less relevant in job interviews for a position in accounting than for a position in management. Also, the encoding might depend on the interaction partner, as the target might not encode the same nonverbal cues facing different interaction partners. There might be differences in encoding, depending on how the interaction partner behaves, for instance (e.g., Kanki, 1985; Kenny, 1994). We will indeed show later in this chapter, that the recruiter's nonverbal behavior can affect how the applicant behaves nonverbally as well as the outcome of the job interview for the applicant.

The relation between nonverbal behavior and personality can also vary between different combinations of traits, for instance, a person who is sociable *and* shy reveals different nonverbal behaviors than somebody who is sociable *but not* shy. Certain personality traits might also be encoded by a combination of different nonverbal behaviors (e.g., looking at the interaction partner while speaking) than by one specific nonverbal cue

alone. Encoding might also differ between males and females with a given personality trait encoded by one nonverbal behavior for one sex but not holding up for the other. Finally, personality encoding might differ between cultures. Thus, the lens model approach is affected by different factors that can influence the validity of the inferences drawn. This might be a reason for the fact that it is not yet clear whether the nonverbal behavior explains variance above and beyond applicant competences and verbal content or whether it lowers the validity of the hiring decision (Harris, 1989).

When comparing cue validity and cue utilization in job interviews, it clearly emerges (based on Table 1) that extraversion and neuroticism are assessed based on valid vocal nonverbal cues. Applicant agreeableness, however, is inferred from applicant eye contact, smiling, speaking rate, speaking rate variation, and speaking fluency whereas agreeableness is actually expressed by applicant smiling only. Openness is inferred based on visual and vocal behavior, whereas it is actually expressed through audio back-channeling only. Given this, the question can be asked how accurate recruiters are when inferring applicant characteristics. For many personality characteristics, they seem to use the "wrong", meaning non-diagnostic cues.

Accuracy of recruiter inferences

There is evidence that recruiters perform quite well when assessing applicants based on only short excerpts of a job interview. For instance, Blackman (2002a) found that participants in the role of a recruiter are accurate at assessing the applicant's personality traits after a mock job interview. Also, recruiters were accurate at assessing applicants'

personality traits based on 30-min job interviews (Barrick, Patton, & Haugland, 2000).

And, Gifford et al., (1985) showed that socials skills are accurately assessed by recruiters

after having watched a videotape of a job interview.

Even being provided with only a short glimpse of the applicant behavior, recruiters are

able to accurately assess personality traits: Judges predicted applicant personality traits

based on 10-sec (Prickett, Gada-Jain, & Bernieri, 2000) and 2-min slices of a mock job

interview (Schmid Mast, Bangerter, Bulliard, & Aerni, 2011). Moreover, we showed that

recruiters were able to correctly infer the applicant's future job performance as well as their

personality traits, after having watched a 40-sec thin-slice of an applicant answering two

job interview questions (Frauendorfer & Schmid Mast, 2013a). Interestingly, the first

impression might not become more accurate when the thin-slice behavior is extended.

Research outside the context of the job interview suggests that there is no significant

difference in judgment accuracy when the judgment is based on 30s or 5 min excerpts

(Ambady & Rosenthal, 1992, 1993; Murphy, 2005).

Research on situational (e.g., job interview structure) and personal (e.g., years of

experience of the recruiter) factors influencing judgment accuracy has shown that

personality is more accurately assessed in face-to-face job interviews than in telephone

interviews, in which no visual nonverbal behavior is available (Blackman, 2002a). The

author argues that more behavioral information is available in the face-to face interview,

which results in higher accuracy judgment. Moreover, personality judgment was more

accurate in unstructured compared to structured job interviews (Blackman, 2002b). This

relation was mediated by the amount of applicant talking during the job interview. Thus,

the unstructured job interview might put the applicant more at ease, which increases the

quantity of disclosed behavior (speaking time) and this in turn makes personality judgments

about the applicant more accurate. Interestingly, we found that additional information, such

as a photograph on an applicant's resume does not impact assessment accuracy. Personality

traits and intelligence of the applicant were assessed significantly accurately, regardless of

whether the applicant's resume contained a photograph or not (Schmid Mast, Frauendorfer,

& Sutter, 2013). And, recruiter experience was unrelated to personality judgment accuracy

(Frauendorfer & Schmid Mast, 2013a; Schmid Mast et al., 2011).

