



**A GLIMPSE INTO SOCIAL INTERACTIONS  
IN THE SELECTION INTERVIEW:  
DISFLUENCIES, STORYTELLING, LAUGHTER  
AND THEIR IMPACT ON INTERVIEW OUTCOMES**

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by

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## **ABSTRACT**

Participants in a selection interview, especially applicants, are highly motivated to display information that is to their advantage and will deploy impression management tactics. Yet, recruiters have trouble detecting such tactics. One possible explanation is that some tactics may be more subtle and less obvious to perceive, and thus are unintentionally neglected. This dissertation aims to offer a glimpse of some relevant but little-known interactional aspects that participants deploy during a selection interview and to explore their impact on interview outcomes. I explored three phenomena: disfluencies, storytelling and laughter.

First, I explored the applicants' responses to past-behavior questions. These questions, from an interactional point of view, require applicants to respond in a specific, narrative format. In article 1, one specific type of disfluencies, response delays, predicted applicants' response type. As time went by, applicants were less likely to produce the appropriate narrative response. Response delays also negatively predicted recruiters' hiring evaluations. Responding in time and with the appropriate response type has positive outcomes for applicants in terms of self-presentation goals. Results also pointed out the difficulties applicants experienced to produce narratives on demand.

In article 2, I manipulated two ways of enhancing the applicants' storytelling: probing and information. Recruiters' interactive behavior (probing) increased the applicants' production of stories and the variety of narrative elements they contained. Recruiters have a key role to play to enhance the applicants' storytelling. The applicants' level of information did not increase the production of stories. However, information decreased the production of pseudostories. Additionally, results confirmed that finding a relevant episode to narrate was a major issue for applicants.

Finally, I explored a rather original but promising interactional aspect, laughter (Article 3). In the selection interview, laughter is more likely to be produced by applicants (compared to recruiters), by women and on transitions (between different phases of the interview). Furthermore, shared laughter episodes initiated by recruiters were positively related to their hiring evaluations, whereas applicants' unilateral laughter was negatively related to recruiters' hiring evaluations. Laughter is not produced randomly and constitutes a subtle way to manage impressions in the selection interview.

Key results and implications for selection interviews, limitations and future research perspectives are discussed.

*Keywords:* selection interview, social interaction, impression management, hiring recommendations, disfluencies, storytelling, laughter.



## RESUME

Les participants à un entretien de sélection, particulièrement les candidats, sont hautement motivés à démontrer des informations à leur avantage et vont déployer des tactiques de gestion d'impressions. Toutefois, les recruteurs ont des difficultés à détecter de telles tactiques. Une explication possible est que certaines tactiques sont plus subtiles et moins évidentes à percevoir, et sont ainsi inintentionnellement négligées. Cette thèse vise à donner un aperçu de certains aspects interactionnels pertinents mais peu connus que les participants déploient au cours d'un entretien de sélection et à explorer leur impact sur les résultats de l'entretien. J'ai exploré trois phénomènes : les disfluences, la production de récits et le rire.

Tout d'abord, j'ai exploré les réponses des candidats aux questions comportementales. Ces questions, d'un point de vue interactionnel, exigent des candidats qu'ils répondent dans un format spécifique, narratif. Dans l'article 1, un type particulier de disfluences, les délais de réponse, a prédit le type de réponse des candidats. Au fil du temps, les candidats étaient de moins en moins susceptibles de produire la réponse narrative appropriée. Les délais de réponse ont également eu un effet négatif sur les évaluations d'embauche des recruteurs. Répondre à temps et avec le type de réponse approprié a des résultats positifs pour les candidats en termes d'objectifs d'auto-présentation. Les résultats soulignent également les difficultés qu'ils ont éprouvées à produire des récits sur demande.

Dans l'article 2, j'ai manipulé deux manières d'encourager le récit des candidats : les relances et l'information. Le comportement interactif des recruteurs (relances) a augmenté la production de récits des candidats et la variété des éléments narratifs qu'ils contenaient. Les recruteurs ont un rôle-clé à jouer pour favoriser la production de récits des candidats. Le niveau d'information des candidats n'a pas augmenté la production de récits. Cependant, l'information a diminué la production de pseudo-récits. De plus, les résultats ont confirmé que se remémorer un épisode pertinent à raconter était un problème majeur pour les candidats.

Enfin, j'ai exploré un aspect interactionnel plutôt original mais prometteur, le rire (article 3). Dans l'entretien de sélection, le rire est plus susceptible d'être produit par les candidats (par rapport aux recruteurs), par les femmes et lors des transitions (entre les différentes phases de l'entretien). De plus, les épisodes de rires partagés initiés par les recruteurs étaient positivement liés aux évaluations d'embauche, tandis que les rires unilatéraux des candidats étaient négativement liés aux recommandations des recruteurs. Le rire n'est pas produit au hasard et constitue une façon subtile de gérer les impressions dans l'entretien.

Les principaux résultats et les implications pour les entretiens de sélection, les limites et les perspectives futures de recherche sont discutés.

*Mots-clés* : entretien de sélection, interaction sociale, gestion d'impressions, recommandations d'embauche, disfluences, production de récit, rire.



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## INTRODUCTION

*“It is rare, even unthinkable, for someone to be hired without some type of interview”*

*(Huffcutt & Culbertson, 2010, p. 185)*

To be hired as a PhD candidate and a teaching assistant at the University of Neuchâtel, and have the opportunity to write this dissertation, I experienced a well-known situation: a selection interview. The interview is currently the most widely used hiring method in personnel selection (Judge, Cable, & Higgins, 2000; Posthuma, Morgeson, & Campion, 2002). Between 80% and 100% of organizations used interviews during the selection process (Cook, 2009; Dany & Torchy, 1994). Given its widespread use, the selection interview is a mandatory step towards the labor market for applicants.

As any selection method, the selection interview enables organizations to draw accurate inferences about applicants' future job performance, to identify those who perform best and eventually to make hiring decisions (Muchinsky, 2006). By carefully choosing and using scientific and valid selection methods, organizations are able to hire performant employees, minimize the risk of errors and make considerable financial savings (Hunter & Hunter, 1984). Paying a special attention to personnel selection along with developing good practices can therefore have a range of benefits for organizations.

Initial research on selection interview used to focus on the psychometric properties, in an attempt to help organizations to develop and use the best practices possible. The psychometric perspective notably increased the understanding of interview validity (Anderson, 1992; Harris, 1989; Hunter & Hunter, 1984; Judge et al., 2000). However, this perspective totally eluded the social and interactional aspects of the selection interview.

To fill this gap, a growing line of research emerged, focusing on the reciprocal social interaction between applicants and organizations (Anderson, 1992; Anderson, Lievens, Van Dam, & Ryan, 2004; Derous & De Witte, 2001; Herriot, 1993). Researchers became interested in particular in how the participants in this specific interaction, especially applicants, present themselves and manage impressions to convey a favorable image in order to achieve positive outcomes (i.e. to receive a job offer). The *social process* perspective is promising, but still recent and further investigations are needed.

This thesis aims to offer a glimpse of some relevant and sometimes unintended interactional aspects that are deployed by participants during a selection interview and to explore their impact on interview outcomes. More specifically, I focused on hiring recommendations made by recruiters after the interview because these are one of the strongest factors affecting the final hiring decision made by the organization (Cable & Judge, 1996; Dipboye, 1994). I combined experimental data (mock interviews) and field data (real interviews). I explored in detail the following three phenomena: disfluencies, storytelling and laughter. All three have in common to occur during selection interview, to have interactional properties and to influence impressions conveyed and interview outcomes.

In the following pages, I first present the psychometric perspective (1.) with a focus on the key notions of predictive validity (1.1.) and structure (1.2.) and I address the limitations of this perspective (1.3.). Second, I present the social process perspective (2.) with a focus on the key notions of self-presentation (2.1.) and impression management (2.2.). Then I introduced the articles in two frameworks (3. and 4.): *responding to past-behavior questions* (Article 1 and Article 2) and *laughing (together)* (Article 3). Finally, I discuss the theoretical and practical contributions and limitations of these studies and the future perspectives in selection interview research.

# 1. THE PSYCHOMETRIC PERSPECTIVE

The selection interview was first considered as an *instrument* and was defined as “a selection procedure designed to predict future job performance on the basis of applicants’ oral responses to oral inquiries” (McDaniel, Whetzel, Schmidt, & Maurer, 1994, p. 599). The interview was employed to identify and evaluate several applicants characteristics such as knowledge, skills, personality, abilities, and results thus lead to the decision to select or reject applicants (Cook, 2009; Wiesner & Cronshaw, 1988). Researchers focused on interview psychometric characteristics, with the aim of developing the best possible practices. They especially investigated the predictive validity of the interview. This led to major advances in the understanding of interview properties, the main one being the notion of structure in interview.

In the next subchapters, I address the key notions of predictive validity (1.1.) and structure as moderator of interview validity (1.2.). Finally, I address the limitations of this perspective (1.3.).

## 1.1. Predictive validity

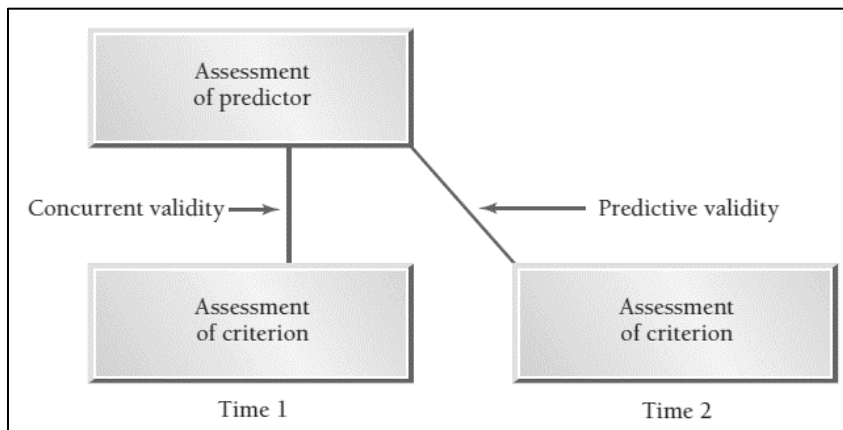
*“From the point of view of practical value, the most important property of a personnel assessment method is predictive validity: the ability to predict future job performance”*

*(Schmidt & Hunter, 1998, p. 262).*

A specific type of validity, predictive validity, is a key notion in personnel selection. To understand predictive validity and its implication for selection interview, it is first important to clarify what criteria and criterion validity are.

Criteria are defined as “standards used to help make evaluative judgments about objects, people, or events (Muchinsky, 2006, p. 57). Every time an evaluation is made, the criteria is used as reference points (Muchinsky, 2006), consciously or not, and the success of the process rely on the validity of the criteria (Muchinsky, 2006; Robertson & Smith, 2001; Schmidt & Hunter, 1998). Criterion validity refers to the capacity of an instrument to differentiate people based on relevant criteria (Muchinsky, 2006). In other words, criterion validity is the degree to which a criterion, called predictor, relates to a second criterion that we want to predict. There are two types of criterion validity: concurrent validity and predictive validity (Figure 1).

Concurrent validity is when the assessment of criterion and the predictor are achieved at the same time. Conversely, predictive validity is when the assessment of the criterion is obtained after the assessment of the predictor (Cronbach & Meehl, 1955).



**Figure 1.** Concurrent and predictive criterion validity (Muchinsky, 2006, p. 95).

In personnel selection, the most frequently used criterion is the applicant's future job performance (Bertua, Anderson, & Salgado, 2005; Hunter & Hunter, 1984; Marchese & Muchinsky, 1993; McDaniel et al., 1994; Muchinsky, 2006; Posthuma et al., 2002; Schmidt & Hunter, 1998) and the predictor is the applicants' performance in selection methods, for instance score in a test, or a recruiter's evaluation after an interview. At the time of the selection processes (Time 1), the measure of the job performance (Time 2) is not available. For this reason, we talk about predictive validity.

Interviews historically faced huge concerns about predictive validity (Anderson, 1992; Harris, 1989; Hunter & Hunter, 1984; Judge et al., 2000) and were often criticized for the low validity level they attained, varying between studies from .14 to .23 (Dunnette, 1972; Hunter & Hunter, 1984; Reilly & Chao, 1982). Interviews also raised criticism because of the multiple bias and adverse effects of irrelevant characteristics that might come into play (Judge et al., 2000) and might influence interviewers evaluations. These characteristics include gender, age, ethnicity or physical attractiveness (Cesare, 1996; Huffcutt & Roth, 1998; Lin, Dobbins, & Farh, 1992; Singer & Sewell, 1989). For example, the applicants' appearance was found to impact hiring recommendations: overweight applicants, especially in the case of female applicants, were less likely to be recommended for hiring (Pingitore, Dugoni, Tindale, & Spring, 1994).

However, a change of direction appeared in the early nineties, with a more optimistic perspective on interviews (Harris, 1989; Huffcutt & Arthur, 1994). Since then, researchers have

been increasingly confident about the predictive validity of selection methods, especially selection interview, thanks in particular to the expanding use of meta-analysis (Bertua et al., 2005; Huffcutt & Arthur, 1994; Huffcutt, Roth, & McDaniel, 1996; Hunter & Schmidt, 1990; Marchese & Muchinsky, 1993; McDaniel et al., 1994; Wiesner & Cronshaw, 1988). A consensus progressively emerged. Selection interviews can attain high levels of validity if they are structured, with predictive validity ranging from .35 to .62 (e.g. Huffcutt & Arthur, 1994; Levashina, Hartwell, Morgeson, & Campion, 2014; McDaniel et al., 1994). Additionally, structure reduces evaluation bias of gender, age, or ethnic origins (Huffcutt & Roth, 1998) and effects of similarity (Lin et al., 1992; Posthuma et al., 2002). With structure, interview evaluations are more objective and are therefore fairer to applicants.

### **1.2. Structure as moderator of interview validity**

*“One of the consistent findings in the history of research on the employment interview is that structured interviews are much more reliable and valid than unstructured interviews”*

*(Levashina et al., 2014, p. 242)*

Structure is defined as “the reduction in procedural variability across applicants, which can translate into the degree of discretion that an interviewer is allowed in conducting the interview” (Huffcutt & Arthur, 1994, p. 186). Structure involves a range of practices (Campion, Palmer, & Campion, 1997) designed to influence the content of the interview or the evaluation of applicants, and may include several aspects. Campion et al. (1997) proposed 15 measures to introduce structure in interviews including for example to base questions on a job analysis, to ask exact same questions to each applicant, to limit probing, follow-up questioning and elaboration on questions, to control ancillary information, to rate each answer or use multiple scales, or to take detailed notes.

Huffcutt and Arthur (1994) proposed a model of four global levels of structure, depending on the standardization of the interview questions and the response scoring (Figure 2). Regarding interview questions standardization, level 1 was defined by having no restraints and is commonly called unstructured interview. Level 2 was defined by limited restraints, for example the standardization of the topics that have to be covered during the interview. Level 3 was defined by pre-planned questions, but not asked in the same exact order and with leeway regarding probing and asking alternatives questions. Level 4 was defined by complete

standardization: all applicants were asked the exact same questions in the exact same order. Level 1 of response coding standardization was defined by a global evaluation of the applicants' responses including the information from the whole interview. Level 2 was defined by the evaluation of some pre-planned criteria, like for example some relevant job dimensions. Level 3 was defined by complete standardization: all applicants' responses were evaluated according to pre-planned scales (for example BARS). An aspect of structure is specifically relevant and deserves to be pointed out: predictive validity for level 3 is .56, and for level 4 is .57, implying a "ceiling effect of structure" (Huffcutt & Arthur, 1994, p. 188) and suggesting that practitioners may keep some discretion during the interview without affecting validity.

		Interview Question Standardization			
		1	2	3	4
Response Scoring Standardization	1	Structure I	Structure II	Structure II	Structure III
	2	Structure II	Structure II	Structure III	Structure III
	3	Structure II	Structure III	Structure III	Structure IV

**Figure 2.** Levels of structure from Huffcutt and Arthur (1994).

All these measures are supposed to increase the interview psychometrics properties. This suggest that structure can easily be implemented into the interview, but it also highlights the complexity and multidimensionality of this concept.

### **1.3. Limitations of the psychometric perspective**

The psychometric perspective led to several major advances in personnel selection and selection interview is probably the method that benefited the most of this line of research. Still, this perspective has a range of limitations.

First, even if structure can be rather easily introduced into interview in multiple ways, it often involves limiting interactional options for participants. Regarding this limitation, the "most potential negative effects are in terms of users reactions" (Campion et al., 1997, p. 691). Indeed, structured interviews are less appreciated by applicants and often trigger negative reactions that can impact, among other things, the attractiveness of the organization (Conway & Peneno, 1999; Smither, Reilly, Millsap, Pearlman, & Stoffey, 1993).

Second, structure might also generate negative reactions from practitioners. They remain reluctant to use structured interviews, despite their high validity (Dipboye, 1994;

Lievens & De Paepe, 2004). Recruiters have a clear preference for unstructured interviews because they provide in particular more flexibility, are easier to prepare, are less boring, allow recruiters more discretion over questions and a more personal contact with applicants (Campion, 1988; Dipboye, 1994; Lievens & De Paepe, 2004). This manifestation illustrates the well-known gap between scientific researchers and practitioners (Roulin & Bangerter, 2012; Rynes, Bartunek, & Daft, 2001).

Nevertheless, the use of structured interviews in practice remains difficult to quantify precisely. Scientific researchers have a clear, multidimensional definition of what structure is. Practitioners' definition seems not so clear and unequivocal (Bangerter, Krings, Petetin, & Blatti, 2008). Structure has a positive connotation among practitioners, while the lack of structure is associated with disorganization or incompetence. Still, their attitudes towards structure do not reflect reality. It is socially desirable to mention that they are using structured interviews and they are reluctant to mention the use of unstructured interviews. As a result, they use less structured interviews than what they report. Moreover, practitioners have different perceptions of what structure is. They report some aspects of unstructured interviews as structured. The use of structured selection interviews may be overestimated (Bangerter et al., 2008).

In summary, the psychometric perspective increased the understanding of what constitutes valid and predictive interview, but there is still work to do to efficiently diffuse scientific results into practice (Lievens & De Paepe, 2004; Roulin & Bangerter, 2012).

Last but not least, this perspective highly focused on the organization side of the interview while completely ignoring the fact that the selection interview is not a unilateral process (Anderson et al., 2004; Derous & De Witte, 2001; Herriot, 1993). Rather, both recruiters and applicants actively participate and coordinate during the interview and influence its outcomes. In the next chapter, I present the social process perspective, which addresses these limitations and focuses on the social aspects ignored by the psychometric perspective.



## 2. THE SOCIAL PROCESS PERSPECTIVE

*“We still have limited knowledge about the specific type of interactions that occur within the interview [...] the subtle techniques employed by applicants to create positive impressions on the interviewer have received little research attention, even though they may be of considerable importance in interviewer judgments”*

*(Gilmore & Ferris, 1989, p. 557)*

The 1980's were a turning point for research in selection interview. Although the question of predictive validity remained discussed (Campion, Campion, & Hudson, 1994; Conway & Peneno, 1999; McDaniel et al., 1994; Posthuma et al., 2002; Wiesner & Cronshaw, 1988), researchers began to increasingly emphasize the importance of the social, interactional and dynamic nature of the selection interview. A new perspective emerged: the selection interview as a social interaction.

“Two people are ‘interacting’ when the behavior of one influences the behavior of the other and vice versa [...] If two people have never interacted, they do not have a relationship” (Berscheid & Ammazalorso, 2001, p. 309). A growing interest developed for the behavior of both applicants and recruiters and how they interact with each other to negotiate the interview. The interview constitutes the first and crucial step of a potential future employment relationship (Herriot, 1993; Higgins & Judge, 2004).

Selection interview was henceforth defined as “a dynamic exchange in which interviewers and applicants engage in social interaction, gather information, and create and form impressions” (Levashina et al., 2014, in Wilhelmy, Kleinmann, König, Melchers, & Truxillo, 2016, p. 314). This definition highlights the centrality of interpersonal interaction. More than just an instrument, the selection interview is a poorly understood social interaction and needs to be investigated (Gilmore & Ferris, 1989; Harris, 1989; Kacmar, Delery, & Ferris, 1992; Wayne & Kacmar, 1991).

Social interactions are by nature ambiguous, thus creating a need of information for clarification (Keltner & Gross, 1999; Keltner, Haidt, & Shiota, 2006). The selection interview is no exception. It often corresponds to the first physical encounter between applicants and recruiters, typically after the initial applicants have been screened out. Both parties are motivated to find out more about each other, but the interview remains an “ambiguous situation

in which neither party typically has extensive, first-hand knowledge of the other” (Judge & Ferris, in Higgins & Judge, 2004, p. 623). They thus seek to gather information to determine whether the budding relationship is worth pursuing (Higgins & Judge, 2004) and to provide information that is to their advantage (Bangerter, Roulin, & König, 2012).

In this ambiguous context, people are highly motivated to present themselves in a favorable manner, to manage perceptions and convey favorable impressions (Gilmore & Ferris, 1989; Goffman, 1956; Higgins & Judge, 2004; Judge & Ferris, 1993). Studies on self-presentation were especially relevant to understand how participant to a social interaction express themselves in particular and controlled ways, in order to manage impressions and display positive identities (Goffman, 1956). Additionally, such studies facilitated the emergence of a new research field in the domain of selection interview: impression management (Barrick, Shaffer, & DeGrassi, 2009; Ellis, West, Ryan, & DeShon, 2002; Gilmore & Ferris, 1989; Higgins & Judge, 2004; Kristof-Brown, Barrick, & Franke, 2002; Levashina et al., 2014; Millar & Tracey, 2006; Schlenker, 1980; Stevens & Kristof, 1995; Wayne & Kacmar, 1991).

Studies clearly demonstrated that efforts in self-presentation and impression management deployed by applicants have a strong and positive impact on performance evaluations and the interviewers’ judgments (Baron, 1989; Gilmore & Ferris, 1989; Stevens & Kristof, 1995; Wayne & Kacmar, 1991). In the next subchapters, I address the key concepts of self-presentation (2.1.) and impression management (2.2.).

## **2.1. Self-presentation**

*“When an individual enters the presence of others, they commonly seek to acquire information about him or to bring into play information about him already possessed [...] he will have many motives for trying to control the impression they receive of the situation”*

*(Goffman, 1956, pp. 1-8)*

“The general notion of self-presentational motivation is that people attempt to present themselves as favorably as they can” (Baumeister, 1982, p. 21). Generally, people engage in self-presentation for two major motives (Baumeister, 1982). First, people seek to please the audience. Conveying a favorable image might help obtaining the potential rewards controlled by the audience. Second, people seek to construct and present their ideal self. They are

motivated to achieve as much congruence as possible with their ideal self. Furthermore, they seek to gain the affection of the audience and develop attractiveness. As a result, “a wide range of social behavior is determined or influenced by these self-presentational concerns [...] People use their social behavior as a means of communicating information about (or an image of) themselves to others” (Baumeister, 1982, p. 3).

Goffman (1956) proposed a famous metaphor describing the everyday social life as a theatre. Participants into social interactions are actors, playing roles and controlling information they convey about themselves, their *face*. Face is defined as “the positive social value a person effectively claims for himself by the line others assume he has taken during a particular contact. Face is an image of self-delineated in terms of approved social attributes-albeit an image that others may share” (Goffman, 1967, p. 5). People are highly motivated to display a positive image of themselves, and therefore have to work on their face to maintain it and prevent threat. Face is not defined once and for all, “face is something that is emotionally invested, and that can be lost, maintained, or enhanced, and must be constantly attended to in interaction” (Brown & Levinson, 1987, p. 61). One can lose face, referring to the process by which impressions conveyed are not sustained and do not correspond to reality, entering in contradiction to one another. A person losing face has to manage and resolve these contradictions and restore coherence into the interaction. Yet generally, participants collaborate to maintain faces in interaction (Goffman, 1967). Finally, Goffman (2005) famously distinguished between two ways people use to express themselves: they can *give* impressions (often verbal, containing symbols intentionally conveyed) or they can *give off* impressions (often some kind of leaks, a range of actions initially performed for other reasons than the conveyed information, or that is unintentionally conveyed). Using both of these expression activities, people can intentionally convey distorted information (Goffman, 2005), meaning that people can lie or fake during the interview.

Research on self-presentation showed that people are motivated to present themselves in the most favorable manner possible during social interaction, and selection interview is no exception to that. The interview is by definition an evaluative situation including rewards, which is known to be especially relevant for self-presentation concerns (Baumeister, 1982). “Both the interviewer and the applicant are attempting to present positive images to each other so that the interviewer attracts the best applicant and the applicant gets the best job offer” (Gilmore & Ferris, 1989, p. 557).

## **2.2. Impression management**

In line with the studies on self-presentation, the concept of impression management emerged in the 1980s. This concept refers to "conscious or unconscious attempts to control the images that are projected in social interactions" (Schlenker, 1980, p. 6). As for self-presentation, the ambiguous and high-stake context of selection interview situation encourages the use of impression management tactics to manage perceptions and convey favorable impressions (Gilmore & Ferris, 1989; Goffman, 1956; Higgins & Judge, 2004; Judge & Ferris, 1993).

Both parties of a selection interview benefit from impression management: applicants in order to get a job offer, and recruiters in order to diffuse a positive image of the organization and therefore motivate the best applicant to accept the job offer (Gilmore & Ferris, 1989). Nevertheless, research on recruiters' impression management is more recent than research on applicants, considering that "from the perspective of the interviewer, a successful interview is one in which the applicant is not only evaluated accurately, but also leaves the interview room with a favourable image of the organization and feeling good about him- or herself" (Wilhelmy, Kleinmann, Melchers, & Götz, 2017, p. 2).

Conversely, the applicants' impression management was widely studied, with a large interest on the tactics they deployed and their impact on interview outcomes. A common distinction is made between honest and deceptive tactics (Levashina & Campion, 2007; Roulin, Bangerter, & Levashina, 2015; Roulin & Bourdage, 2017).

Honest tactics refer to tentative to "create an impression of competence and fit by emphasizing positive true past experiences and values similarities with the organization" (Roulin & Bourdage, 2017, p. 3). It includes honest self-promotion, honest ingratiation, and honest defensive impression management. Honest self-promotion refers to "positive statements to describe oneself, one's future plans, or one's past accomplishments" (Stevens & Kristof, 1995, p. 589). This tactic is deployed to elicit attribution of desirable characteristics, job-related abilities or competences in an attractive way (Roulin, Bangerter, & Levashina, 2014; Roulin & Bourdage, 2017; Stevens & Kristof, 1995). Honest ingratiation refers to tactics designed "to evoke interpersonal attraction or liking" (Stevens & Kristof, 1995, p. 589). Applicants may compliment or praise recruiters to promote reciprocal attraction (other-enhancement) or use opinion conformity in terms of values to promote interpersonal attraction. Finally, honest defensive refers to "using excuses, apologies, or justifications to repair one's image when threatened by negative questions of concerns from the interviewer" (Roulin & Bourdage, 2017,

p. 4). Applicants try to get rid of the responsibility of a negative behavior or event (excuses) or to minimize the impact of it (justifications) (Stevens & Kristof, 1995)

Deceptive tactics, or faking, refer to tentative to “pretend to have qualifications, experiences, or fit that they do not possess” (Roulin & Bourdage, 2017, p. 3). It includes slight or extensive image creation, image protection, and deceptive ingratiation. Slight image creation refers to “embellishing, overstating, tailoring, or enhancing one’s qualifications or experiences to appear more qualified for the position or a better fit with the organization” (Roulin & Bourdage, 2017, p. 3). Extensive image creation has the same goal but goes a step further and refers to inventions of the applicants’ qualifications or experiences. They may even borrow someone else’s experience and pretend to be theirs (Levashina & Campion, 2007; Roulin & Bourdage, 2017). Deceptive ingratiation refers to false and insincere use of ingratiation tactics. Finally, image protection refers to “omitting, hiding, or distancing oneself from negative events in one’s past to defend one’s image of a good candidate” (Roulin & Bourdage, 2017, p. 3).

A large majority of applicants have been found to engage in impression management (Ellis et al., 2002; Levashina & Campion, 2007; Stevens & Kristof, 1995), and these behavioral strategies may represent the most effective way applicants can use to influence recruiters’ evaluations. However, different impression management tactics can have a very different impact.

Applicants most frequently deploy self-promotion tactics (Stevens & Kristof, 1995) and these are known to positively impact recruiters’ evaluations (Gilmore & Ferris, 1989; Kristof-Brown et al., 2002; Roulin et al., 2014; Stevens & Kristof, 1995). In the high-stake context of the selection interview, self-promotion is a behavior that recruiters expect (Ralston & Kirkwood, 1999). Applicants are supposed to “sell” themselves and highlight their competencies, therefore engaging themselves in self-promotion. Applicants who do not self-promote may even send the message that they are not interested in the job (Bozeman & Kacmar, 1997). Ingratiation also positively influences the recruiters’ evaluations (Stevens & Kristof, 1995). Still, these tactics may be at risk if overused or overstated and may provoke the opposite effect. Thus, there is a need for applicants to stay subtle to be efficient. « One of the strongest predictors of interviewers' evaluations and recommendations is their subjective impressions of applicants' interview performance [...] when applicants promoted interpersonal attraction (e.g., by emphasizing their similarity) or highlighted their motivation and competence, interviewers subjective impressions and evaluations became more positive » (Stevens & Kristof, 1995, p. 588).

Impression management perceptions are notoriously subjective. Recruiters' perceptions of the applicants' use of impression management do not converge with the self-perceptions of the applicants (Roulin et al., 2014; Stevens & Kristof, 1995). As an example, applicants may think they use a high level of impression management tactics while interviewers evaluate it as minimal or average (Stevens & Kristof, 1995). Recruiters often fail to recognize such tactics or to detect faking (Roulin et al., 2014, 2015; Roulin & Bourdage, 2017), which could constitute a threat for the validity of the interview. Finally, the applicants' self-perceptions do not predict the interview outcomes, but the evaluation of the recruiters do (Roulin et al., 2014; Stevens & Kristof, 1995). This is important, because hiring recommendations reported by the recruiters are one of the strongest factors affecting the final hiring decision made by the organization (Cable & Judge, 1996; Dipboye, 1994).

Even if self-presentation and impression management were widely studied, there is still much to know about the all social processes participants deploy in the selection interview. Recruiters still have trouble detecting applicants' impression management. One possible explanation is that some tactics may be more subtle and less obvious to perceive, and thus are unintentionally neglected by recruiters and researchers. This dissertation aims to explore little-known interactional aspects of the selection interview that can impact recruiters' evaluations. In the next chapters, I will present three articles on three phenomena: disfluencies (Article 1), storytelling (Article 2) and laughter (Article 3).

### 3. RESPONDING TO PAST-BEHAVIOR QUESTIONS

*“Tell me about a situation where you were unsuccessful at first but were able to become successful.”*

*(Huffcutt, Culbertson, & Goebel, 2015, p. 32)*

One of the most salient of the social processes involved in the selection interview is the question answering sequences. These include two major goals: information exchange and self-presentation (Smith & Clark, 1993). Recruiters ask questions to applicants, who in turn, are motivated to honor the request and give relevant information (information exchange). But they are also interested in influencing how they appear to recruiters (self-presentation), given that their responses are used by recruiters to evaluate them and to make hiring decisions (Coetzee & Kriek, 2010).

The questions asked by the recruiters have a strong impact on interview validity (see 1.2). A specific aspect used to improve structure in selection interviews is the type of questions asked (Campion et al., 1997; Taylor & Small, 2002). In that sense, an innovation in structured interviewing is the behavioral interview (Harris, 1989; Janz, 1982; Motowidlo et al., 1992). In this type of interview, job analysis is used to identify relevant competencies, for example via the critical incidents method (Campion et al., 1994; Flanagan, 1954; Motowidlo et al., 1992). Applicants are asked a series of *behavioral questions* to gauge their mastery of those competencies. These questions can be either about their actions in past job-related situations (so-called *past behavior questions*, e.g., *Can you tell me about a time when you had to deal with an angry client?*) or hypothetical situations that require them to imagine and tell the recruiter what they would do (so-called *situational questions*, e.g., *Imagine you have to deal with an angry client*). The behavioral interview evidences high predictive validity (Huffcutt, Conway, Roth, & Klehe, 2004; Huffcutt, Weekley, Wiesner, Degroot, & Jones, 2001). While both situational and past-behavior questions attain high levels of validity, past-behavior questions has a substantially higher validity than situational questions (Taylor & Small, 2002). This reinforces the claim that past-behavior is a good predictor of future behavior (Campion et al., 1994). The applicants' responses are then evaluated by recruiters, e.g., via Behaviorally

Anchored Rating Scales (BARS; see for example Debnath, Lee, & Tandon, 2015; Schwab, Heneman, & DeCotiis, 1975).

Past-behavior questions create opportunities for applicants to depict specific competencies they mastered in a past-situation, to talk about actions undertaken and related events that transpired, using a specific ability: storytelling. “Although interviewing offers many opportunities for applicant storytelling, this skill is especially vital when interviewers ask behavioral description questions because such questions demand answers in the form of stories” (Ralston, Kirkwood, & Burant, 2003, p. 8). Indeed, from an interactional point of view, past-behavior questions in particular invite participants to produce *narrative responses*, i.e. to *tell a story*. A story is defined as a “discourse that is organized more or less chronologically and tells what characters did in a particular situation and what came of their actions. Stories may be very brief or extended, and they may depict scenes, characters, actions, and consequences that vary in richness and detail” (Ralston et al., 2003, p. 11).

Behavioral interviews are increasingly used and are more easily accepted by practitioners than *structured* interview (Roulin & Bangerter, 2012). As a result, communication skills and more specifically storytelling skills will become increasingly important for applicants (Bangerter, Corvalan, & Cavin, 2014; Ralston et al., 2003), and represent a very effective technique to present themselves in a positive manner and convey favorable impressions. In addition to being an effective technique of self-promotion, storytelling may also allow to stand out from the pool of applicants and serves as a memory trigger (Stevens & Kristof, 1995). Stories positively impact recruiters’ hiring evaluations, making storytelling an important ability for applicants to success in selection interviews (Bangerter et al., 2014; Ralston et al., 2003).

Nevertheless, little is known about how applicants actually respond to past-behavior questions, i.e. about their storytelling abilities, and the few studies exploring applicants’ response parameters show inconsistent results (Bangerter et al., 2014; Stevens & Kristof, 1995). Additionally, the ambiguous, evaluative and high-stake nature of selection interview can prevent applicants to produce relevant responses to the recruiters’ questions. Therefore, a better understanding of the applicants’ response parameters and storytelling abilities is needed, which could also trigger practical improvements: applicants might be trained to produce better responses, i.e. stories, and recruiters might be trained to help applicants produce stories (for example by probing) and act as coaches (Bangerter et al., 2014; Kessler, 2006; Ralston et al., 2003; Stevens & Kristof, 1995). This requires considering the selection interview as a dynamic and fundamentally social situation, where participants (applicants and recruiters) are

interactants who both influence the interview process and entail consequences beyond the interview itself.

In the next subchapters, I present studies conducted to explore how applicants respond to past-behavior questions. First, I explored applicants' disfluencies and their impact on the production of narrative responses and recruiters' evaluations (Article 1). Then, I explored the applicants' storytelling tendencies and manipulated two factors to increase the production of stories, probing and information (Article 2).

### **3.1. Disfluent responses to job interview questions and what they entail (Article 1)**

In this study, Adrian Bangerter, Eric Mayor and I improved our understanding of applicants' disfluencies and their consequences in the selection interview.

Disfluencies are described as any phenomena that "interrupt the flow of speech" (Fox Tree, 1995, p. 709). Despite having first been considered as disturbances for an effective communication (Brennan & Schober, 2001; Brennan & Williams, 1995; Clark, 1994; Fox Tree, 1995; Schober & Bloom, 2004), disfluencies could actually be an important source of information in conversations and trigger inferences (Brennan & Williams, 1995; Smith & Clark, 1993). Disfluencies occur in spontaneous speech. One situation where spontaneous speech is produced is question answering. Even if applicants might prepare and anticipate some interview questions, they will probably not prepare each utterance, therefore producing spontaneous speech and disfluencies (Fox Tree, 1995). We focused on one specific disfluency: the applicants' response delays.

Question answering is a social process with two goals (information exchange and self-presentation, Smith & Clark, 1993) and as for any conversation in general, turn-taking in question answering implies a very precise timing. Transitions between speakers have very little overlap or gap (De Ruiter, Mitterer, & Enfield, 2006; Sacks, Schegloff, & Jefferson, 1974). To respect all these constraints, applicants are expected to produce the appropriate response within an appropriate timeframe. Thus, the applicant's response delay might signal trouble and trigger negative inferences from recruiters, for instance ignorance or non-cooperation (De Ruiter et al., 2006; DeGroot & Motowidlo, 1999; Smith & Clark, 1993), thus threatening the self-presentation goal. We assumed that disfluencies convey important information during selection interview, which are used by recruiters to make inferences about applicants and have therefore consequences beyond the interview itself.

We explored question answering in the context of behavioral interview. Past-behavior questions are increasingly used (Roulin & Bangerter, 2012) and involve a specific response type. Applicants are expected to produce a narrative response to past-behavior question, i.e. to tell a story (Ralston et al., 2003). But little is known on how applicants actually respond to such questions and results tend to demonstrate a suboptimal use of storytelling (Bangerter et al., 2014). Telling stories on demand is not an easy task and applicants may face several problem: they might not recognize if a story is warranted and be hesitant to engage in an extended turn at talk (Mandelbaum, 2012), or they might have trouble searching in their memory for a relevant past-episode to relate and prepare their speech accordingly.

We were interested in studying if the applicants' response delay can predict their response type and the hireability ratings given by the recruiters. We first investigated the applicants' response delay in details and described the events happening during that delay. We then investigated two Research Questions. For Research Question 1, we explored if response delays could predict the response type (narrative vs. non-narrative). For Research Question 2, we explored if response delays could predict the recruiters' hiring evaluations.

Descriptive results demonstrated a large variation of applicants' response delays, ranging from a standard pause of less than 1 second to gaps up to 35 seconds. The long observed pauses might be explained by the high-stake nature of the selection interview. Recruiters draw inferences and make evaluations of their suitability using the applicants' responses. Thus, their responses having important outcomes, applicants take more time to reflect and plan their responses than in everyday conversation.

Regarding our first Research Question (1), results demonstrated that response delays significantly predict applicants' response type. As time goes by, applicants are more likely to produce non-narrative response, i.e. inaccurate response to past-behavior questions. Results suggest that applicants faced a trade-off between finding the appropriate episode to recount but delay the response and respond quickly but in a less appropriate manner. Applicants seem to be aware of timely expectations but struggled to recall and produce an accurate response in time. Regarding our second Research Question (2), results demonstrated that applicants' response delays significantly predict recruiters' hiring recommendations. The longer the delay, the more recruiters make negative inferences.

Thus, respecting timing and expected response type contribute to positive self-presentation for applicants. These results extend the understanding of disfluencies in the selection interview and their impact beyond the interview. Disfluencies constitute some kind of

paradata (Couper, 2000; Schober, Conrad, Dijkstra, & Ongena, 2012) or given off information that have not been investigated much in the context of selection interview and would benefit from further investigations. I continue the discussion in the general discussion (5).

### **3.2. Encouraging the production of narrative responses to past-behavior interview questions: Effects of probing and information (Article 2)**

In Study 2, Adrian Bangerter, Sandrine Ribeiro and I improved our understanding of applicants' storytelling tendencies in response to past-behavior interview questions.