Applicant nonverbal behavior does not only provide the recruiter with information

about the applicant's personality traits or intelligence, but can also tell whether the

applicant uses deceptive IM strategies. Especially the nonverbal behavior (compared to the

verbal behavior) is indicative of whether the applicant is dishonest or not (DePaulo, 1992).

Deceptive IM strategies are known to be used by applicants in order to polish their

competency profile (Gilmore & Ferris, 1989; Levashina & Campion, 2007). This dishonest

strategy might decrease job interview validity (Delery & Kacmar, 1998; Gilmore, Stevens,

Harrell-Cook, & Ferris, 1999; Levashina & Campion, 2006; Marcus, 2006). In other words,

the recruiter might miss a highly qualified applicant while selecting a less qualified

applicant who used deceptive IM. Research so far has shown that recruiters are able to

correctly detect lies and that they are better than lay people (Roulin, Bangerter, &

Levashina, in press; Schmid Mast et al., 2011), however, their level of detecting honest

answers is higher than their level of detecting dishonest answers (Roulin et al., in press).

In sum, recruiters are quite good at correctly assessing applicant's personality and at

detecting deceptive answers based on the applicant's nonverbal behavior. Situational

factors such as the structure and the type of the job interview have a remarkable impact on

both, accurate personality judgment and lie detection. The role of the personal factors

regarding the recruiter such as the years of experience show an unclear picture with respect

to accuracy in personality judgment and lie detection.

Recruiter nonverbal behavior

The recruiter's behavior is a crucial factor in the job interview as it is one of the main

reasons for the applicant to accept a job offer (Glueck, 1973). The better the general

impression the applicant has of the recruiter, the more favorably the company is perceived

by the applicant and therefore the more likely the applicant is to accept the job. Moreover,

the recruiter's nonverbal (and verbal) behavior is constantly interpreted by the applicant to

obtain signs regarding the chances to obtain the job (Connerley & Rynes, 1997; Rynes &

Miller, 1983). This can be explained by the fact that applicants often have only little

information about the job offer and they use the recruiter's behavior as a signal to know

more about the employment characteristics. Indeed, it is shown that recruiter (nonverbal)

behavior only has an impact on company attraction when the applicant has little

information about the job and the company (Powell, 1984; Rynes & Miller, 1983).

Moreover, the more the recruiter shows nonverbal behavior such as maintaining eye contact

and smiling, the better the impression the applicant forms about the recruiter and the job

(Gilmore & Ferris, 1989; Keenan & Wedderburn, 1975; Turban, Forret, & Hendrickson,

1998). And, the more nonverbally friendly the recruiter behaves during the job interview,

the more the applicant makes positive inferences about the organization (Goltz &

Giannantonio, 1995). Recruiter listening skills – most likely conveyed through nonverbal

behavior (e.g., smiling, nodding, and facial expression) - had a positive impact on the

applicant's willingness to accept the job offer (Harn & Thornton, 1985). Also, the

recruiter's nonverbal behavior affects the applicant's evaluation of the recruiter and the applicant's nonverbal behavior. The more the recruiter interrupted the applicant during the job interview, the less the recruiter was perceived as being an empathic listener by the applicant (McComb & Jablin, 1984). And, interviewees rated interviewers as least attractive, gave the shortest answers, and were sitting furthest away from the interviewer when the interviewer did not maintain eye contact (Kleinke, Staneski, & Berger, 1975).

Recruiter nonverbal behavior does not only have an impact on the applicant's perception but also on how the applicant is perceived by strangers. For instance, outside observers perceived the applicant as liking the recruiter more when the recruiter shook the applicant's hand at the beginning of the job interview (Staneski, Kleinke, & Meeker, 1977). And, the more the recruiter showed nonverbal approval behavior (i.e., smiling, eye contact, and gesturing) the more the applicant was rated (by neutral observers) as being comfortable and as having conveyed a better impression (Keenan, 1976; Keenan & Wedderburn, 1975; Washburn & Hakel, 1973). Thus, there are also inferences made about the applicant, based on the recruiter's behavior only.