Previous results demonstrated the suboptimal use of applicants' storytelling abilities in response to past-behavior interview questions (Bangerter et al., 2014; Brosy, Bangerter, & Mayor, 2016). There is a need to better understand mechanisms underlying the use (or not) of storytelling and to develop ways to help applicants to produce stories. Research suggested that applicants' storytelling might benefit to both parties. Applicants might use storytelling as a self-promotion tactic to demonstrate their mastery of relevant competencies and to stand out from the pool of applicants (Stevens & Kristof, 1995). Recruiters might also benefit from the applicants' stories by having more complete information about their competencies. They will therefore be able to make more accurate evaluations and hiring decisions.

Applicants face multiple obstacles when producing stories on demand. The first obstacle is of cognitive nature. Applicants have to remember a relevant past-episode, prepare and produce the response. Given the high-stake nature of the selection interview, this might represent a cognitive overload affecting the memory research. As a result, applicants often recount the most available event they recall (Huffcutt, Culbertson, Goebel, & Toidze, 2016; Kahneman, 2003), which is not necessarily the most appropriate to recount. The timing adds additional pressure: applicants have to find an appropriate response and they have to do it in a timely matter. Extensive delays threaten the self-presentation goal and lead to negative inferences from recruiters (Brosy et al., 2016; Smith & Clark, 1993).

The second obstacle is from social, interactional nature. Storytelling activities are by nature collaborative. At the story initiation, applicants might hesitate to take initiative and to embark in an extensive turn at talk (Bangerter & Gosteli-Corvalan, 2017). Then, when the story is under way, applicants will need the help of the listener, i.e. the recruiters, to progress through the story (Bavelas, Coates, & Johnson, 2000). The recruiters' actions, such as probing, contribute to the success of applicants' storytelling.

From this observation, we aimed to develop and test interventions that could prevent these obstacles and encourage the applicants' use of storytelling. We also aimed to respond to Article 1 limitations. Previous research suggested multiple ways to elicit relevant applicants' behavior (De Kock, Lievens, & Born, 2018; Lievens, Schollaert, & Keen, 2015).

The first intervention concerned the recruiters' behavior. Research suggested that "by actively taking part in the social interaction, accurate raters may elicit more and better (relevant) cues from those being judged" (De Kock et al., 2018, p. 10). We assumed that a more interactive behavior from recruiters, i.e. by using probes, might encourage and facilitate the applicants' storytelling. The second intervention concerned information we gave to applicants before the interview to relieve the cognitive workload during the interview. Research suggested that behavior elicitation might take the form of general level instructions that are given to evoke the desirable behavior (Lievens et al., 2015; McFarland, Yun, Harold, Viera Jr, & Moore, 2005). We gave applicants information about what would be expect from them during the interview (such as competences or response type) and time to prepare their responses. We assumed that more informed and prepared applicants would benefit from time before the interview. They could therefore focus on recounting the past-event they thought about and would be more efficient to produce stories. Furthermore, information increased interview transparency and ensured an equally transparent level between applicants. Under such condition, transparency was found to help recruiters gather more accurate information and increase applicants' performance (Klehe, König, Richter, Kleinmann, & Melchers, 2008).

For obvious ethical and internal validity concerns (Podsakoff & Podsakoff, in press), we used experimental methodology to test our interventions. We developed two experimental designs. We used simulated behavioral interviews, where participants played the role of applicants and experimenters the role of recruiters. We manipulated two variables: the experimenter's interactive behavior during the interview (*probing*) in Study 1 and the level of information participants have before the interview (*information*) in Study 1 and Study 2. We investigated their effect on the applicants' production of stories.

Results of Study 1 demonstrated that probing induced participants to tell more stories and to include more narrative variety in their stories, but there was no effect of information. In Study 2, we developed more detailed information conditions and results demonstrated that more information induced participants to tell less pseudostories (generic descriptions of situations) but did not lead to more stories. Analyses of comments made by participants after viewing their

videotaped performance suggested that finding an appropriate example to narrate is a major problem.

Storytelling on demand is very challenging for applicants. This might be problematic because past-behavior questions diffuse well in practice (Roulin & Bangerter, 2012) and storytelling skills will become increasingly decisive for applicants. Yet, our results suggest that we could help and encourage them in some ways to produce stories. Recruiters have a key role to play to elicit applicants' relevant behaviors. By accurately probing applicants, they encourage them to produce the appropriate behavior to adopt: respond to past-behavior questions with stories. Recruiters can be trained and act like "coaches" for the applicants (De Kock et al., 2018; Lievens, 2001; Ralston et al., 2003) to elicit relevant behavior and therefore obtain relevant information available to evaluate applicants. In contrast, the manipulation of information was not successful, despite decreasing the proportion of pseudostories. Nevertheless, our results are encouraging and call for new studies in the field. I continue the discussion in the general discussion (5.).



## 4. LAUGHING (TOGETHER)

*“We humans do not laugh uncontrollably or randomly. Rather, [...] people laugh in systematic, sequentially, and socially organized patterns. [...] Through laughing, and laughing together, we contribute to ongoing creation, maintenance, and termination of interpersonal relationships. We also display, read, and negotiate identity”*

*(Glenn, 2003, p. 2)*

In contrast to question answering, laughter is not one of the most salient of the social processes involved in the selection interview. Indeed, laughter has been little studied in this context. Worse still, early research on laughter notoriously faced the major challenge of being considered as trivial and not serious enough to deserve scientific attention (Glenn, 2003). “Laughter might be seen as an uncontrolled, spontaneous behaviour not suitable for analysis” (Adelswärd, 1989, p. 109).

Fortunately, research widely demonstrated that laughter not only deserves to be seriously considered and investigated, but may also contribute more broadly to the understanding of human communication (Coser, 1959; Glenn, 2003; Jefferson, 1979; Provine, 2016; Provine & Fischer, 1989; Schenkein, 1972; West, 1984) and has a range of physical, psychological, spiritual and relational benefits (Glenn & Holt, 2013). Furthermore, laughter may also contribute to the understanding of social processes engaged in the selection interview (Glenn, 2010).

In the next subchapters, I first introduce laughter in social interactions (4.1) detailing in particular how people accomplish laughter in social interactions. Then, I present a study (Article 3) conducted to explore laughter in the selection interview (4.2).

### 4.1. Laughter in social interactions

Laughter is fundamentally social (Glenn, 2003). We laugh 18 times a day on average (Martin & Kuiper, 1999; Provine & Fischer, 1989). Laughter is contagious: We laugh mostly in presence of other people and we are more likely to laugh when other people around us are laughing (Glenn, 2003). Therefore, it is not surprising that researchers mostly investigated

laughter in social interactions (Adelswärd, 1989; Glenn, 2003; Glenn & Holt, 2013; Haakana, 2002). Furthermore, most of the research was conducted in the field of conversational analysis, making turn-taking (Sacks et al., 1974) essential to study laughter. Previous research demonstrated that laughter, despite being a spontaneous phenomenon, is anything but random and is sequentially organized (Jefferson, 1979; Schenkein, 1972; West, 1984). “Laughter can occur before, after, or during talk. Turn-final or ‘post-completion’ laughter is particularly common in interaction. Laughter alone can also constitute an entire turn, generally as a response to a preceding turn. On occasion laughter occurs after a pause or a turn by another participant where it appears to orient to a prior turn by the laughter” (Glenn & Holt, 2013, p. 6).

Previous research also explored how people accomplish laughter in social interactions and demonstrated that laughter can be produced either on a voluntary basis or in response to an invitation (Jefferson, 1979; West, 1984). Laughter is volunteered when produced by a single person and including no laughter from other, in the turns before or after the production of laughter. Laughter is an invitation when produced to be shared. For instance, people strategically place laughter to produce laugh invitation (Jefferson, 1979) and respond to it. “One technique for inviting laughter is the placement, by speaker, of a laugh just at completion of an utterance, and one technique for accepting that invitation is the placement, by recipient, of a laugh just after onset of speaker's laughter” (Jefferson, 1979, p. 93). Invitations can be accepted or declined. An invitation is accepted when the response in the following turn is a laughter, i.e. the recipient laughs along. Silence is not sufficient to refuse an invitation. An invitation is declined when the recipient actively refuse to laugh, even after the speaker's laughter (Jefferson, 1979; West, 1984). “One technique for declining a postcompletion invitation to laugh is the placement of speech, by recipient, just after onset of speaker's laughter, that speech providing serious pursuit of topic as a counter to the pursuit of laughter” (Jefferson, 1979, p. 93).

This distinction underlies an essential characteristic of laughter: sharedness. People can laugh alone (unilateral laughter) or together (shared laughter). “Unilateral laughter is used to modify verbal expressions or attitudes and can help us in handling ambiguities and tension” (Adelswärd, 1989, p. 107). A well-known situation where reciprocal laughter is not implied is troubles-telling (Jefferson, 1984). The speaker is allowed to laugh at his own problems, using laughter as a regulation strategy. Reciprocal laughter from recipients might suggest that the problem is not taken seriously. For instance, in medical interactions, patients may use laughter while complaining of symptoms, but doctors do not laugh along, suggesting they take seriously

into account their patients' health issues (Haakana, 2001, 2002). Another situation is self-depreciation (Glenn, 2003; Glenn & Holt, 2013). Here again, the speaker is allowed to laugh at himself, but a reciprocal laughter would be a sign of acceptance from the recipient. "Laughter is used in problematic interactive moments to maintain contact" (Grønnerød, 2004, p. 37). When used for self-regulation purposes, to manage tension and regulate difficult emotions, laughter is not supposed to be shared. In these situations, reciprocal laughter would definitely be considered as a rupture in the interaction. Nevertheless, these situations being exceptions, laughter is generally considered as an invitation to laugh (Glenn, 2010). Shared laughter is often the result of a successful laugh invitation and usually appears following a typical sequence: a participant in the interaction, often the one holding the floor (Glenn, 1991), begins to laugh and another participant joins in very quickly thereafter, generally in the next turn (Glenn, 1989; Jefferson, 1979; Sacks et al., 1974). Laughter does not have to appear exactly at the same time to be considered as shared, and is not inevitably unison laughter (Glenn, 2003; Jefferson, Sacks, & Schegloff, 1977). Shared laughter is an activity as such within the interaction, characterized as a time out or a side sequence (Jefferson et al., 1977).

Research demonstrated how people accomplish laughter, following well organized interactional pattern (Jefferson, 1979; Schenkein, 1972; West, 1984). But more importantly, research also demonstrated what people accomplish with laughter. Indeed, laughter is socially functional and has a range of implications for the interaction itself and beyond (Adelswärd, 1989; Glenn, 2003, 2010).

In the next subchapter, I present a study conducted to explore laughter and social functions of laughter in the specific interactional context of the selection interview (Article 3). More specifically, this study investigated who produce laughter, when it is produced and how it is related to a major interview outcome, the recruiters' hiring evaluations.

#### **4.2. Laughter in the selection interview and impact on interview outcomes** **(Article 3)**

In Study 3, Adrian Bangerter, Joaquim Sieber and I developed our understanding of laughter in the selection interview.

Previous studies in conversation analysis demonstrated that laughter is a fundamentally social process (Glenn, 2003) and has a range of promising interactional benefits. Laughter

especially plays an important role to regulate social interactions. We explored the social functions of laughter and applied them to the specific context of the selection interview.

We explored how laughter is produced and how it helps people managing interactions by reducing ambiguity. First, laughter often reflects differences in terms of role in institutional interactions, i.e. role asymmetries (Glenn, 2010; Haakana, 2001, 2002; Tullar, 1989; West, 1984). Previous research agreed on a general pattern in which the lay person produces most of laughter whereas the representative rarely laughs (Glenn, 2010; Haakana, 1999). Second, laughter also shapes gender identities (Glenn & Holt, 2013). Men and women tend to use laughter in different manners and laughter seems to be *a female business* (Adelswärd, 1989). Laughter reflects interactional identities and personal characteristics (Adelswärd, 1989; Glenn, 2010; Haakana, 1999) and therefore provides guidelines for participants to institutional interactions, reducing interactional ambiguity. Finally, laughter also reduces ambiguity by helping participants to progress through the interaction. Participants use laughter to manage discourse, establish common ground or as a consensus mark to move forward with another topic or activity (Adelswärd, 1989; Bonin, Campbell, & Vogel, 2012; Holt, 2010).

We therefore developed two Research Questions regarding the production of laughter in the selection interview. For Research Question 1, we explored who produce laughter in the selection interview. We investigated if role (applicants vs. recruiters) and gender influence the production of laughter. For Research Question 2, we explored when laughter is produced. We investigated if transitions between interview phases influence the production of laughter.

Then, we explored how laughter is related to the interview outcomes, focusing on one of the most important characteristic of laughter: sharedness. Shared laughter is positively associated to favorable outcomes regarding the quality of the interaction. It helps people bonding, getting closer and reduces differences between people (Glenn, 2010; Grønnerød, 2004; West, 1984), especially in brand new interactions with no interactional history (O'Donnell-Trujillo & Adams, 1983; Schenkein, 1972). Shared laughter may help building relationships (Glenn, 2010; Grønnerød, 2004; West, 1984). In institutional interactions such as the selection interview (Drew & Heritage, 1992), normative expectations about participants' behavior help reducing uncertainty. Nevertheless, one of the greatest ambiguity for participants is to achieve two goals that sometimes conflict: be professional but also sociable (Glenn, 2010; Lavin & Maynard, 2001). We proposed that shared laughter is way to introduce nonserious time-outs without endangering the general seriousness of the selection interview, allowing participants to enjoy friendly moments and display sociability. Thus, shared laughter becomes

an impression management tactic that both recruiters and applicants may use to display favorable images of themselves to achieve their respective goals: to sell the job and to receive the job.

From the applicants' perspective, shared laughter provides the opportunity of displaying affiliation and friendliness (Glenn, 2010). This tactic, used to influence and promote the relationship, has the characteristics of a well-known impression management tactic: ingratiation (Stevens & Kristof, 1995). We like and are attracted to people similar to us. Similarity perceptions were found to drive the effect between shared laughter and relationship well-being (Kurtz & Algoe, 2017). Nevertheless, these tactics' positive effects may reverse when too obvious. Laughter may be instrumental for applicants, allowing them to subtly evoke affiliation. On the contrary, unilateral laughter may be detrimental for applicants. As previously mentioned, unilateral laughter is often associated with difficult moments such as troubles-telling or self-depreciation (Glenn, 2003; Jefferson, 1984). Such moments are not appropriate in the context of selection interview for obvious reasons and should therefore be limited or banished. Moreover, the applicants' unilateral laughter might be interpreted as a sign of nervousness, triggering inferences of immaturity (Glenn, 2013), or it might be the result of a failed laugh invitation (Jefferson, 1979). These situations will lead to negative inferences from recruiters.

We therefore developed Research Question 3, how is laughter related to interview outcomes. We explored how laughter is related to recruiters' hiring recommendations. We investigated unilateral laughter, shared laughter and shared laughter episodes.

Regarding our first Research Question (1), results demonstrated that both role and gender significantly predict the production of laughter. In the selection interview, being an applicant (vs. recruiter) increases the odds of producing laughter by 38%. Being a woman increases the odds of producing laughter by 33%. Results suggested that laughter reflects role asymmetries and personal characteristics. Furthermore, results provided support that the same pattern replicates across various institutional contexts.

Regarding our second Research Question (2), results demonstrated that the presence of a transition between interview phases increases the odds of producing laughter by 27%. A significant interaction between role and transition was found, with applicants being more likely to produce laughter in transitions but recruiters being less likely. These results suggested that laughter is indeed used to solve conversational dilemmas of topic or activity change and helps progress through the interview. Furthermore, results provided further support for role

asymmetries, suggesting that recruiters are the one having the agenda and deciding when to move to another phase of the interview, and applicants implicitly agree by laughing.

Regarding our third Research Question (3), results demonstrated that shared laughter episodes initiated by recruiters were positively related to their hiring evaluations, whereas applicants' unilateral laughter was negatively related to recruiters' hiring evaluations. Results suggested that sharedness is a very important characteristic of laughter regarding the interview outcomes. Unilateral laughter is detrimental in this high-stake context, in which expectations about the applicants' self-promotion do not converge with inferences triggered by unilateral laughter. Conversely, shared laughter episodes initiated by recruiters are favorable, suggesting that applicants laughing along may be used as an ingratiation tactic, promoting positive outcomes for applicants.

This study highlighted that in institutional context such as selection interview, laughter and shared laughter might offer explanations of what happens within the interview, but also beyond it, with potential impact on interview outcomes. Laughter might be used to reduce the interactional ambiguity and reflected role and individual characteristics, but also helped participants to progress through the interaction. Furthermore, shared laughter episodes helped participants to bond and positively influenced one of the major predictors of the interview success, the recruiters' hiring recommendations. I continue the discussion in the general discussion (5).

## 5. GENERAL DISCUSSION

Through this dissertation, I explored some little-known interactional aspects that have not been investigated much in the context of the selection interview: Disfluencies (Article 1), storytelling (Article 2) and laughter (Article 3).

For a start, I focused on one specific interactional process occurring in selection interview: question answering. More precisely, I explored the applicants' responses to a specific questions type: past-behavior questions. These questions evidence high levels of predictive validity (Dipboye, Wooten, & Halverson, 2004; Huffcutt et al., 2001) and diffuse well into practice and are increasingly used by recruiters (Roulin & Bangerter, 2012). And from an interactional point of view, these questions require applicants to respond in a specific, narrative format (Bangerter et al., 2014; Ralston et al., 2003). Applicants are expected to tell a story about a relevant past-episode they experienced.

First, I explored applicants' disfluencies in response to past-behavior questions and their impact on interview outcomes (Article 1). I demonstrated that one specific type of disfluencies, response delays, significantly predicted the applicants' response type. As time went by, applicants were less likely to produce a narrative response, which would have been the appropriate response type. Furthermore, response delays negatively predicted recruiters' hiring recommendations. Longer response delays were found to decrease these recommendations. Results supported the assumption that responding in time and with the appropriate response type has positive outcomes for applicants in terms of self-presentation goals and it pointed out the difficulties applicants experience to produce narratives on demand. This study highlighted the importance of disfluencies in the selection interview and the inferences they triggered, influencing the interview and beyond.

Second, I explored the applicants' storytelling tendencies in response to past-behavior questions (Article 2). Previous studies highlighted the applicants' suboptimal use of storytelling. In two experimental settings, I manipulated two ways of eliciting storytelling. I demonstrated that the recruiters' interactive behavior, i.e. them using probes, increased the applicants' production of stories and the variety of narrative elements they contained. I was not successful to demonstrate that the applicants' level of information increased the production of stories. However, results demonstrated that information decreased the production of pseudostories (general descriptions). Additionally, results demonstrated that finding a relevant

episode to narrate seems to be a major issue for applicants. This study highlighted the importance of recruiters in the selection interview to elicit relevant applicants' behavior, i.e. to encourage the production of stories in the context of past-behavior question. This also spurred further studies to explore other ways that may help applicants to tell their stories.

Finally, I explored a rather original but promising interactional aspect, laughter (Article 3). Indeed, previous studies on laughter suggested interesting interactional properties that could be very useful for participants in a selection interview. I demonstrated that in selection interview, laughter is not produced randomly. With quantitative analysis (multilevel logistic regression), I replicated patterns previously found in qualitative research and demonstrated that laughter is more likely to be produced by applicants (compared to recruiters), by women and on transitions (between different phases of the interview). Furthermore, I demonstrated that shared laughter episodes initiated by recruiters were positively related to their hiring evaluations, whereas applicants' unilateral laughter was negatively related. This study highlighted that in an institutional context such as selection interview, laughter might be used to reduce the interactional ambiguity and reflected role and individual characteristics, but also helped participants to manage impressions and positively influenced one of the major predictors of the interview success, recruiters' hiring recommendations.

The respective strengths and limitations of the three articles of this dissertation are already discussed in each specific article. Thus, the aim of the following subchapters is to emphasize the key results and their implications for selection interview. I first discuss the impact of unintended interactional aspects on interview outcomes (5.1) and the key role recruiters have to play to elicit applicants' relevant behavior (5.2). Finally, I discuss general limitations and suggest possible directions for future research (5.3).

### **5.1. Impact of unintended interactional aspects on interview outcomes**

*“The individual will have to act so that he intentionally or unintentionally expresses himself, and the others will in turn have to be impressed in some way by him”*

*(Goffman, 1956, p. 2)*

In social interactions, people express themselves consciously or not, meaning that impressions they conveyed may not always result from intentional behaviors (Goffman, 1956; Schlenker, 1980). Goffman (1956) distinguished between impressions *given* and *given off*.

Impressions *given* are intentional, intended and controlled information that people convey and manage for a specific meaning (often verbal symbols that convey the information attached to these symbols). On the contrary, impressions *given off* are unintentional, unintended information and represents *leaks* that people convey without much control. Both *given* and *given off* impressions therefore constitute two ways people express themselves to impress the audience, i.e. for self-presentation purposes (Baumeister, 1982; Goffman, 1956). In the context of selection interview, verbal and non-verbal (e.g. eye contact or smiling) contents were deeply investigated and represent well-known tactics used by applicants that influence recruiters' evaluations (McFarland et al., 2005; Stevens & Kristof, 1995). However, this dissertation is positioned somewhere in between and demonstrates the importance of little-known and unintended interactional aspects. Information and impressions *given off* conveyed by disfluencies (Article 1) and laughter (Article 3) influence the interview itself but more importantly, recruiters use such information to make inferences about applicants and to make hiring recommendations and eventually hiring decisions.

Article 1 investigated one specific type of disfluencies, the applicants' response delays. Applicants' response delays were predictive of response type, i.e. narrative or not (during the interaction), and recruiters' hiring evaluations (beyond the interaction). Recruiters made negative inferences regarding applicants' knowledge, abilities or qualifications and as time went by, these inferences decreased hiring recommendations. Disfluencies constitute some *paradata* (Couper, 2000; Schober et al., 2012) produced by applicants in the selection interview, i.e. "information beyond the content of their answers" (Schober et al., 2012, p. 555). *Paradata* gives, among other things, information about the process or the quality of the response. Therefore, responding in a timely manner represents information *given off* that positively contribute to the applicants' self-presentation.

Article 3 investigated laughter. Laughter was produced following some well-defined patterns and was predictive of role, gender and transitions (during the interaction) and was related to recruiters' hiring evaluations (beyond the interaction). Episodes of shared laughter with applicants positively responding to invitations to laugh made by the recruiters were positively related to hiring recommendations, whereas applicants' unilateral laughter was negatively related to recruiters' hiring recommendations. Here again, recruiters made negative inferences regarding applicants' nonseriousness, immaturity or unfulfilled expectations regarding self-promotion and these inferences decreased hiring recommendations.

This kind of information was not studied much in the context of impression management and self-presentation (but see DeGroot & Motowidlo, 1999). It represents less salient and more subtle ways to promote a positive image and convey favorable impressions. And subtlety may be especially efficient in high-stake interaction such as selection interview. Indeed, *too many* or *too obvious* impressions management tactics, such as opinion conformity, may have backfiring consequences and may therefore be detrimental for applicants (Stevens & Kristof, 1995). Responding with appropriate timing to the recruiters' questions and strategically producing laughter in response to recruiters' invitations represent efficient and subtle ways to manage impressions and contribute to positive outcomes for applicants.

However, the widespread use of impression management (Levashina & Campion, 2007; Stevens & Kristof, 1995) and its impact on recruiters' evaluations (Barrick et al., 2009) raised some concerns about the selection interview accuracy (Ingold, Kleinmann, König, & Melchers, 2015; Klehe, Kleinmann, Niess, & Grazi, 2014). There is a commonly assumed threat among researchers and recruiters that impression management and self-presentation could be detrimental for the interview predictive validity (Robie, Tuzinski, & Bly, 2006). However, recent perspectives on self-presentation are positive and reassuring. Such behaviors may be signs of the applicants' motivation, representing "a form of socially adequate behavior" (Ingold et al., 2015, p. 428) which is positively related to job performance rating. Self-presentation strategies do not represent a threat (Dipboye, Macan, & Shahani-Denning, 2012; Hogan, Barrett, & Hogan, 2007; Ingold et al., 2015). Rather, such tactics "reflect a behavioral manifestation of candidates' underlying interindividual differences » (Klehe et al., 2014, p. 1) and could therefore represent useful information for recruiters' to distinguish applicants.

These results demonstrated once again the importance of social processes in the selection interview, and that information unintentionally conveyed provide important insights for the course of the interview and beyond. Nevertheless, these information *given off* are under-investigated and deserve future research.

The results demonstrated the general importance to raise awareness to such interactional processes and to the impact they could have on the interview. This has implications for both applicants and recruiters. Applicants would gain from developing these interpersonal competencies and adapt their behavior in the selection interview to convey positive images which would eventually make them stand out from the pool of applicants. Recruiters would benefit from paying attention to such interactional aspects, because they represent interesting

information that may unconsciously influence their evaluations and, consequently, the hiring decision.

## **5.2. Recruiters' key role to elicit applicants' relevant behavior**

*“By actively taking part in the social interaction, accurate raters may elicit more and better (relevant) cues from those being judged »*

*(De Kock et al., 2018, p. 10)*

The psychometric perspective advocated for structure to increase the validity of the interview. One way to introduce structure in the selection interview is through the standardization of the recruiters' behavior. For instance, the recruiters are encouraged to ask the exact same questions to each applicant, to limit probing or follow-up questioning (Campion et al., 1997). From this perspective, probing constitutes a threat to validity and needs to be controlled or even banished to increase interview structure and limit bias (Dipboye et al., 2004; Huffcutt & Arthur, 1994). But this increase of structure often goes with a limitation of interactivity. The most negative effects of this limitation are on the participants' reactions (Campion et al., 1997; Conway & Peneno, 1999; Lievens & De Paepe, 2004). This dissertation highlights another negative impact of limited interactivity, namely on the applicants' performance and consequently on the information available to recruiters and their resulting decision.

Thus, I propose to adopt a different perspective on probing, defined as “a follow-up question that is intended to augment an inadequate or incomplete response provided by the applicant, or to seek additional or clarifying information” (Levashina et al., 2014, p. 272). As some researchers argue, probing represents an effective way to search deeper responses from the applicants and therefore to increase information accuracy (Levashina et al., 2014). Article 2 demonstrated that probing has positive effects on applicants' responses. When asking past-behavior questions, recruiters' probes encourage the production of more appropriate and more complete responses. Recruiters can influence the type of responses (i.e. narrative) and the composing narrative elements. Applicants produce more stories and when they do, their stories contain more diversity in terms of narrative elements (the STAR model, see Kessler, 2006). Thus, if recruiters do not use probes, they may miss out important information and bias their

evaluations of the applicants' competencies and hireability. This may negatively impact their hiring decisions.

These results may be explained by the specific interactional character of storytelling. Both applicants and recruiters are required to be actors of storytelling. While the narrator role of applicants is obvious, the recipient role of recruiters is less salient but just as important. By actively listening, recipients encourage the production and the progress of the story. They act as co-narrators (Bavelas et al., 2000) and the generic and specific responses they address to the narrators help them building the story. Distracted recipients were found to reduce the quality of the story, especially regarding the conclusion. "The relative absence of listener responses, particularly specific responses, cause the narration falter" (Bavelas et al., 2000, p. 950). This highlights the necessity for both narrator and recipient to actively collaborate moment by moment for the success of the storytelling episode.

However, probing does not have to be used in a disorganized and random way, probing needs to be reflexive, planned and used effectively. For instance, in Article 2, probing was used by the experimenter only in very specific moments and pre-planned probes were used based on the applicants' responses. Thus, "planned probing could be used to help applicants who might be shy or speak in succinct ways to clarify their answers and provide more detailed job-related information. Probing might also help applicants recall and identify the most relevant experiences they need to describe in order to best present their true job-related credentials" (Levashina et al., 2014, p. 272). In Article 2, results demonstrated that applicants especially struggle to recall a relevant past-episode. Probing therefore constitutes an effective way to solve this issue and help applicants. Furthermore, it seems reasonable to assume that probing does not affect the validity of the interview. Levels of structure defined by Huffcutt and Arthur (1994) demonstrated a ceiling effect between level 3 and level 4 (respectively .56 and .57). Level 3 allows some flexibility regarding the standardization of recruiters' questions and especially gives some leeway regarding probing and asking alternatives questions. Therefore, probing is totally in line with the discretion recruiters may keep to promote interactivity without decreasing validity. Although this hypothesis has not been tested yet, by collecting more accurate and more relevant information about applicants, probing may even increase validity (Levashina et al., 2014).

Interactivity has positive effects for both applicants and recruiters. From the applicants' perspective, interactivity allow them to achieve one of the major goals of question answering, information exchange (Smith & Clark, 1993), by honoring the request and produce the relevant

information, i.e. a story. Furthermore, applicants have the opportunity to demonstrate their mastery of relevant competencies by recounting a past-episode they mastered well. Thus, applicants achieve the second major goal of question answering: self-presentation. Previous research demonstrated that stories are used as a self-promotion tactic and highlighted the positive impact they have on interview outcomes (Bangerter et al., 2014; Stevens & Kristof, 1995). By telling a story about a relevant past-episode, applicants present themselves in a positive way and may emerge from the pool of applicants. Furthermore, self-presentation was found to be positively related to job performance and constitute “a form of socially adequate behavior that also serves as a skill on the job, thereby contributing to job performance rating” (Ingold et al., 2015, p. 428).

From the recruiters’ perspective, interactivity allows them to have more accurate, more relevant and more complete information available. Recruiters can gather a lot of information from a story (Ralston et al., 2003), which will help them to accurately evaluate applicants and make decisions about the future job offer. Furthermore, recruiters who are probing or proposing generic or specific responses not only show their reception of the story but also their interest. Indeed, Article 2 demonstrated that participants in the probing condition not only found the experimenter more interactive but also more interesting than participants in the control (no probing) condition. Recruiters’ interactivity may influence the overall perception applicants develop during the interview about the recruiters and the organization, and may constitute an effective way for recruiters manage impressions (Wilhelmy et al., 2016) and contribute to sell the job and the organization.

In that sense, interactivity is essential to promote cues to accurately evaluate applicants and therefore constitutes the characteristic of a *Good Judge* (De Kock et al., 2018). According to previous research, evaluation, also known as the rating process, is divided into four phases: *relevance* of the behavior or the behavioral cues, *availability* of such cues to raters, raters’ ability to correctly *detect* the cues and *use* them to form impressions (De Kock et al., 2018; Murphy & Cleveland, 1995). The elicitation of the applicants’ behavior influences the beginning of the evaluation process and influences both the availability and the relevance of the behavioral cues. These are the two first steps that will strongly influence the recruiters’ ability to detect that kind of cues and accurately use the information to form impressions. “Accurate judges are not ‘passive perceivers’, but actively participate in interpersonal situations when forming impressions of others [...] As interviewers' behavior relates to eliciting cues from targets, by actively taking part in the social interaction, accurate raters may elicit more and

better (relevant) cues from those being judged” (De Kock et al., 2018, p. 10). Recruiters’ proactive and social behavior in interview is essential.

This has important practical implications, because recruiters can be trained (De Kock et al., 2018; Lievens, 2001; Lievens, Tett, & Schleicher, 2009). Training programs can be designed to instruct recruiters on the necessity of interactivity and advise them on how to adopt interactive behavior. Altogether, this highlights the importance and relevance of social interactions in the selection interview. A successful interview is the result of both recruiters and applicants actively collaborating, allowing them to achieve their respective goals.

### **5.3. Limitations and future perspectives**

This dissertation has some limitations. First, it represented a first step in the exploration of little-known social interactional aspects in the selection interview. For instance, we used recruiters’ hiring recommendations as dependent variable. We made numerous assumptions about what influenced recruiters and what they inferred from specific applicants’ behaviors, but we actually did not explore what happened in-between. It would be interesting to go further and explore for instance the recruiters’ inferences process. In Article 1, the applicants’ response delays negatively predicted the recruiters’ hiring recommendations. Based on previous research, we assumed recruiters made negative evaluations in terms of *feeling of another’s knowing* (Brennan & Williams, 1995; Smith & Clark, 1993) but we did not actually test this assumption. In article 3, unilateral laughter was negatively related to recruiters’ hiring recommendations. We assumed recruiters made negative inferences in terms of immaturity or nonseriousness (Glenn & Holt, 2013) but again, we did not test for these assumptions. To increase the understanding of social processes in the selection interview, research would benefit from exploring more deeply how such processes trigger inferences and therefore influence interview outcomes.

Second, in Article 2, even if comments made by participants suggested that faking did not increase with probing, I did not include faking measures when manipulating probing (Article 2). Yet, research pointed out that probing might be associated with increased applicants faking (Levashina & Campion, 2007), especially in response to past-behavior questions with inexperienced applicants. But other research suggested that probing could decrease faking (Levashina, Morgeson, & Campion, 2012; Schmitt & Kuncze, 2002). Indeed, planned probing designed for enhancing difficulty, verifying or quantifying are thought to reduce faking

(Levashina et al., 2014). Nevertheless, results are inconsistent and investigating the effect of probing, especially planned probing, on faking is an interesting future research topic.

Third, this dissertation provides an *inside* view of the selection interview on a micro-level, and therefore lacks a more macro perspective. Recent developments highlight the need of more macro perspectives of the behavior of applicants and recruiters in the context of personnel selection (see for example Bangerter et al., 2012). Finally, in line with the need of more macro perspectives, results described in this dissertation cannot be generalized to all selection interview settings. I conducted studies with various participants (students, professional) for various positions (vocational trainings, entry-level and managerial positions). Yet, selection practices and selection interviews might depend on local and organizational contingencies. In the current context of globalization and increase of intercultural exchanges, future research would benefit from exploring such social processes across various countries and cultures and how such factors are affecting the social processes and the interview outcomes. This also includes the continuous emergence of new technologies, which necessarily affect selection methods by offering new and various opportunities to conduct selection interviews (Blacksmith, Willford, & Behrend, 2016; Chapman & Rowe, 2001; Stone, Lukaszewski, Stone-Romero, & Johnson, 2013).



## 6. CONCLUSION

The selection interview is one of the most popular methods, and research continuously contributes to improve our understanding of the interview. Previous studies investigated the conditions for validity (Huffcutt & Arthur, 1994; Hunter & Hunter, 1984; Marchese & Muchinsky, 1993), the impression management tactics deployed by applicants and recruiters and how these tactics influence the interview outcomes (Gilmore & Ferris, 1989; Higgins & Judge, 2004; Stevens & Kristof, 1995; Wilhelmy et al., 2016).

This dissertation offers a glimpse of some relevant and little-known interactional aspects that are deployed by participants during a selection interview and their impact on interview outcomes. All three aspects investigated, disfluencies, storytelling and laughter contribute to the understanding of social processes engaged in the high-stake context of selection interviews. Still, some interactional aspects of the interview remain underexplored. Applicants, recruiters and organizations have to gain from future research exploring social process in the fascinating context of the selection interview.



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## 9. APPENDICES

### Publication list

#### Appendix I

Brosy, J., Bangerter, A., & Mayor, E. (2016). Disfluent responses to job interview questions and what they entail. *Discourse Processes*, 53, 371-391.

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#### Appendix II

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#### Appendix III

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## APPENDIX I

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Brosy, J., Bangerter, A., & Mayor, E. (2016). Disfluent responses to job interview questions and what they entail. *Discourse Processes*, 53, 371-391.

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Disfluent responses to job interview questions and what they entail

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Disfluent responses to job interview questions and what they entail

### Abstract

Conversation is governed by expectations of timely responding. Violations of these expectations are grounds for inference by other participants. These inferences may be at odds with identities respondents try to project. In job interviews, candidates' responses are used to make hiring decisions. Candidates trade off between (1) delaying response initiation to search for an appropriate response at the risk of appearing inept and (2) responding quicker but less appropriately. In a corpus of job interviews, response delays predicted the probability of inappropriate initial responses and decreased hireability ratings, illustrating how unintended aspects of conversational delivery can entail social and institutional consequences beyond the conversation itself.

*Keywords:* conversation, answering questions, pause, disfluency, job interview, behavioral question

## Introduction

### Disfluencies in spontaneous speech

Spontaneous speech is disfluent by nature. Disfluencies are “phenomena that interrupt the flow of speech and do not add propositional content to an utterance” (Fox Tree, 1995, p. 709). They include pauses, fillers, interruptions, repetitions, repairs or hesitations. An estimated rate of disfluencies is 6 words per 100 (Fox Tree, 1995). Disfluencies are commonly viewed as a problem in communication (Brennan & Schober, 2001; Brennan & Williams, 1995; Clark, 1994; Fox Tree, 1995; MacGregor, Corley, & Donaldson, 2010; Schober & Bloom, 2004; Smith & Clark, 1993): “If fluency is every speaker’s goal, then disfluency should be every listener’s nightmare” (Fox Tree, 1995, p. 709). This is because they are assimilated to disturbances that listeners have to ignore to understand what speakers are trying to say. By such a view, then, disfluencies constitute an obstacle to comprehension. But other studies suggest that disfluencies may constitute conversational signals that are informative to listeners, even enabling them to make inferences about the speaker (Brennan & Schober, 2001; Brennan & Williams, 1995; Clark & Fox Tree, 2002; Schober & Bloom, 2004; Smith & Clark, 1993).

An everyday situation to study spontaneous speech production is question-answering. Question-answering is a social process with two goals (Smith & Clark, 1993). The first goal is exchanging information: Questioners request information from respondents, and respondents try to give information to honor the request. The second goal is self-presentation: respondents try to influence how they appear to the questioner or to listeners. Ideally, responses to questions are produced in a timely fashion and contain the requested information (thereby respecting the maxim of quality; Grice (1975)). Problems may emerge when respondents aren’t able to reach this ideal. Because of the precision timing inherent to conversation, speaker transitions typically have very little gap or overlap (Sacks, Schegloff,

& Jefferson, 1974): on average, 85 % of transitions have less than 1 second gap or overlap (De Ruiter, Mitterer, & Enfield, 2006). Since the relevant next turn to a question is a timely response, delays can signal various kinds of trouble, including understanding the question, searching for the response, or formulating the response. If responses are delayed, unsure or unsuccessful, respondents risk negative inferences on the part of their partners, including the risk of being considered ignorant or uncooperative (De Ruiter et al., 2006; Smith & Clark, 1993). Not responding to a question can thus threaten positive self-presentation, leading respondents to produce disfluencies to warn partners of upcoming delays. For example, respondents unsure about answers produce more fillers like *uh* or *um* (Smith & Clark, 1993).

Besides upcoming delays, disfluencies also reveal other information about the respondent. In the case of factual questions, response latencies are used by listeners to make inferences about respondents' knowledge, the so-called *feeling of another's knowing* (Brennan & Williams, 1995; Smith & Clark, 1993). Longer response latencies increase the likelihood of a negative evaluation of respondents' knowledge. In survey interviews, disfluencies predict respondents' need to clarify questions: when respondents produce such disfluencies, they are more likely to produce an inaccurate or a less reliable response (Schober & Bloom, 2004; Schober, Conrad, Dijkstra, & Ongena, 2012). Taken together, then, much evidence suggests that disfluencies are not just obstacles to successful communication. They reveal much about the further time course of the response or respondents' internal states.

### **Question-answering in job interviews**

Job interviews are one of the most widely used hiring methods (Judge, Cable, & Higgins, 2000; Posthuma, Morgeson, & Campion, 2002). They comprise question-answering sequences, whereby recruiters ask questions of candidates and use their answers to evaluate candidates in order to make hiring decisions (Coetzee & Kriek, 2010). Despite their

widespread use, the extent to which recruiter evaluations accurately predict candidates' future job performance is often called into question (Anderson, 1992; Harris, 1989; Judge et al., 2000). Predictive validity can be increased by using a structured interview format (Huffcutt & Arthur, 1994). There are multiple ways to introduce structure into job interviews (Campion, Palmer, & Campion, 1997), but they often involve limiting interactional options for participants. For example, questions asked by recruiters can be standardized, as well as recruiters' evaluations of candidates' responses.