Research investigating moderators that influence the relation between recruiter nonverbal behavior and applicant behavior shows that recruiter nonverbal behavior (cold vs. warm) had a more pronounced impact on applicants with low self-esteem than it had on applicants with high self-esteem (Liden, Martin, & Parsons, 1993). Low self-esteem applicants performed significantly better (based on verbal and nonverbal behavior) when the recruiter showed warm nonverbal behavior compared to a recruiter showing cold nonverbal behavior, whereas for high self-esteem applicant the recruiter behavior (cold vs. warm) did not influence the applicant's performance. In sum, recruiter nonverbal behavior

has a remarkable impact on the applicant perception about the recruiter and the company as well as on the applicant behavior.

Implicit stereotypes and the self-fulfilling prophecy

Often, recruiter nonverbal behavior is elicited by (gender or racial) stereotypes recruiters might harbor. This in turn can influence the applicant's performance during the job interview (Anderson & Shackleton, 1990; Word, Zanna, & Cooper, 1974). For instance, European American interviewers revealed less immediacy behavior (in terms of physical distance, forward lean, eye contact, and shoulder orientation), more speech errors, and spoke less when facing a black applicant compared to when facing a white applicant (Word et al., 1974). This recruiter behavior in turn had a negative impact on the applicant's behavior, as a subsequent study of the same authors showed. Less recruiter immediacy behavior, more recruiter speech errors, and less recruiter speaking time decreased applicants' job interview outcomes, whereas applicants interviewed by a recruiter with nonverbal approval behavior (i.e., smiling, head nodding, and eye contact) performed better in the job interview. In this study both applicants and interviewers were white (Keenan, 1976; Word et al., 1974). This is in line with the behavioral *confirmation theory* claiming that a perceiver's beliefs (e.g., recruiter) can cause the target (e.g., applicant) to behave in a manner that confirms the perceiver's beliefs (i.e., self-fulfilling prophecy; Darley & Fazio, 1980; Snyder & Swann, 1978) and this relation tends to be mediated by recruiter nonverbal behavior. In the same vein, research shows that the more a male recruiter possessed an implicit gender bias, the less well a female applicant performed in a job interview (Latu, Schmid Mast, & Stewart, 2013). The mechanism through which this effect happens is most likely linked to the recruiter emitting subtle nonverbal cues that convey expectations of

incompetence to female applicants who then confirm these expectations – maybe also on an implicit level. In the aforementioned study, male recruiters tended to communicate their implicit gender stereotypes through their interruption behavior. The more the recruiter harbors implicit gender stereotypes the more he tended to interrupt the female applicant, which in turn led to a lower applicant job interview outcome (Latu et al., 2013). And, sexual harassment behavior of the recruiter (i.e., showing flirting behavior) influenced female applicants, as they spoke less fluently, gave lower quality answers, and asked fewer job relevant questions than when the recruiter did not show sexual harassment behavior (Woodzicka & LaFrance, 2005).

In sum, recruiter implicit stereotypes towards the applicant seem to be transmitted through recruiter nonverbal behavior, which in turn can decrease the applicant's performance during the job interview. In other words, recruiter nonverbal behavior can be responsible for the subtle transfer of recruiter attitudes towards the applicant.

Summary

Research shows a clear link between applicant nonverbal behavior and recruiter hiring decision. In particular, immediacy nonverbal behavior, such as a high amount of applicant smiling, nodding, eye contact, hand gestures, and pitch variation are positively related to recruiter evaluation. While one line of research has focused on nonverbal behavior measured based on objective observations (e.g., Anderson & Shackleton, 1990; Forbes & Jackson, 1980; Fugita et al., 1974), another line of research assessed nonverbal behavior based on self-reports which reflects the subjective perception of the applicant to what extent he or she expressed certain nonverbal behaviors during the job interview (Kristof et

al., 2002). Both methods reveal a positive link between applicant nonverbal immediacy behavior and recruiter hiring decision.

The literature has also evidenced factors influencing the extent to which different nonverbal behaviors are expressed in the job interview. These factors include the situation, the personality, the gender, and the race of the applicant. Depending on these factors, one might use more or less nonverbal behavior during the job interview (Fugita et al., 1974; Peeters & Lievens, 2006; Van Vianen & Van Schie, 1995).

Based on the Brunswikian lens model approach (1956) it becomes evident that many more nonverbal cues are used to infer applicant's personality traits than are cues actually revealing these traits. This is line with previous research showing that many more nonverbal cues are used to infer dominance, for instance, than are actually indicative of dominance (Hall, Coats, & LeBeau, 2005). However, even if recruiters use more nonverbal cues than are actually related to applicant characteristics, recruiters are still accurate in assessing applicants (Frauendorfer & Schmid Mast, 2013a; Schmid Mast et al., 2011; Schmid Mast et al., 2013).

Research has not only focused on the applicant's nonverbal behavior in the job interview, but also on the recruiter's nonverbal behavior and its impact on the applicant's perception. Overall, the more the recruiter reveals warm nonverbal behavior (e.g., smiling, maintaining eye contact, and confirms the applicant with head nods) the better is the impression the recruiter conveys and the higher is the likelihood of the applicant to accept the job offer (e.g., Goltz & Giannantonio, 1995; Harn & Thornton, 1985; Keenan & Wedderburn, 1975; Turban, 1992). Nonverbal behavior of the recruiter can also be responsible for a subtle delivery of stereotypical expectations and attitudes. For instance,

interruption behavior of the recruiter can lead to a decrease in the applicant's job interview performance, in case the applicant is not confirming (implicit) racial or gender stereotypes (Latu et al., 2013; Word et al., 1974).

Outlook

So far, most research investigating social perception in the job interview process focused on the recruiter's inference, providing information about which nonverbal cues the recruiters use to infer certain applicant personality traits. By doing so, the lens model approach as a whole has been neglected. That is, cue utilization, cue validity, and assessment accuracy have rarely been investigated in one and the same study (except Gifford et al., 1985). However, only if the lens model approach is considered as a whole can all sides of the lens be investigated and compared. Moreover, recruiters seem to use the nonverbal cues that are not diagnostic to assess applicants – in a sense they use the wrong cues – and are still accurate in assessing applicants' personality. It remains therefore largely unknown how the recruiters make those correct inferences. Future research might want to refer increasingly to the lens model approach, which will enable researchers to compare adequately the cue utilization with cue validity and assessment accuracy (Gifford, 2011) and to assess an even wider array of nonverbal behaviors or nonverbal behavior composites.

One way of facilitating the nonverbal behavior coding necessary for this, would be to welcome methodological innovation by using devices which automatically sense and extract the nonverbal behavior of the applicant. Even if the present book chapter is based on ample research about nonverbal behavior in the job interview, studies which investigate a wide array of nonverbal behavior of the applicant are still scarce. Behavioral research stays

a time and cost intensive endeavor in which human coders have to view the same social interaction over and over again, in order to accurately code different behaviors (Furnham, 2008; Reis & Charles, 2000). We showed that nonverbal behaviors can be automatically sensed and extracted during the job interview (Frauendorfer, Schmid Mast, Nguyen, & Gatica-Perez, in press) and vividly encourage researchers to invest in such promising methods so that behavioral data collection can be conducted as efficiently as possible. *Automated social sensing* is typically done in two steps: first, the applicant's behavior is sensed and recorded based on ubiquitous computing; second, the applicant's nonverbal behavior is extracted automatically based on computational models and algorithms (Gatica-Perez, Guillaume, Odobez, & McCowan, 2007). Ubiquitous computing stands for the computer environment that adapts to the human environment. It does therefore not require the human to enter the computer environment but the computer and the sensing devices are implied in the everyday environment; the surrounding becomes "smart". The automated extraction of the nonverbal behavior is conducted based on algorithms which are developed by computer scientists (Ba & Odobez, 2011; Basu, 2002; Biel, Aran, & Gatica-Perez, 2011).

The advantage of automated social sensing is that numerous different nonverbal cues from several interaction partners can be extracted at the same time and over long recording periods. Moreover, the automated extraction is very quick. Large amounts of data can be processed once the algorithms for data extraction are developed. Also, automated social sensing has shown to be accurate as long as the setup of the devices fulfills the pre-defined conditions, such as the lightning of the room and camera angles.