A recent innovation in structured interviewing is the behavioral interview (Harris, 1989; Motowidlo et al., 1992). Candidates are asked so-called past-behavior questions about their actions in a job-related situation in the past. An example is *Can you tell me about a situation where you managed to convince someone to change their opinion?* From an interactional point of view, past-behavior questions invite a narrative response about the situation, actions undertaken by the candidate and related events that transpired. In other words, candidates are expected to respond to such questions by telling a story. Behavioral interviews are increasingly used (Roulin & Bangerter, 2012), and, as a result, storytelling skills will become more and more important for candidates (Ralston, Kirkwood, & Burant, 2003).

How well are candidates able to answer job interview questions, and how timely are their responses? Even if candidates can and do anticipate questions they may get asked by recruiters, they typically do not prepare and practice each utterance. In this way, job interviews are interesting to study because they are explicitly evaluative situations where spontaneous responses to questions are produced by candidates, leading to potential disfluencies (Fox Tree, 1995). But little is known about the interactional implications of disfluencies in job interviews. They may possibly predict the further time course of a response or reveal candidates' misunderstandings as in survey interviews (Schober & Bloom,

2004). This study therefore explores implications of disfluencies in the context of job interviews. We focused mainly on one specific disfluency, candidates' pause durations between recruiters' question offset and candidates' response onset.

### **This Study**

#### **Disfluencies and candidate responses**

Given that past-behavior questions project narrative responses, one might expect that candidates most often respond to them by telling stories. There is little data on this issue, but one study found that in fact only 23% of responses to past-behavior questions are stories (Bangerter, Corvalan, & Cavin, 2014). Two main problems could prevent candidates from producing narrative responses. First, it may be unclear for candidates whether a story is warranted. Storytelling requires would-be narrators and their audience to collaboratively suspend normal turn-taking rules and agree to engage in an extended turn at talk by the narrator (Mandelbaum, 2012). Candidates may be hesitant to engage in this process in an unfamiliar and high-stakes situation like a job interview. If candidates aren't sure about the response type expected, they may delay their response. Second, it may not be easy to produce a story on demand. Producing narratives requires candidates to search memory for a relevant event. The event has to be representative of the competency evaluated in the question (a relevant event for the competency *stress management* might be for example successfully managing multiple stressful situations happening at the same time - moving to another country, living alone for the first time, dealing with administrative issues). Then candidates have to prepare speech (Levelt, Roelofs, & Meyer, 1999), following the typical constituent parts of a well-narrated story: abstract, orientation, complicating action, evaluation, resolution and coda (Norrick, 2007). This preparation takes time and may also delay the response.

As a result of these multiple challenges, candidates may face a trade-off between (1) delaying responding to search for and prepare an appropriate response at the risk of appearing

inept and (2) responding quicker but perhaps less appropriately (e.g., in non-narrative form). A lengthy search-and-preparation delay might ultimately be unsuccessful if candidates fail to find an appropriate response. Memory search may be successful and lead to the production of a narrative response, but it may also be unsuccessful and lead to the production of a non-narrative response. Therefore, pause durations in responses to past-behavior questions may be related to the response type (narrative or non-narrative) produced by candidates. We aim to investigate this relation, which could be potentially non-linear as described above: longer pause durations may predict success in producing a narrative response, but too-long durations may be harbingers of aborted narrative responses.

We thus formulate *Research Question 1: Does the pause duration between a recruiter's question offset and a candidate's response onset predict the response type (narrative or non-narrative) produced by candidates?*

### **Disfluencies and candidate self-presentation**

In job interviews, candidates usually want to make a good impression on recruiters to increase their chances of ultimately getting hired. Indeed, an important predictor of recruiter evaluations and hiring recommendations is their subjective impression of candidates and this impression can be influenced by candidate self-presentation (Stevens & Kristof, 1995). Candidates intentionally use a range of *direct* impression management tactics, including ingratiation or self-promotion, as well as *indirect* tactics like enhancing or protecting information about people or things with which they are associated (Cialdini, 1989; Cialdini & Richardson, 1980). However, impressions conveyed by self-presentation may not only result from intentional behavior of candidates.

Goffman (1959) famously distinguished between impressions *given* and *given off*. Information given involves symbols (often verbal) that are intentionally used to convey information attached to these symbols. Information given off is involuntarily expressed, e.g.,

“leaks” that may reveal unintended aspects of the self to an audience. These two kinds of information may contradict each other.

Applying this distinction to the present study, information and impressions conveyed by disfluencies (e.g., responses delays) are *given off*. As in any conversation, job interview question-answering between candidates and recruiters is governed by expectations of timely responding. If candidates violate these expectations, they face the probability of being negatively evaluated by recruiters and be considered as ignorant, for example (De Ruiter et al., 2006; Smith & Clark, 1993). Recruiters may thus use pause duration, i.e. information *given off*, to form impressions and make judgments of candidate suitability and hiring decisions. In that way, long pauses may adversely affect recruiter judgments of hireability.

Therefore, responding fluently, e.g., without excessive delay, could be an unintended but efficient means of self-presentation. Conversely, disfluent responding might threaten self-presentation goals and lead to negative recruiter evaluations (e.g., hiring recommendations).

We therefore formulate *Research Question 2: Does the pause duration between a recruiter’s question offset and a candidate’s response onset predict recruiter evaluations?*

We investigated these two research questions using data gathered for another research project on sensing of candidate nonverbal behavior (Frauendorfer, Mast, Nguyen, & Gatica-Perez, 2014). Candidates applied for a research assistant position. The database comprised 62 videotaped job interviews featuring four past-behavior questions. A panel of professional recruiters made hiring recommendations for each candidate. We reanalyzed the data by measuring candidates’ pause durations between recruiters’ question offset and candidates’ response onset and using them as predictors of response type (Research Question 1) and recruiter hiring recommendations (Research Question 2). In investigating Research Question 2, we controlled for a range of ancillary variables (e.g., personality, general mental ability (GMA), and the like) using data available from the original study and from Bangerter et al.

(2014), who investigated the impact of different response types on hiring recommendations controlling for the abovementioned ancillary variables and found that response types influenced hiring recommendations, e.g., narrative responses were associated with better hiring recommendations. Research Question 2 goes beyond Bangerter et al. (2014) by controlling for the same ancillary variables *and* response type to test the additional effect of delays. We thus expect delays to explain additional variance above and beyond response types. Finally, in the present study we also conducted a descriptive analysis of the main types of disfluencies produced other than pause duration.

## Method

### Participants

There were 62 candidates (45 men, 17 women, mean age 23.7 years ( $SD = 3.8$ ), 59 were students), recruited for the study at a French-speaking Swiss university. They had already participated in 3.1 job interviews on average ( $SD = 1.3$ ).

### Procedure

Candidates responded to a job advertisement for a research assistant position, the main activity of which was to recruit participants for another study. On arrival in the lab, they took a GMA test and filled out personality and skills questionnaires, before undergoing a behavioral interview (average duration 11 min). As part of the interview questions, all candidates were asked four past-behavior questions about their competencies of communication, persuasion, organization, and stress management (these competencies were mentioned in the advertisement). The question wording was *Can you tell me about a situation where you showed your competency for X?* Candidates answered the question in the way they saw fit. When the candidate was done, the interviewer did not ask any follow-up questions, but moved on to the next question.

## Transcription

Interviews were videotaped and responses to past-behavior questions were initially transcribed word-for-word. Transcriptions contained also fillers (for example *uh* or *um*), discourse markers (for example *well*), laughs and sighs. We retranscribed the talk around the recruiter's question offset and candidates' response onset in detail using the Transana software package. We also coded the pause duration between question offset and response onset as a measure of delayed responding (see pause duration in the *Coding* section below and Figure 1). All examples reported here are translated from French.

## Measures

*Communication Skills.* Self-reported communication skills were assessed by 13 items based on the Social Skills Inventory (Riggio, 1986). An example item is *In general I communicate in a clear manner*. Items were answered on a Likert scale from 1 (not at all) to 5 (very much),  $\alpha = .89$ .

*Persuasion Skills.* Self-reported persuasion skills were assessed by 6 items based on the Social Skills Inventory (Riggio, 1986). An example item is *I often succeed in selling my point of view*. Items were answered on a Likert scale from 1 (not at all) to 5 (very much),  $\alpha = .79$ .

*Personality.* Candidates responded to 60 items measuring the five traits of the NEO PI-R (Costa & McCrae, 1992): neuroticism ( $\alpha = .83$ ), extraversion ( $\alpha = .72$ ), openness ( $\alpha = .71$  with one item removed), agreeableness ( $\alpha = .67$  with one item removed) and conscientiousness ( $\alpha = .89$ ). Items were formulated as assertions, an example for agreeableness is *I try to be courteous to everyone I meet*. Items were answered on a Likert scale from 1 (not at all) to 5 (very much).

*GMA.* GMA was assessed by the Wonderlic Personnel Test (Wonderlic, 2001), which measures vocabulary, arithmetic reasoning, and spatial ability. Candidates had 12 minutes to answer up to 50 questions. The test score is the percentage of questions correctly answered.

*Hiring Recommendation.* Hiring recommendations were made by five professional recruiters who had between 2 and 10 years of experience in recruiting. Recommendations were made on a scale of 0 % (weakest recommendation) to 100 % (strongest recommendation). One recruiter viewed and rated videotapes of all candidates. The others viewed and rated a subset of the videotapes, such that each candidate was rated by three recruiters; the mean of the three ratings was computed. Recruiters also had access to candidates' personality scores, communication and persuasion self-reported skills and GMA scores. Interrater reliability was computed via intraclass correlations,  $ICC[1] = .50$ ,  $ICC[2] = .75$ ,  $F = 4.45$ ,  $p < .05$ .

*Responsiveness.* Responsiveness was measured by counting the number of words for each candidate's response to each past-behavior question. We then aggregated over all four questions to produce a mean score per candidate.

## **Coding**

*Response Type.* We coded candidates' initial responses in two categories, *narrative response* and *non-narrative response*. These two categories were obtained by collapsing five different response types distinguished in Bangerter et al. (2014). Narrative responses feature responses about particular episodes or sets of episodes featuring candidate actions described more or less concretely. They collapse across *stories*, *pseudo-stories* and *exemplifications*. A *story* was defined by Bangerter et al., (2014) as a set of events related to a unique past episode, characterized by a unity of time or action, which constituents often linked by temporal markers (e.g., then). A *pseudo-story* was defined as a description of a generic episode or recurrent set of similar episodes, without unity of time or action. It differs from a

story in that it is a description of several events rather than of a unique event. As a result, pseudostories are typically more abstract than stories. *Exemplification* was defined as a part of a pseudostory featuring a brief mention of specific contextual information, often marked by *for example*. Non-narrative responses are decontextualized assertions about the self. They collapse across *values or opinions* and *self-descriptions*. Interrater agreement for the five response types originally coded by Bangerter et al. (2014) was high (Cohen's kappa varied between .74 and 1 based on double-coding of 24 responses). Since collapsing the five response types into narrative vs. non-narrative categories can be done automatically, no additional check of interrater agreement is necessary. We computed the proportion of responses (out of 4) which featured each response type (i.e., scores could be either 0, .25, .50, .75, or 1).

*Pause duration.* Following Clark and Wasow (1998), we coded events happening during a delay, i.e., between the question offset and the response onset. We coded pauses (and their duration) separately from other events. A *pause* was defined as a period of time where neither party produced speech. We measured pause duration using the ELAN software package (Wittenburg, Brugman, Russel, Klassmann, & Sloetjes, 2006). We used the sound curve to measure the time between the recruiter's question offset and the candidate response onset. We measured all pauses until the response onset, so there often were several pauses because sometimes candidates produced other phenomena (for example fillers or discourse markers, see Figure 1). Interrater agreement, based on double-coding of 12 candidates (76 pauses), was high ( $r = .99, p < .001$ ). An example of this coding is provided in Figure 1: We coded the first pause (2.1) and the second pause (1.0). But then the candidate initiated a response, so we didn't code the third pause (0.8). This candidate thus produced two pauses during the delay. We then computed the *total pause duration* by adding all pauses in the same delay. For example, in Figure 1 the total pause duration is 3.1 seconds. Last, we coded 5 categories of *other events* produced by the candidates during the delay: *response* (the

candidate produced the response to the recruiter's question, with or without fillers or markers after the pause), *filler/marker* (the candidate produced only a filler and/or a discourse marker after the pause), *question* (the candidate respond to the recruiter's question with another question, for example *A difficult situation or a calm situation?* with or without fillers or discourse markers after the pause, see Figure 2), *remark/repetition* (the candidate repeated part of the question, see Figure 3, or the candidate produced a remark, see Figure 4), and *other* (e.g., the respondent laughed or sighed after the pause). Interrater agreement, based on double-coding of 62 delays (96 events), was high (Cohen's kappa = .85). Note that after the first pause, five responses were preceded by a question but without a second pause. Because we coded only the initial response, they are categorized as questions and not as responses. After the second pause, two responses are preceded by a question and one by a remark but without third pause.

### **Analysis**

We first conducted descriptive analyses of the various events that occurred during the delays of all 248 responses (62 participants, 4 responses each).

We investigated Research Question 1 via multilevel logistic regression to predict response type from total pause duration. We used logistic regression because our dependent variable (*response type*) was binary (*narrative vs. non-narrative*). One candidate did not answer one question, so we analyzed 247 responses. We used multilevel modeling with random effects because the 247 responses (*level 1*) are nested in 62 candidates (*level 2*). We thus modeled candidates as a random effect. We centered the predictors using the grand mean centering method (Hox, 2002; Paccagnella, 2006; West, Aiken, & Krull, 1996). We first calculated a null model, with candidates modeled as random effect but no predictors. Then we fitted a multilevel model with total pause duration and total pause duration (squared) as linear and curvilinear predictors. We used both linear and curvilinear predictors because of

the potentially nonlinear relations discussed in the introduction. We additionally controlled for extraversion because of the significant correlation between extraversion and total pause duration (see Table 1). We then transformed the estimates of total pause duration and total pause duration (squared) from log odds into a theoretical probability curve.

To answer Research Question 2, we used hierarchical multiple regression to predict hiring recommendations from total pause duration by candidate (Table 4). Because the hiring recommendations were made for candidates and not for responses ( $N = 62$ ), we calculated the total pause duration by candidate by adding the pause duration for the four responses ( $M = 15.20$ ,  $SD = 12.73$ ). We entered ancillary predictor variables as control variables in Model 1 as follows: gender, candidates' scores for the Big Five traits, communication skills, persuasion skills, GMA, responsiveness and scores for each response type. In Model 2, we entered total pause duration as predictor. Thus, the regression analysis tests the effect of total pause duration on hiring recommendations controlling for all the other information the recruiters had at their disposal, and thus constitutes a stringent test of Research Question 2.

## Results

Descriptive statistics for main study variables appear in Table 1. More specific descriptive statistics of pause duration appear in Table 2.

In Table 2, each response is preceded by an initial pause of 1.88 s duration on average. After the first pause, responses were initiated 60.5% of the time (Figure 5). In the remaining 98 cases, a second pause of 2.69 s on average occurred (after a filler or other event) (Table 2). After the second pause, responses were initiated 67.3% of the time (Figure 5). In the remaining 32 cases, a third pause of 4.13 s on average occurred (after a filler or other event). The total pause duration varies widely, from 0.1 second to 35.0 seconds. Figure 5 shows the various events that occurred after the first three pauses. The most frequent events between the first three pauses were fillers or discourse markers.

Research Question 1 was *Does the pause duration between a recruiter's question offset and a candidate's response onset predict the response type (narrative or non-narrative) produced by candidates?* Initial responses are narrative 82.6% of the time ( $N = 247$ ). The results of the multilevel logistic regression showed that total pause duration significantly predicts response type (see Table 3). Each additional second of pausing increases the odds of producing a non-narrative response by 21 %. Total pause duration squared also just significantly ( $p = .05$ ) predicts response type, but this effect is smaller. Figure 6 shows the relation between total pause duration and the theoretical probability of producing a non-narrative response, calculated from the model estimates.

Research Question 2 was *Does the pause duration between a recruiter's question offset and a candidate's response onset predict recruiter evaluations?* Table 4 shows the results of the hierarchical multiple regressions. Model 2 shows that gender, responsiveness, and the proportion of stories and pseudostories produced (both subsumed in the analyses for Research Question 1 as narrative responses) emerged as significant predictors of hiring recommendations. However, even after controlling for these ancillary variables and for response types, total pause duration significantly and negatively predicts hiring recommendations,  $b = -.45$ ,  $t(61) = 2.91$ ,  $p < .01$ . The additional variance explained is significantly different from zero,  $F(1, 45) = 3.99$ ,  $p < .001$ . Therefore, longer pause durations decrease hiring recommendations.

### Discussion

Previous studies suggested that disfluencies are not just obstacles to successful communication but can reveal much about the further time course of responses or respondents' internal states (Clark & Brennan, 1991; Schober & Bloom, 2004; Schober et al., 2012; Smith & Clark, 1993). We extended this research and studied, in a corpus of job interviews, the impact of disfluencies, more specifically of response delays, on the type of response produced by candidates and hireability ratings made by recruiters. We were

interested in studying if pause durations can predict candidates' response type and recruiters' hireability ratings.

The descriptive results indicated that job interviews constitute situations affording large and complex variations in response delays. Some candidates needed a short pause before producing their response, while others needed much more time, up to six pauses and 35 seconds, often including various disfluencies (Figure 5). Delays often lasted several seconds. How does this pattern of results compare to disfluent speech in other conversational settings? In Smith and Clark (1993) study of answering factual, general knowledge questions, average pauses accompanying the fillers *uh* and *um* were 2.65 and 8.83 seconds, respectively. We found similar results, with average overall pauses to respond to one question between 1.88 and 9.50 seconds. These durations are of course much higher than turn transitions in everyday conversation (De Ruiter et al., 2006), probably because the high-stakes nature of job interviews requires reflection and planning from candidates, and their responses have important outcomes beyond the conversation itself (i.e., getting hired).

Research Question 1 investigated if the pause duration between the recruiter's question offset and candidates' response onset predicts the type of response (narrative vs. non-narrative). Results showed that delays decrease the probability of a narrative response. This suggests that candidates may initially set out to plan and produce a (more appropriate) narrative response but, as time goes by, they may ultimately decide to abort such a response in favor of initiating speech, perhaps because they have difficulty retrieving an appropriate episode from memory. This suggests that they face a tradeoff between (1) delaying response initiation to find an appropriate response, but at the risk of not being able to find such a response and appearing inept, and (2) responding faster but perhaps less appropriately. The additional quadratic effect of pause duration on response type suggests that candidates may sometimes be successful in retrieving a suitable episode to construct a narrative response with

(however, the effect size is small and thus we would tend to interpret this quadratic effect with some circumspection). Individual candidates may have different thresholds above which they consider they have delayed too long and need to initiate a response – or such thresholds may also partly reflect the particular conversational situation (e.g., cues of impatience or on the contrary reassurance from the interviewer). The effect of pause duration on response type also suggests that candidates may be partly aware of the self-presentational implications of timely responding. In other question-answering situations, respondents who do not know the answer to a question might more easily admit this; in job interviews, initiating a response, even a potentially inappropriate one, seems preferable to saying *I don't know*. Indeed, only one response out of 248 was a direct admission of inability to answer the question.

Research Question 2 investigated whether the pause duration between the recruiter's question offset and candidates' response onset predicts the hiring recommendation made by recruiters. Results show that delays negatively predict hiring recommendations. Delayed responses may thus influence inferences made by recruiters. In the context of factual questions, longer delays increased the likelihood of a negative evaluation of respondents' knowledge – the *feeling of another's knowing* (Brennan & Williams, 1995). A similar process may have occurred in our job interviews. Recruiters may have made inferences about some aspect of candidates' abilities or qualifications, thus leading them to decrease hiring recommendations. Conversely, responding to job interview question without excessive delay increases the chances of a positive evaluation, and is therefore useful for candidates to know. We know that verbal responses and non-verbal behavior (for example frequent eye contact or smiling) influence recruiters' impressions and evaluations, and that candidates, if aware of this, can use such tactics to manage impressions and influence recruiters in a positive way (Stevens & Kristof, 1995). Similarly, disfluencies may constitute a kind of *paradata* (Couper, 2000; Schober et al., 2012) that haven't been investigated that much in the context of self-

presentation and impression management. As discussed in the introduction, responding with appropriate timing and response type to a job interview question could be seen as *given off* information (Goffman, 1959) that contribute to positive self-presentation. In any case, the fact that delayed responses decrease hiring recommendations suggests that candidates face an authentic tradeoff between responding quickly (and thus avoiding being penalized) and responding well (less appropriate answers are also penalized, as shown by Bangerter et al. (2014)).

This study has some limitations. First, although we found that delays predict candidates' responses, our results don't directly reveal their cognitive processes. We assumed that candidates who produced an inappropriate response either didn't know how to respond or couldn't recall a story to tell. But these interpretations imply that candidates know they have to produce a story but have trouble producing one. Yet, as raised in the introduction, sometimes this is unclear for candidates whether a story is warranted. So we don't know for sure what processes led candidates to produce an inappropriate response. Therefore, a delay followed by an inaccurate response could either reflect the fact that candidates don't know the response type expected by recruiters or are unable to produce that type of response. A potential experimental follow-up study to exclude this possibility might consist of instructing candidates how to respond appropriately before the interview. If candidates in such a condition are faster to respond than those without instruction, then part of the response delay is probably due to not knowing what type of response is expected. A (similar) second limitation is that although recruiters negatively evaluate candidates who respond with (excessive) delays, we do not know what inferences they may have made about the candidates that caused their negative evaluations. In order to deal with this limitation, future research might explicitly ask researchers to verbalize their inference processes while watching the videos (Hall & Schmid Mast, 2007). A third limitation concerned the

interviewer's behavior during the interview. She did not produce any probes, prompts or ask any follow-up questions, but directly moved on to the next question. This highly structured format, leading to a lack of interaction, may have been disturbing for candidates and may have affected candidates' behavior. Future research might study the impact of more interactive behavior on candidates' response parameters. A fourth limitation concerned our focus of research: we analyzed only the impact of disfluencies before response initiation and not the impact of disfluencies during the response. Perhaps the impact of disfluencies is less important once the response has started. Or it might be that more disfluencies occur when responses are less appropriate. Future research could pursue these questions (see End note). A fifth limitation concerns the sample size, which is on the small side relative to the regression analyses.

Despite these limitations, our results extend understanding of disfluent responses to questions in several ways. Disfluencies are not just errors of speech production and obstacles to understanding, but can constitute an important window on cognitive and interactional processes in high-stakes question-answering settings. Moreover, they affect interpersonal judgments on the part of conversational partners. And in the context of job interviews, these judgments have consequences that potentially extend well beyond the conversation itself, by influencing hiring evaluations.

Our findings also have implications for training candidates and recruiters in job interview interactions. Candidates could be trained to recognize when stories are warranted and trained to prepare interviews accordingly. Recruiters could be trained to encourage story production in candidates, for example by getting candidates comfortable, letting them take their time to respond or by showing more interactive behavior and using probes and follow-up questions.

This study demonstrated that disfluencies can provide important insights in the context of job interviews, for both candidates and recruiters. But disfluencies remain very underexplored and constitute an important topic for future investigations.

**End note**

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## Tables

**Table 1.** Means (*M*), standard deviations (*SD*) and correlations for main study variables

Variable	<i>M</i>	<i>SD</i>	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17
1. Gender	.73	.45		.15	-.06	-.10	.26*	-.14	-.03	-.10	.16	-.43**	-.19	.26*	.15	.17	.05	.07	.25*
2. E	3.98	.49	.15		.40**	.07	-.42**	.26*	.25*	.23	-.09	.11	.10	.10	.02	.17	.11	-.18	.40**
3. A	4.11	.46	-.06	.40**		.09	-.29*	.32*	.28*	.00	-.02	.19	-.10	.21	-.16	.15	.01	-.07	.09
4. O	3.69	.55	-.10	.07	.09		.07	-.04	.03	.19	.00	.19	.10	.01	-.07	.05	.10	-.09	.05
5. N	2.25	.61	.26*	-.42**	-.29*	.07		-.50**	-.20	-.12	.11	-.31*	-.17	.09	.04	-.15	-.14	.12	-.12
6. C	4.10	.64	-.14	.26*	.32*	-.04	-.50**		.45**	.25	-.18	.23	.02	-.05	-.11	.16	.17	-.11	.12
7. Comm.	3.83	.59	-.03	.25*	.28*	.03	-.20	.45**		.48**	-.14	.00	.02	.04	-.07	.10	.03	-.10	.13
8. Persuas.	3.98	.55	-.10	.23	.00	.19	-.12	.25	.48**		-.16	-.02	.11	-.06	-.24	.07	-.18	-.31*	.24
9. GMA	.69	.14	.16	-.09	-.02	.00	.11	-.18	-.14	-.16		-.18	-.08	.20	.38**	-.18	-.01	-.17	.16
10. Resp.	128.46	56.57	-.43**	.11	.19	.19	-.31*	.23	.00	-.02	-.18		.44**	-.46**	-.10	.33**	.05	-.04	.17
11. Story	.41	.34	-.19	.10	-.10	.10	-.17	.02	.02	.11	-.08	.44**		-.69**	-.27*	.00	-.04	-.03	.26*
12. Pseudo.	1.15	.36	.26*	.10	.21	.01	.09	-.05	.04	-.06	.20	-.46**	-.69**		.32*	-.04	.08	-.05	.04
13. Exempl.	.27	.34	.15	.02	-.16	-.07	.04	-.11	-.07	-.24	.38**	-.10	-.27*	.32*		-.08	.14	.03	.02
14. V/O	.48	.40	.17	.17	.15	.05	-.15	.16	.10	.07	-.18	.33**	.00	-.04	-.08		.11	-.11	.18
15. Self-d.	.47	.46	.05	.11	.01	.10	-.14	.17	.03	-.18	-.01	.05	-.04	.08	.14	.11		-.07	-.25*
16. Pause	3.30	5.34	.07	-.18	-.07	-.09	.12	-.11	-.10	-.31*	-.17	-.04	-.03	-.05	.03	-.11	-.07		-.38**
17. Hir. Rec.	59.73	19.15	.25*	.40**	.09	.05	-.12	.12	.13	.24	.16	.17	.26*	.04	.02	.18	-.25*	-.38**	

\*\*\* =  $p < .001$  \*\* =  $p < .01$  \*  $p < .05$  + =  $p < .08$

Note.  $N = 62$ . Gender: 0 = men, 1 = women. E = extraversion. A = agreeableness. O = openness. N = neuroticism. C = conscientiousness. Comm. = Communication skills. Persuas. = Persuasion skills.

GMA = general mental ability. Resp. = responsiveness. Story = Proportion of questions answered with a story. Pseudo. = Proportion of questions answered with a pseudostory. Exempl. = Proportion of questions featuring exemplification. V/O = Proportion of questions answered by expressing a value or an opinion. Self-d. = Proportion of questions answered with a self-description. Hir. Rec. = hiring recommendation.

Pause = total pause duration by candidates (4 interactions).

**Table 2.** Means (*M*), standard deviations (*SD*), minimum and maximum of pause duration by response delay (s)

	N	Mean	SD	Minimum	Maximum
Pause 1	248	1.88	2.17	0.1	21.0
Pause 2	98	2.69	1.93	0.1	10.0
Pause 3	32	4.13	4.37	0.6	23.0
Pause 4	9	5.72	8.30	1.8	27.4
Pause 5	3	1.67	0.76	0.8	2.2
Pause 6	1	9.50	-	9.5	9.5
Total pause duration	248	3.80	4.86	0.1	35.0

**Table 3.** Summary of null model and multilevel logistic regression predicting the type of response (narrative =0, non-narrative=1)

		Null Model			Multilevel model			
Random effects	Name	Variance	Std. Dev		Name	Variance	Std. Dev	
Candidates	Intercept	0.99	1.00		Intercept	0.93	0.96	
Fixed effects	Estimate	Std.Error	Odds ratio	Pr(< z )	Estimate	Std. Error	Odds ratio	Pr(< z )
Intercept	-1.87	0.29	0.85	<.001 ***	3.54	2.03	34.42	.08 +
Total pause duration					0.19	0.07	1.21	.01 **
Total pause duration <sup>2</sup>					-0.01	0.00	0.99	.05 *
Extraversion					0.44	0.50	1.56	.37
Log-2 likelihood				-111.86				-107.76
$\chi^2$								8.19*

\*\*\* =  $p < .001$  \*\* =  $p < .01$  \*  $p < .05$  + =  $p < .08$

**Table 4.** Summary of hierarchical multiple regression predicting hiring recommendation

Variable	Model 1		Model 2	
	<i>B</i>	<i>SE B</i>	<i>B</i>	<i>SE B</i>
Intercept	-64.54	36.92	-32.47	35.98
Gender	12.82*	5.76	13.16*	5.35
E	11.85*	5.29	9.26	4.99
A	-.76	3.96	-.81	3.67
O	1.32	4.37	.29	4.07
N	-6.44	5.72	-5.73	5.31
C	3.94	4.12	3.19	3.83
Comm.	.51	4.32	1.87	4.03
Persuas.	3.99	4.82	1.63	4.55
GMA	29.96	16.69	23.07	15.66
Resp.	.11*	.05	.09	.05
Story	20.19*	8.68	21.07*	8.06
Pseudo.	19.69*	8.77	19.44*	8.14
Exempl.	-2.21	7.40	-2.45	6.86
V/O	2.60	5.90	1.99	5.47
Self-d.	-13.50*	4.74	-13.93**	4.40
Pause			-.45**	.16
Adj. <i>R</i> <sup>2</sup>		.35		.44
<i>F</i> for <i>R</i> <sup>2</sup> change		3.18**		3.99***

\*  $p < .05$ . \*\*  $p < .01$ . \*\*\*  $p < .001$

*Note.*  $N = 62$ . Gender: 0 = men, 1 = women. E = extraversion. A = agreeableness. O = openness. N = neuroticism. C = conscientiousness. Comm. = Communication skills. Persuas. = Persuasion skills. GMA = general mental ability. Resp. = responsiveness. Story = Proportion of questions answered with a story. Pseudo. = Proportion of questions answered with a pseudostory. Exempl. = Proportion of questions featuring exemplification. V/O = Proportion of questions answered by expressing a value or an opinion. Self-d. = Proportion of questions answered with a self-description. Hir. Rec. = hiring recommendation. Pause = total pause duration by candidates (4 interactions).

Figures

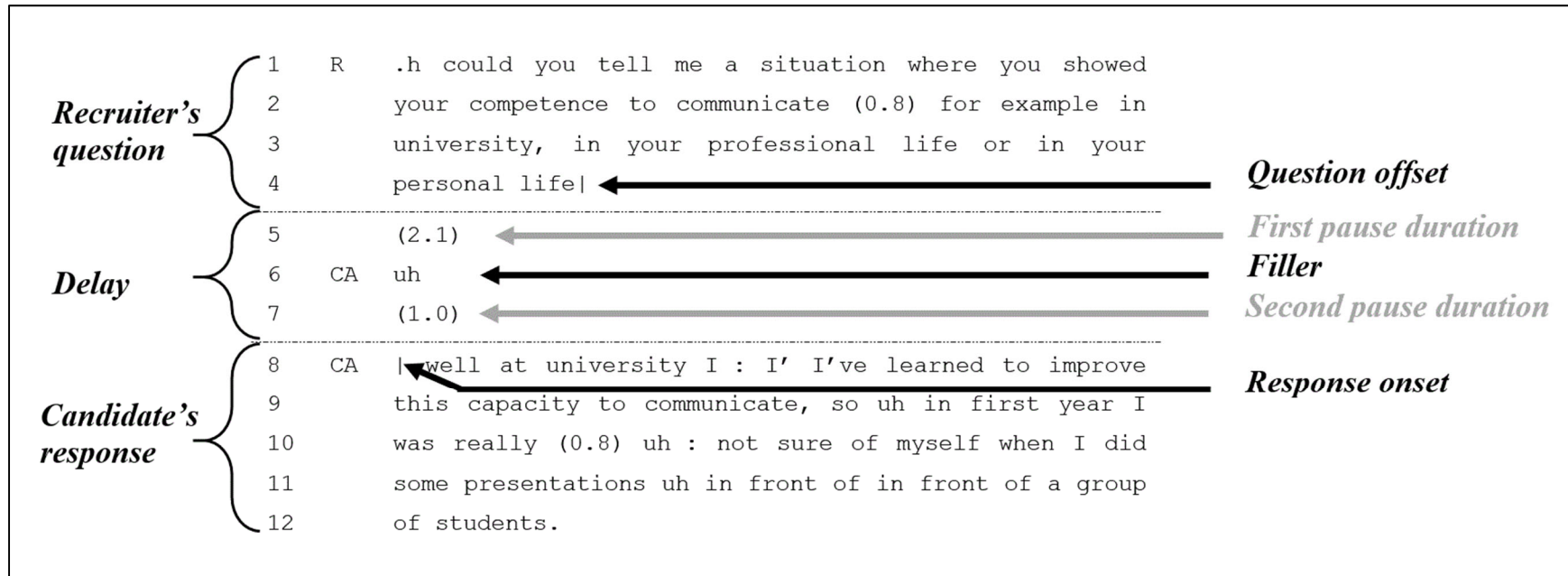


Figure 1. Example of response delay with filler.

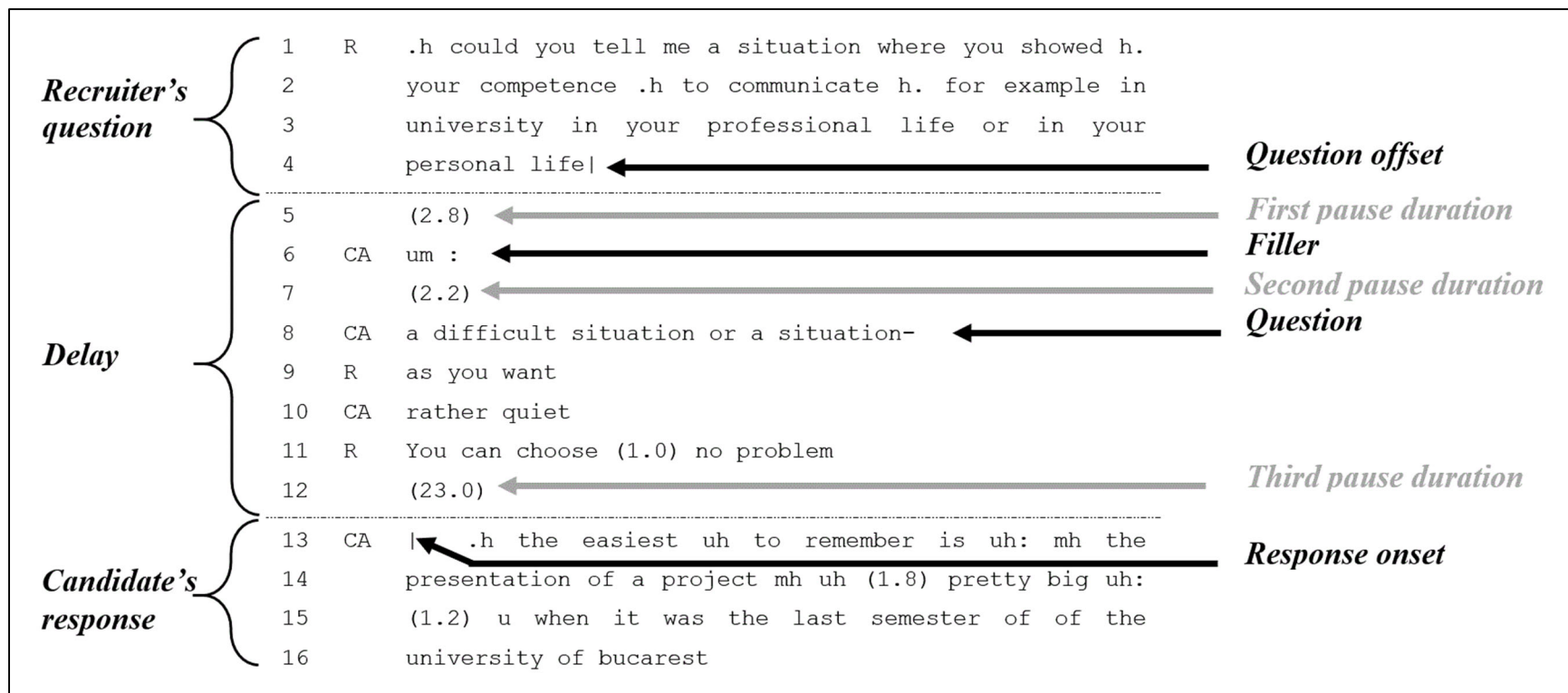


Figure 2. Example of response delay with question.

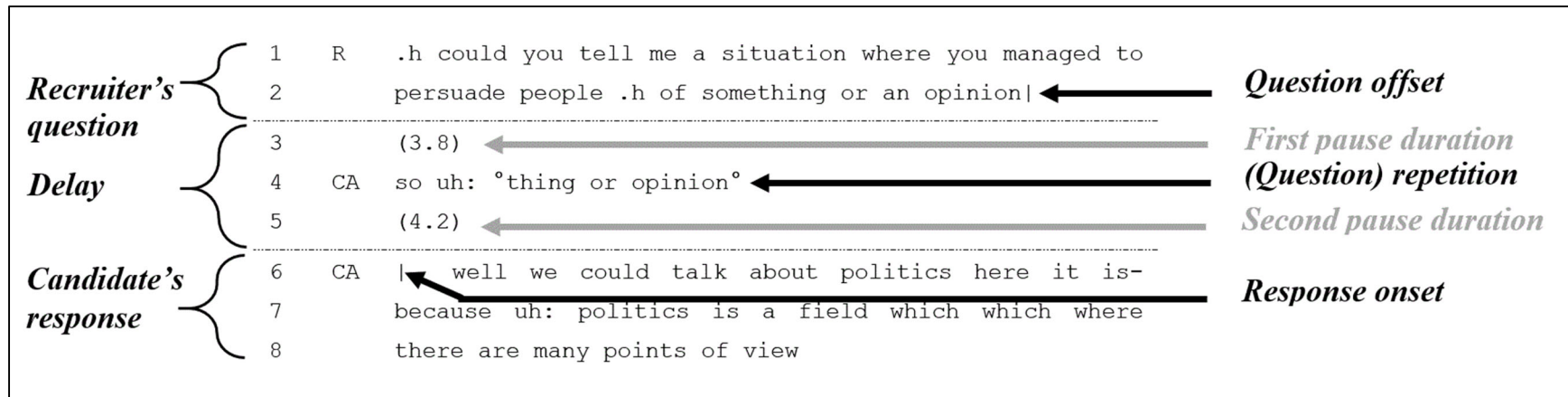


Figure 3. Example of response delay with repetition.

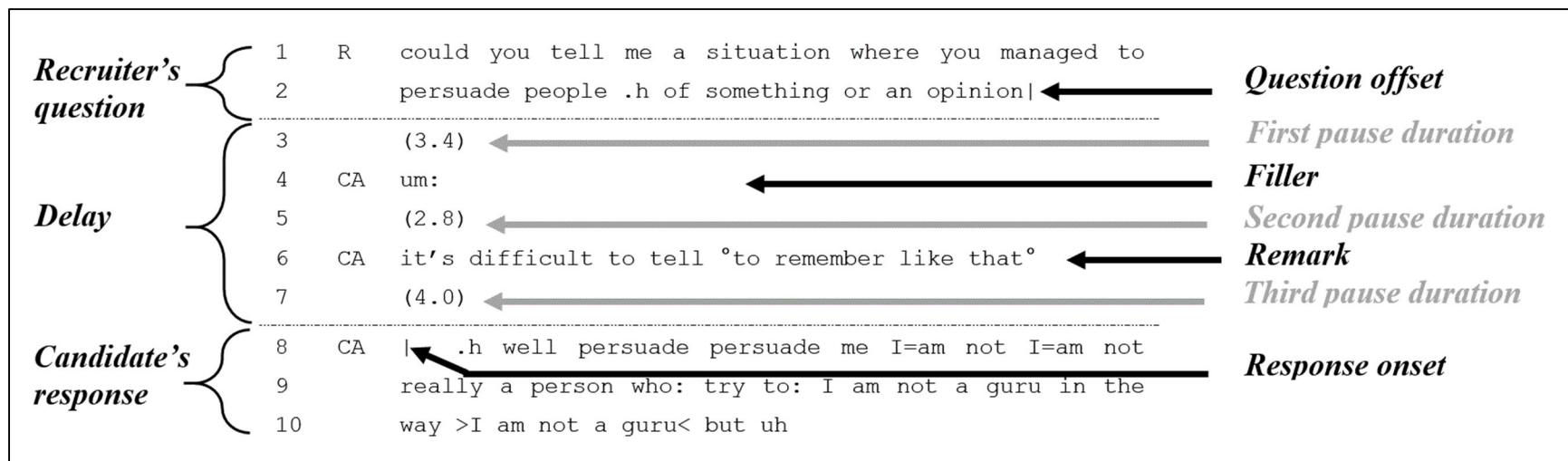


Figure 4. Example of response delay with remark.