Using automated social sensing, we could show that similar results are obtained when extracting the applicant's nonverbal behavior automatically compared to when the nonverbal behavior is coded manually. Automatically sensed and extracted applicant immediate nonverbal behavior such as gazing, speech fluency, and tempo variation predicted recruiter hiring decision (Frauendorfer et al., in press). In a further step, we aimed at showing that automated social sensing can also be used as a valid tool in personnel selection. In other words, we were interested in whether the automatically extracted nonverbal behavior of the applicant would also predict future job performance, especially when the job contains social interactions as a main characteristic, such as sales. Based on previous research showing that the nonverbal behavior of sales people predicts job performance (Leigh & Summers, 2002; Peterson, 2005; Taute, Heiser, & McArthur, 2011; Wood, 2006), we assumed that for sales, the applicant's nonverbal behavior revealed during the job interview might be indicative for future job performance. And indeed, using a door-to-door sales job, we found that the applicant's vocal nonverbal cues such as speaking time, audio back-channeling, and speech fluency all together predicted objectively measured job performance (Frauendorfer, Schmid Mast, Nguyen, & Gatica-Perez, 2013a). Even if there has to be done more research on the usage of automated social sensing in job interviews, we showed first evidence that such a novel method can be predictively valid.

Conclusion

The nonverbal behavior in the job interview is crucial as it has a high impact on various outcomes. Whereas the applicant's nonverbal behavior influences how the recruiter evaluates the applicant, the recruiter's nonverbal behavior affects the applicant's perception and even the applicant's performance. Moreover, the applicant nonverbal behavior-hiring

decision link has shown to be influenced by factors such as the situation, personality, gender, and race. Finally, recruiters use more nonverbal cues to infer certain applicant characteristics than are actually indicative of the actual applicant characteristics.

Future research on nonverbal behavior can be facilitated by novel methods such as using automated social sensing which decreases time and cost investment enormously. Automated social sensing and other automated methods should therefore encourage researchers to conduct further behavioral studies in this area.

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Table 1

Overview of Studies Investigating the Relation between Nonverbal Behavior, Inferred Applicant Personality Traits, and Actual

(Applicant) Characteristics

(Applicant) nonverbal cues	Inferred applicant characteristics	Actual (applicant) characteristics
Visual nonverbal behavior[1]	Conscientiousness, openness	
Eye contact	Interesting, relaxed, strong, successful, active, mature, enthusiastic, sensitive, pleasant, dominant, liked, competent, strong, *agreeableness*	*Conscientiousness,* intelligence[3]
Facial expressiveness	Interesting, relaxed, strong, successful, active, mature, enthusiastic, sensitive, pleasant, dominant, liked, motivated	*Extraversion*[3]*, agreeableness*[3]*, neuroticism* (-)[3]
Smiling	Motivation, *agreeableness*	*Agreeableness, extraversion*[3]
Gestures	Social skills, motivation	Social skills, *agreeableness* (-)[3]
Nodding	*Conscientiousness*, intelligence	-

Postural change	Enthusiastic	
Head movement	Sensitive	*Extraversion*[3]*, agreeableness* (-)[3]
Fidgeting behavior		Intelligence (-)[3]
Trunk recline		Motivation
Vocal nonverbal behavior[1]	Extraversion	
Speaking time	Social skills, motivation, *extraversion, openness, neuroticism (-),* intelligence	Social skills, *extraversion, neuroticism* (-), *conscientiousness,* intelligence (-)
Speaking turns	*Extraversion (-), neuroticism,* intelligence (-), communication skills (-)	-
Speaking rate	*Extraversion, agreeableness, conscientiousness,* intelligence	*Extraversion*
Speaking rate variation	*Agreeableness*	*Extraversion*
Speaking fluency	*Agreeableness*	-
Short utterances	*Extraversion (-),* intelligence (-)	-

Audio back-channeling	-	*Openness, agreeableness*
Pitch[2]	-	*Neuroticism, agreeableness[3], openness (-)[3], intelligence (-)[3]*
Voice energy	-	*Openness, extraversion[3], neuroticism[3], conscientousness[3], neuroticism (-)[3]*

Note. This overview summarizes the studies mentioned in the present review (Anderson, 1991; Anderson & Sheckleton, 1990; Borkenau & Liebler, 1992; DeGroot & Gooty, 2009; Gifford, et al., 1985; Frauendorfer et al., 2013b; Murphy, Hall, & Colvin, 2003). Characteristics in italic refer to the big five personality traits (Costa & McCrae, 1992).

[1] Results of DeGroot and Gooty (2009) investigating visual and vocal nonverbal behavior as composites.

[2] High value in pitch means a higher voice. A positive correlation therefore indicates that the more the applicant characteristic is present the more it is expressed through a higher voice.

[3] Results from non-job interview studies (Borkenau & Liebler, 1992; Murphy, Hall, & Colvin, 2003)