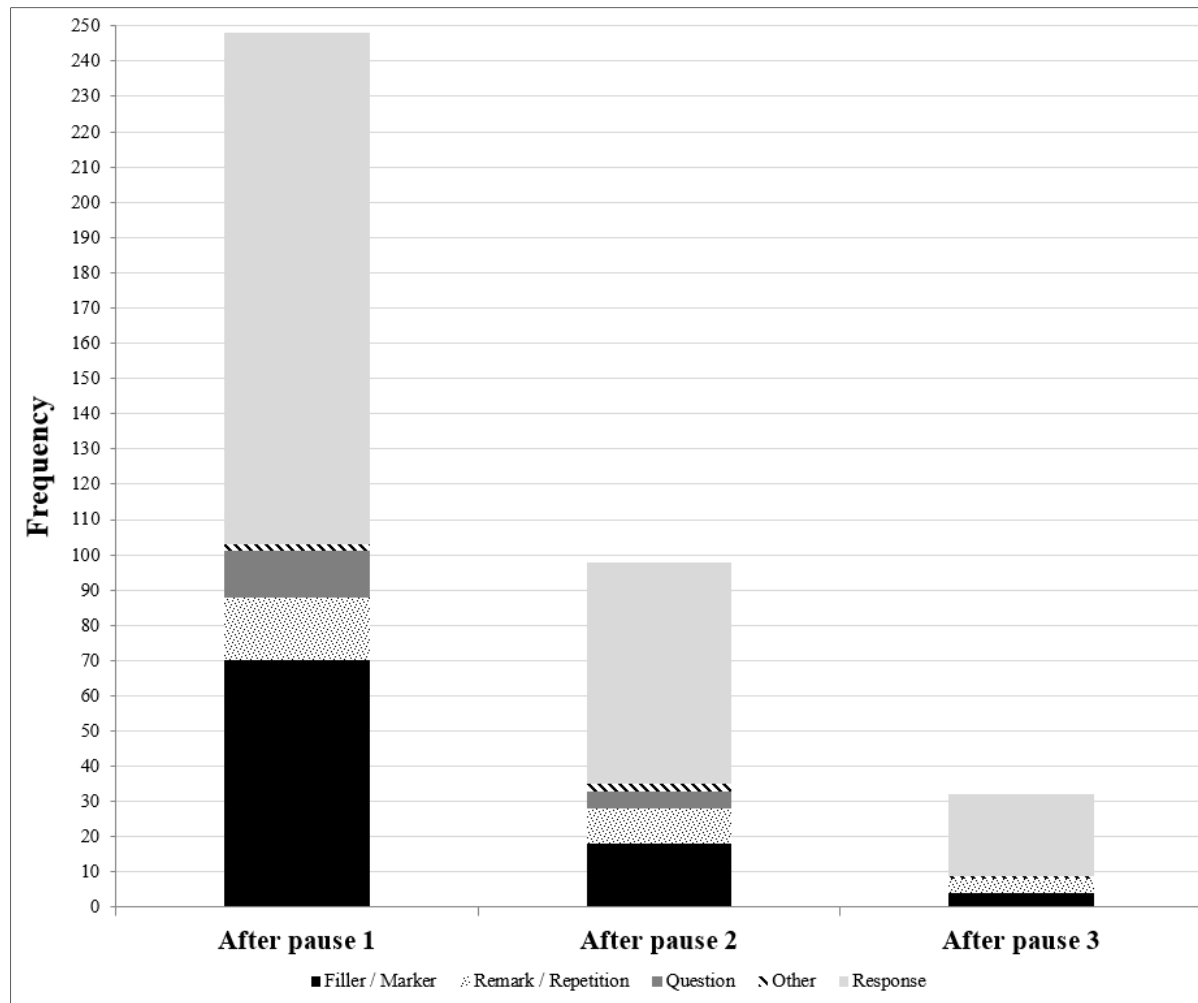
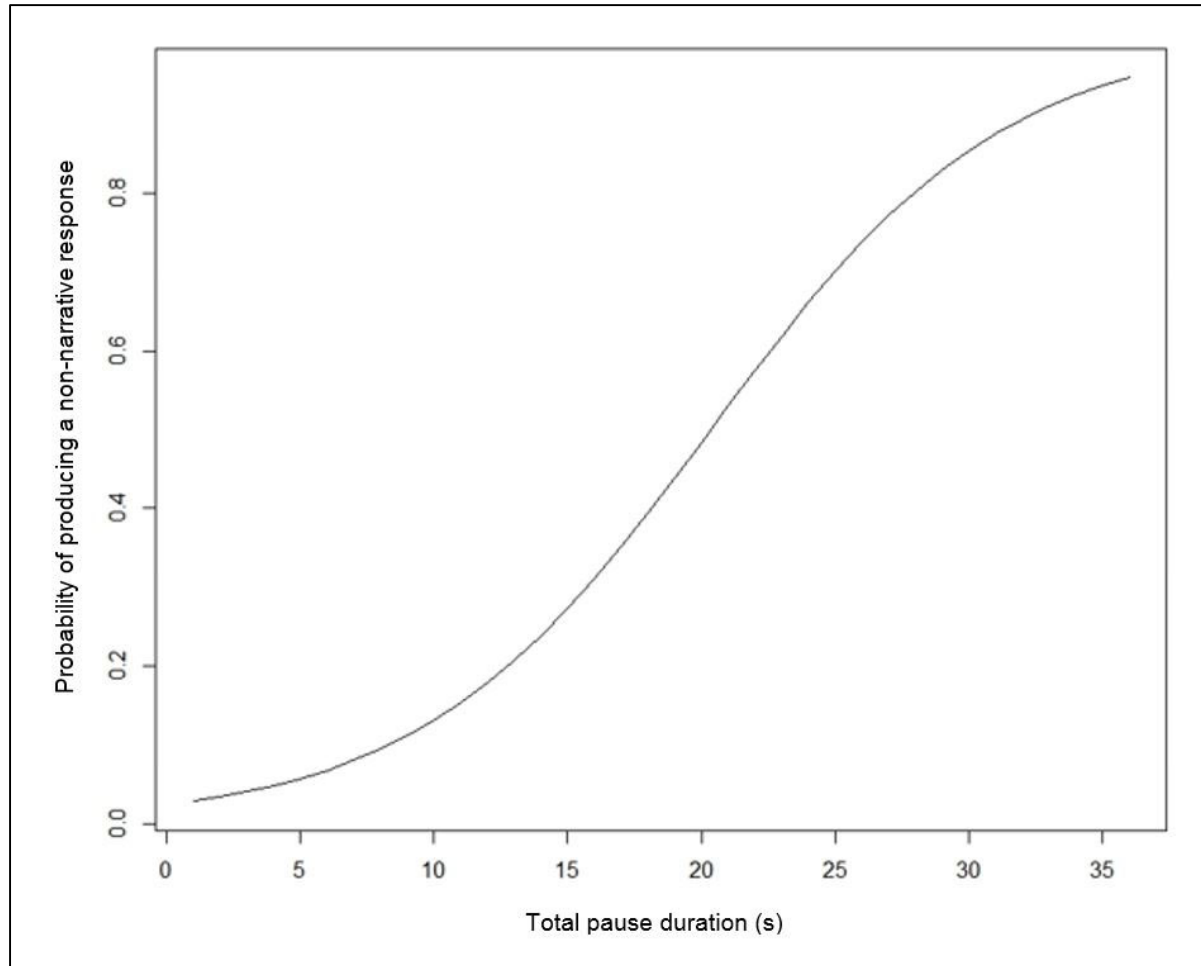


Figure 5. Frequency of events during delay, after the first three pauses.



**Figure 6.** Probability of producing a non-narrative response (vs. narrative response) according to total pause duration (s).

## APPENDIX II

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Brosy, J., Bangerter, A., & Ribeiro, S. (submitted). Encouraging the production of narrative responses to past-behavior interview questions: Effects of probing and information

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# **Encouraging the Production of Narrative Responses to Past-Behavior**

## **Interview Questions: Effects of Probing and Information**

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We would like to thank seminar participants for their help in conducting Study 2.

### **Disclosure of interest**

The authors report no conflict of interest

### **Data Availability Statement**

The data that support the findings of this study are available from the corresponding author, Julie Brosy, upon reasonable request.

## **Encouraging the Production of Narrative Responses to Past-Behavior Interview Questions: Effects of Probing and Information**

In behavioral interviews, past-behavior questions invite applicants to tell a story about a past job-related situation. Nevertheless, applicants often do not produce stories on demand, resorting to less appropriate responses. In a sample of real selection interviews (Study 1), only 50% of applicants' responses to past-behavior questions were indeed stories. We explored two factors that may increase applicants' storytelling tendencies: probing and information about past-behavior questions. In two experiments simulating selection interviews, we manipulated recruiter probing during the interview (Study 2) and the level of participants' information about the expected answer format of past-behavior questions (Studies 2 and 3). Probing induced participants to tell more stories and to include more narrative diversity in their stories, but there was no effect of giving participants information or not. More information did help participants to tell less pseudostories (generic descriptions of situations). Analyses of participants' thoughts and emotions experienced during question-answering suggest that finding an appropriate example to narrate is a major problem. Storytelling rate also varied by competency. Findings are relevant for theories of behaviour elicitation in selection situations.

Keywords: Selection interview, past-behavior question, storytelling, probing, behaviour elicitation

## Introduction

Research in personnel selection has focused heavily on the validity of selection methods (Schmidt & Hunter, 1998), especially for interviews, which have been historically dogged by concerns about predictive validity (Judge, Cable, & Higgins, 2000). Recently, however, a consensus has emerged that selection interviews can attain high levels of validity if they are structured (e.g. Huffcutt & Arthur, 1994; Levashina, Hartwell, Morgeson, & Campion, 2014). Structure involves a range of practices (Campion, Palmer, & Campion, 1997; Huffcutt & Arthur, 1994) designed to influence the content of the interview or evaluation of applicants, and often limits interactivity. Despite the better validity of structured interviews, practitioners remain reluctant to use them (Lievens & De Paepe, 2004). However, one specific type of structured interview, the behavioral interview, may be becoming more popular (Ralston, Kirkwood, & Burant, 2003; Roulin & Bangerter, 2012) and evidences high predictive validity (Huffcutt, Conway, Roth, & Klehe, 2004; Huffcutt, Weekley, Wiesner, Degroot, & Jones, 2001).

In behavioral interviews, job analysis is used to identify relevant competencies. Applicants are then asked a series of *behavioral questions* about their actions in past situations (so-called past-behavior questions, e.g., *Can you tell me about a time when you had to deal with an angry client?*) and their responses are rated to gauge their mastery of those competencies. Past-behavior questions invite applicants to produce *narrative responses*, i.e. to *tell a story* about the past job-related situation, thereby making storytelling skills increasingly important (Ralston et al., 2003). Many studies have investigated applicants' responses in terms of broad categories of impression management tactics in structured interviews (e.g., self-promotion, ingratiation) and their impact on interviewers' evaluations (Ellis, West, Ryan, & DeShon, 2002; Van Iddekinge, McFarland, & Raymark, 2007). However, these studies

typically do not analyse the actual discourse produced. As a result, little is known about the prevalence of personal stories in interviews, about applicants' storytelling abilities, about how to help applicants produce better responses using storytelling, or about how to evaluate them (Bangerter, Corvalan, & Cavin, 2014; Levashina et al., 2014; Ralston et al., 2003). For even perhaps the most basic question, how prevalent stories are in response to past-behavior questions, studies show inconsistent results. Stevens and Kristof (1995) found that many applicants in a field study spontaneously told stories (not necessarily in response to past-behavior questions). However, Bangerter et al. (2014) found that only 23 % of applicants told stories in response to past-behavior questions.

Thus, there is much scope for helping applicants improve their storytelling performance. Such improvements could potentially lead to better functioning of the behavioral interview. Indeed, if applicants can be trained to produce better stories, they will be in a position to better communicate the true level of their competencies, thus potentially increasing the predictive validity or construct validity of the interview. This in turn illustrates a more general theoretical issue of how to elicit trait-expressive behaviors in selection situations (De Kock, Lievens, & Born, 2018). Recent approaches suggest that recruiters' active participation in interactions with applicants may increase the availability and relevance of behavioral cues that allow measurement of job-relevant traits. Thus, recruiters may play a potentially important role in facilitating the storytelling process.

A major contribution of this paper is to document sub-optimal functioning of past-behavior questions and to test possible improvements. We first measured how often stories get produced in response to past-behavior questions in real selection interviews (Study 1). We then conducted two experiments (Studies 2 and 3) exploring factors that may increase storytelling in simulated interviews, where participants played the role of applicants (we

hereafter use this label). We manipulated how much *information* applicants received about the responses expected of them as well as whether or not experimenters (who played the role of recruiters; we hereafter use this label) provided cues to applicants about expected responses, i.e., were allowed to engage in *probing*. Our findings suggest explanations for the difficulties applicants may experience in answering past-behavior questions and suggest ways recruiters may help them produce better stories, thus supporting theories of active cue elicitation in selection situations (De Kock et al., 2018). In the next sections, we define and motivate the role of storytelling and stories in selection interviews, before describing the rationale of our studies.

### ***Storytelling and Stories in Selection Interviews***

Stories can be distinguished from storytelling (Mandelbaum, 2013). Storytelling is a collaborative activity involving narrator(s) and an audience. A story is an abstraction from that activity, that is, a set of propositions describing an episode the narrator(s) have experienced. In interviews featuring past-behavior questions, recruiters and applicants are participants in a storytelling activity (applicants are narrators and recruiters are the audience). Afterwards, recruiters reconstruct the story as a basis for evaluating applicants on relevant competencies. Recommended practices for structured interviewing aim at minimizing recruiters' involvement in the social interaction (Campion et al., 1997; Dipboye, 1994). But such practices may also inhibit productive storytelling activities. Designing recommendations for optimal recruiter behavior should thus build on properties of both the storytelling activity and its product, the story.

### ***Storytelling as a Collaborative Activity***

Storytelling has been widely studied in communication and conversational research (Mandelbaum, 2013; Norrick, 2007). Like any conversation, storytelling is a collaborative

activity where participants actively coordinate their actions to progress through it. Launching an episode of storytelling involves making it recognizable as such so that participants understand they are expected to suspend the usual rules of turn-taking (Sacks, Schegloff, & Jefferson, 1974), to allow the narrator extended rights to the floor. Would-be narrators attempt to secure the interest of audiences to gain licence to launch the telling. Progress in the activity also depends on listeners' participation. Listeners produce two type of responses, *generic responses* (nodding, *mhm*) and *specific responses* (wincing, exclaiming or otherwise commenting on a specific aspect of the narrative). In the absence of listener responses, stories are told less well and end abruptly (Bavelas, Coates, & Johnson, 2000). In this sense, listeners can be considered as co-narrators of a story. Participants also collaborate (Mandelbaum, 2013) in defining the meaning of a story (e.g., illustrating the character of a person one is gossiping about). Finally, participants collaborate in ending a story (e.g., by collectively recognizing its climax) and moving on to other topics.

In selection interviews, the collaborative nature of storytelling means that it involves both applicants and recruiters. Recruiters who behave interactively and participate in the storytelling activity may ultimately help applicants tell better stories (Ralston et al., 2003). Recruiters who limit their involvement in the interaction to minimize bias (Campion et al., 1997; Huffcutt & Arthur, 1994) may inadvertently inhibit productive storytelling.

### *Stories and their Impact*

In selection interviews, stories have many potential effects on recruiters. First, they may illustrate applicants' claims (e.g., by showing how applicants overcame obstacles; Stevens & Kristof, 1995). Their concreteness helps the audience to imagine what is recounted (Schank & Berman, 2002). They constitute self-promotion tactics, which create an attractive image and increase hiring recommendations. Furthermore, well-told stories may enhance applicants'

distinctiveness and help recruiters remember them better (Stevens & Kristof, 1995). Finally, detailed stories are perceived as difficult to fake, thus increasing applicants' credibility (Bangerter, Roulin, & König, 2012). But how do stories actually unfold in interviews?

Stories are "discourse that is organized more or less chronologically and tells what characters did in a particular situation and what came of their actions. Stories may be very brief or extended, and they may depict scenes, characters, actions, and consequences that vary in richness and detail" (Ralston et al., 2003, p. 11). A story meets three criteria (Bangerter et al., 2014; Norrick, 2007; Ralston et al., 2003). First, it is a description of events about a unique past episode. Second, events are chronologically or causally coherent and linked by temporal markers. Third, it provides information about the where, who, what and how of the episode (the situation, the protagonists, what they did and how they resolved the situation). Several models describe the typical constituent parts of a complete story, e.g., Labov's (1972) narrative structure - abstract, orientation, complicating action, evaluation, resolution, and coda. In selection interviews, the STAR mnemonic - situation, task, action and results (Kessler, 2006) is used by recruiters to evaluate the completeness of applicants' stories.

#### *Difficulties with Storytelling in the Selection Interview*

Several difficulties may prevent applicants from producing effective stories during the interview (Bangerter et al., 2014; Ralston et al., 2003). One difficulty is cognitive in nature: Storytelling involves processes of autobiographical recall and response planning and production (Bradburn, Rips, & Shevell, 1987; Brosy, Bangerter, & Mayor, 2016; Huffcutt, Culbertson, Goebel, & Toidze, 2016). Behavioral questions may create strong memory demands because applicants have to recall a suitable episode to narrate. The stressful context of the selection interview may exacerbate this problem if it increases the cognitive load experienced by applicants, thus impeding effective searching in memory for a relevant past

episode. There may also be differences in how easily various competencies can be translated into stories (Bangerter et al., 2014). It may be more difficult to find examples for more mundane, everyday competencies (like *organizing abilities*) than for infrequently used competencies (like *negotiation*).

Difficulties in producing stories in response to past-behavior questions may also relate to social processes. Finding a relevant example is compounded by the time pressure inherent to the question-answering process, which is subject to self-presentation goals in any conversational situation (Smith & Clark, 1993), but especially in job interviews (Broisy et al., 2016). Because excessive delays in initiating a response may lead to negative impressions, applicants experiencing difficulties in choosing an example may choose to start talking faster but perhaps less appropriately (Broisy et al., 2016). For example, they may be more likely to talk about recent or highly available events (Huffcutt et al., 2016), or produce pseudostories (generic descriptions of event types rather than a unique event; Bangerter et al., 2014) which may not serve them best.

A further difficulty in producing stories in response to past-behavior questions results from the collaborative nature of everyday storytelling activities. Because would-be storytellers try to gain the agreement of their audience before initiating a story (Mandelbaum, 2013), applicants may hesitate to take the initiative (Bangerter & Gosteli-Corvalan, 2017) required to tell a story because they are unsure of its appropriateness (Bangerter et al., 2014; Broisy et al., 2016). Moreover, because a story's progress and denouement depend on the actions of listeners (Bavelas et al., 2000), in the behavioral interview, this means interactive behavior on the part of recruiters (e.g., probing) may be necessary to encourage productive storytelling.

### ***The current studies***

The current studies explored storytelling in applicants' responses to recruiters' past-behavior questions, investigating how often applicants produced stories in real interviews, what difficulties they face in responding to past-behavior questions and testing the effectiveness of interventions designed to facilitate storytelling. Beyond the specific context of behavioral interviewing, these issues relate to the general problem of elicitation of trait-expressive behavior in personnel selection, or how to create felicitous conditions for observing representative samples of behavior (in our case: stories) to measure traits of interest (in our case: competencies). Recent models of "good raters" (De Kock et al., 2018) suggest that recruiters are not just passive observers of applicant behavior in testing situations, but can themselves actively contribute to expression of relevant cues through their interactions with applicants.

From the perspective of behavior elicitation, it is important to first establish the efficacy of past-behavior questions in eliciting stories. Previous studies suggested applicants have difficulty producing stories (Bangerter et al., 2014), but were based on interviews for an entry-level position created for the purpose of a validation study. Thus, it is important to ascertain how frequent storytelling in response to behavioral questions is in real interviews. In Study 1, we coded how often past-behavior questions were asked in a diverse sample of real selection interviews and how often applicants responded by telling stories. We formulated Research Question 1 (RQ1): *How often do applicants produce stories in response to recruiters' past-behavior questions?*

In Studies 2 and 3, we tested interventions to enhance the production of stories in response to past-behavior questions. For ethical and internal validity reasons (Lonati, Quiroga, Zehnder, & Antonakis, 2018; Podsakoff & Podsakoff, in press), we used experimental methods (simulated interviews). We manipulated two independent variables.

The first variable (manipulated in both Studies 2 and 3) is applicants' level of *information* before the selection interview. According to trait activation theory (Lievens, Schollaert, & Keen, 2015), this manipulation constitutes a *general* situational characteristic that moderates the effect of possessing a trait on the activation of a trait-expressive behavior. We gave applicants information just before the interview about the type of questions they would be asked (i.e. past-behavior questions), the competencies they would be asked about or the expected response type, allowing them to use this information to prepare their responses. This manipulation allows investigating the role of cognitive factors like memory in recalling appropriate examples or psycholinguistic factors. More precisely, we expected the manipulation of *information* would allow applicants to search in memory for a relevant past episode *before* and not *during* the interview, in a context less stressful than during the interview and with no time pressure inherent to the question-answering process (Huffcutt et al., 2016) and to facilitate response planning and production. This leads to the formulation of Hypothesis 1 (H1): *Information increases production of stories*. We also expected information to affect the production of pseudostories (Bangerter et al., 2014). Pseudostories are a common response type where applicants describe generic sets of events (typically in the present tense, e.g., *I usually organize my time by setting priorities*) instead of a single unique event. Because information alerts applicants to the fact that a story is an expected response (and because applicants have time to find an example to narrate, information should also reduce the production of pseudostories. We thus formulate Hypothesis 1b (H1b): *Information decreases production of pseudostories*. Because information allows targeted preparation and thus increases the potential to recall relevant episodes, we expected information to increase the narrative diversity of stories, that is, the range of elements like the situation, task, actions

or results that applicants would talk about. This leads to the formulation of Hypothesis 2 (H2): *Information increases the narrative diversity of stories.*

The second variable (manipulated in Study 2) is *probing*. We manipulated recruiters' interactive behavior during the interview by either allowing them to produce probes or not. According to trait activation theory (Lievens et al., 2015), this manipulation constitutes a specific intervention on the part of the recruiter in the interview situation. It allows investigating the role of social factors like the collaborative nature of storytelling. This manipulation responds to calls for more research on the effects of probing (De Kock et al., 2018; Levashina et al., 2014). We expected that recruiter probing would lead applicants to tell stories more often as well as tell more detailed and complete stories, by alerting them to missing information in their response (like insufficient descriptions of actions or results). This leads to the formulation of Hypothesis 3 (H3): *Probing increases applicants' production of stories*, and Hypothesis 4 (H4): *Probing increases the narrative diversity of stories.*

Beyond the production and narrative diversity of stories, we were interested in what psychological processes mediate responding to past-behavior questions. As described above, it is currently unclear what role is played by cognitive difficulties in recalling an appropriate episode to narrate (Huffcutt et al., 2016) or hesitations about the appropriateness of extended storytelling. Interventions to elicit storytelling responses would benefit from knowledge about these processes. We thus formulate Research Question 2 (RQ2): *What are the cognitive and emotional processes associated with answering past-behavior questions?*

Finally, following previous research that found differences in storytelling depending on the competency measured (Bangerter et al., 2014), it seems important to assess the effects of competency on storytelling. This may have practical implications for recruiters. We thus

formulate Research Question 3 (RQ3): *Does the production of stories depend on the type of competency measured?*

### **Study 1**

Study 1 investigated RQ1 (*How often do applicants produce stories in response in response to recruiters' past-behavior questions?*) using a sample of real selection interviews, thus increasing ecological validity relative to previous studies (Bangerter et al., 2014).

### **Methods**

#### *Participants*

Eighty selection interviews were audiorecorded in two organizations in French-speaking Switzerland. Each interview involved an applicant and two or three recruiters. Applicants (62.5% women,  $M_{\text{age}} = 33.95$  years) had experienced on average 5.7 interviews ( $SD = 5.2$ ) and had on average 13.07 years ( $SD = 11.5$ ) of professional experience, 25.3% of them had managerial experience and 12.6% had a university diploma. Thirty-one recruiters participated (35.5% of women,  $M_{\text{age}} = 45.10$  years). They conducted on average 22.23 interviews per year. Three were from the HR department and 28 were line managers.

#### *Procedure*

We contacted the human resources (HR) department of both organizations to obtain their initial agreement to participate. They then contacted the other participants. Non-HR recruiters (e.g., line managers) were informed about the study when they selected applicants to interview (76% agreed to participate). They received an information letter and a consent form. Applicants were informed about the study when they were called for an interview (89% agreed to participate). They received an information letter, a consent form and a questionnaire about sociodemographic data and personality. The first author attended and audiorecorded all interviews. After the interview, applicants filled out a second questionnaire about their use of

impression management. Recruiters filled out a questionnaire about their perception of applicant impression management, a hiring recommendation and sociodemographic data. Any participants' questions were answered, and they were thanked for their participation.

Interviews were transcribed word-for-word as a basis for coding.

### *Coding*

*Past-behavior questions.* We coded past-behavior questions asked by recruiters. A past-behavior question was calibrated to a competency and asked applicants to talk about a past situation they experienced and ideally where they performed well on the desirable competence (Bangerter et al., 2014).

*Stories.* We coded the presence or absence of stories for the responses to each past-behavior question (double-coding of 20 interviews, Cohen's kappa = .76). A story was defined as "a set of events related to a unique past episode, characterized by a unity of time or action, with constituents often linked by temporal markers (e.g., *then*)" (Bangerter et al., 2014, p. 6).

### ***Results and Discussion***

Past-behavior questions were asked in 27 interviews, for a total of 42 questions. Applicants produced 21 stories in response, meaning that they responded with the appropriate response type only 50% of the time. While the rate of storytelling is higher than in previous findings, past-behavior questions clearly are not optimal techniques for eliciting stories. Thus, results confirmed the need to further our understanding of applicants' storytelling abilities.

### **Study 2**

Study 2 investigated H1 (effect of information on story production), H2 (effect of probing on narrative diversity of stories), H3 (effect of probing on story production), H4 (effect of probing on narrative diversity of stories) and RQ3 (storytelling production by competency).

Hypotheses were tested in a simulated selection interview, where the experimenter (the third author) played the role of the recruiter and participants played the role of applicants. The experiment featured a 2 X 2 between-subjects design (*information X probing*). Because prior research documented links between individual differences and storytelling, we measured participants gender, age, personality, ability to identify criteria (ATIC) (Kleinmann et al., 2011), general mental ability (GMA) and work and interview experience.

### ***Methods***

#### *Participants*

We recruited 60 French-speaking students via personal contacts of the experimenter (25 women,  $M_{age} = 24.20$ ,  $SD_{age} = 3.29$ ). A majority (55) already had had a first job and experienced at least one selection interview (56). They each received 10 Swiss francs for participating and an additional prize of 300 Swiss francs was awarded for the best performance during the interview. The prize was designed to motivate applicants to perform well, i.e., to avoid them simply “going through the moves” in participating.

#### *Independent variables*

*Information.* Participants received written instructions 5 minutes before the interview to prepare themselves. In the *uninformed* condition, they received the following instructions: *You have 5 minutes to prepare yourself for the selection interview. Try to imagine questions the recruiter could ask you, with no information about the type of questions they would be asked.* In the *informed* condition, they received the following instructions: *You have 5 minutes to prepare yourself for the selection interview. During this interview, the recruiter will ask you past-behavior questions, i.e. questions you need to respond to by describing a behavior. Tell what you did in this specific situation. Example of past-behavior question: Could you describe a situation where you felt stressed and how you managed it?*

*Probing.* In the *no probing* condition, the experimenter asked the four past-behavior questions and didn't use any probes contingent on participants' responses. In the *probing* condition, the experimenter chose between several pre-established probes, depending on the participant's response and following an inappropriate or incomplete response. Following a response not mentioning a specific situation (i.e. a response type which did not correspond to the criteria defining a story), the experimenter asked *Can you give me an example of a situation?* Following an incomplete story, with the mention of a specific situation but no action, the experimenter asked *Can you tell me a little bit more about what you did in this situation?* or *Can you tell me more about it?* Following an incomplete story, with the mention of a specific situation but no results, the experimenter asked *And what can you tell about the result of this?* or *And finally?* The experimenter used a maximum of two probes per question, i.e., a maximum of eight per interview.

### *Procedure*

Participants were informed the study was about interactions during selection interviews and that they would play the role of applicants. A few days before the experiment, they received three job ads (*business analyst, company lawyer* or *HR specialist*) and chose one. All three in fact required the same competencies: *adaptation, autonomy, team work* and *organizing*. When they arrived for the experiment, they read and signed a consent form. Then they received the instructions, including the reminder of the prize, and had 5 minutes to prepare themselves for the interview. The interview began with two introductory questions (e.g., *Could you present yourself in a few words?*) to help participants immerse themselves in the simulation. Then they were asked four past-behavior questions (with or without probing, depending on the condition). An example question (for the adaptation competency) was *Can you describe how you managed a situation where a sudden and urgent event occurred while you were doing a*

*routine task?* The interview was videotaped. After the interview, participants filled out a manipulation check and provided individual differences data before being debriefed and paid. After the study, the experimenter determined the best-performing participant to award the prize to. Interviews were transcribed word-for-word in preparation for coding.

### *Measures*

*Manipulation check.* We created 3 items (e.g., *To what extent did the experimenter take part in the interaction during the interview?*) to check if the probing manipulation was perceived by participants. Participants responded via 5-point Likert scales from 1 (e.g., *not at all*) to 5 (e.g., *very much*), Cronbach's alpha = .83. We computed a total score by participant from 3 to 15. Participants in the probing condition ( $M = 12.67$ ,  $SD = 2.29$ ) perceived the experimenter as significantly more interested and participative than in the no-probing condition ( $M = 9.03$ ,  $SD = 2.63$ ),  $F(1,59) = 32.5$ ,  $p < .001$ .

*Gender.* We measured participant gender (0 = men, 1 = women).

*Interview experience.* We asked participants how many selection interviews they had experienced.

*Professional experience.* We asked participants how many years of professional experience they had.

*General mental ability (GMA).* We assessed GMA with the Wonderlic Personnel Test (Wonderlic, 2001). Participants had 12 minutes answer a maximum of 50 questions. The score is the number of correct responses.

*ATIC.* We measured the ability to identify criteria (ATIC) with 8 items. Instructions were to identify the competencies measured by past-behavior questions. An example for the autonomy competency is *Can you describe a situation where you took an initiative and achieved it.* Participants' responses were coded as either incorrect or correct by two judges,

allowing for computation of interrater agreement. Cohen's kappa was high, varying from .78 to 1 depending on the item. We computed a total score of correct identifications (1-8) by participant (Kleinmann et al., 2011).

*Personality.* We measured personality with 30 items measuring the five traits of the NEO PI-R (Costa & McCrae, 1992): neuroticism (alpha = .76), extraversion (alpha = .76), openness (alpha = .65), agreeableness (alpha = .59 with one item removed) and conscientiousness (alpha = .86). Items were opposite pairs, an example for extraversion is *social – solitary*. Items were answered on a scale where 1 = *very much*, 2 = *pretty much*, 3 = *quite*, 4 = *quite*, 5 = *pretty much* and 6 = *very much*.

*Stories.* We coded the presence or absence of stories for the responses of each past-behavior question, before and after probing (double coding of 32 responses, Cohen's kappa = .87) and computed the number of responses featuring stories (between 0 and 4) by participant.

*Increase of stories.* We computed the presence or absence of an increase of stories for participants in the *probing* condition. An increase was counted when there was no story before the probe and a story appeared after it. We excluded one participant in the *probing* condition who was not asked any probes (experimenter error).

*Narrative elements.* We coded the presence or absence of three narrative elements contained in stories: Situation, Task/Action, and Results (Kessler, 2006), both before and after probing (double-coding of 32 responses, Cohen's kappa between .63 and .76).

*Increase of narrative elements.* We computed the presence or absence of an increase of each narrative element for participants in the *probing* condition. An increase was counted when the narrative element was not mentioned before a probe and appeared after it.

## **Results**

[Table 1 near here] Descriptive results appear in Table 1. We found no significant correlations between the initial story production rates, the increase of stories and the production of narrative elements and gender, age, personality, ATIC, GMA and work and interview experience. Therefore, we did not use these variables in further analyses.

*Hypotheses 1 and 3: Effects of information and probing on storytelling*

We ran a 2 X 2 between-subjects ANOVA (*information X probing*) predicting the initial level of production of stories. Before any probes, participants produced stories 56 % of the time.

We found no significant effect of *information*,  $F(1,56)=1.46$ ,  $p = .23$ ,  $d = 0.44$ , on participants' production of stories. Therefore, H1 was not supported. There was no significant effect of *probing*,  $F(1,56)=2.71$ ,  $p = .106$ ,  $d = 0.60$ , and no significant interaction effect,  $F(1,56)=.59$ ,  $p = .446$  (neither effects were expected to be significant on the initial production of stories). To test H3 we then focused on the *probing* condition. After probing, participants produced stories 85 % of the time. The overall increase was significantly different from 0,  $t(28) = 5.51$ ,  $p < .001$ , 95 % CI [.61, 1.32],  $d = 1.03$ . Probing induced participants to tell significantly more stories for three competencies out of four (see Table 2, only autonomy did not increase; the initial production rate of stories for autonomy may have been too high for probing to increase it). Overall, therefore, H3 was supported.

*Research Question 3: Storytelling by competency*

We conducted pairwise t-tests between competencies (using a Bonferroni correction;  $p = .05/6 = .008$ ) to ascertain whether stories are more easily produced for some competencies than others. Autonomy ( $M = .72$ ,  $SD = .45$ ) was significantly different from teamwork ( $M = .47$ ,  $SD = .50$ ),  $t(59)$ , 3.23,  $p = .002$ ,  $d = 0.83$ , and from organizing ( $M = .40$ ,  $SD = .49$ ),  $t(59)$ , 3.77,  $p = .000$ ,  $d = 0.97$ . Other comparisons were not significant. Adaptation was not

significantly different from autonomy  $t(59)$ ,  $-1.09$ ,  $p = .279$ ,  $d = -0.28$ , organizing,  $t(59)$ ,  $2.69$ ,  $p = .009$ ,  $d = 0.69$ , or teamwork  $t(59)$ ,  $2.32$ ,  $p = .024$ ,  $d = 0.60$ . Teamwork was not significantly different from organizing,  $t(59)$ ,  $.78$ ,  $p = .437$ ,  $d = 0.20$ . Thus, participants produced significantly more stories when asked about adaptation and autonomy than when asked about teamwork and organization (Table 2). [Table 2 near here]

*Hypotheses 2 and 4: Effects of information and probing on narrative elements in stories*

Before any probes, situations were the most frequent narrative element mentioned (35 % of the time), following by tasks/actions (31 %) and results (15 %) (see Table 3). We ran a 2 X 2 between-subjects ANOVA (*information* by *probing*) predicting the narrative elements initially produced. Participants in the *informed* condition did not differ from participants in the *uninformed* condition,  $F(1, 60) = .89$ ,  $p = .349$ ,  $d = 0.34$ . Before any probes, participants in the *probing* condition differed from participants in the *no probing* condition,  $F(1, 60) = 20.49$ ,  $p < .001$ ,  $d = 1.65$ . The interaction effect was not significant,  $F(1, 60) = .002$ ,  $p = .961$ ,  $d = 0.02$ . *Information* did not influence narrative diversity in participants' stories. Therefore, H2 was not supported. We then focused on the *probing* condition. The overall difference was significantly different from 0,  $t(28) = 8.85$ ,  $p < .001$ , 95 % CI [3.05, 4.88],  $d = 1.62$ . Probing induced participants to include more narrative diversity in their stories by increasing talk about actions and results (see Table 3). Therefore, H4 was supported.

[Table 3 near here] Note that participants in the *probing* condition included more overall narrative elements in their stories before any probes than participants in the *no probing* condition. This unexpected difference could be a learning effect: after one or two questions featuring probes, participants could have been alerted to the narrative elements expected and adapted their subsequent initial responses accordingly. We tested for this learning effect by comparing narrative elements present in participants' initial and subsequent responses before

any probes. Using a Bonferroni correction ( $p = .05/6 = .008$ ), results showed that participants actually mentioned less narrative elements in response to Question 3 (teamwork,  $M = .87$ ,  $SD = 1.14$ ), and question 4 (organizing,  $M = .77$ ,  $SD = .94$ ) than in response to Question 2 (autonomy,  $M = 1.83$ ,  $SD = .95$ ), respectively  $t(29) = 3.92$ ,  $p = .000$ ,  $d = 1.43$ , and  $t(29) = 5.41$ ,  $p = .000$ ,  $d = 1.98$ . There were no significant differences in the narrative elements mentioned between responses to Question 1 (adaptation  $M = 1.30$ ,  $SD = 1.12$ ) and to Question 2,  $t(29) = -2.19$ ,  $p = .036$ ,  $d = -0.80$ , Question 3,  $t(29) = 1.78$ ,  $p = .085$ ,  $d = 0.65$ , and Question 4,  $t(29) = 1.98$ ,  $p = .058$ ,  $d = 0.72$ , and between responses to Questions 3 and 4,  $t(29) = .42$ ,  $p = .676$ ,  $d = 0.15$ . Thus, participants in the *probing* condition did not increase the narrative elements contained in their responses as they progressed through the interview, speaking against the a potential learning effect. It is therefore unclear what caused this difference between conditions.

### ***Discussion***

The main aim of this study was to test the effects of two variables, *information* and *probing*, on participants' production of stories (H1 and H3) and the narrative elements contained in stories (H2 and H4). *Information* did not affect production of stories (rejecting H1), but *probing* had a significant positive effect (supporting H3). *Information* did not affect the narrative elements contained in stories (rejecting H2), but *probing* had a significant positive effect on the narrative elements contained in the stories (supporting H4).

Results support the idea that recruiters' probing behavior influences the way applicants respond to past-behavior questions during selection interviews. Recruiters may have a key role to play in improving the quality of applicants' responses, because their probes increase applicants' storytelling tendencies as well as the narrative elements those contain.

We found differences in storytelling depending on competency (RQ3). When participants were asked about adaptation and autonomy, they produced more stories than when asked about teamwork and organizing. This may reflect an order effect: adaptation and autonomy were the two first competencies asked about. Participants may have had trouble finding more than two examples to recount and may have been reluctant to use the same examples more than once. On the other hand, the differences may be due to the fact that the questions used to measure teamwork and organizing focus on more everyday situations, making it more difficult to find a specific situation to tell about (Bangerter et al., 2014). On the contrary, the questions asked to measure adaptation and autonomy focus more on exceptional situations.

Informing applicants did not help them produce more stories. This may be due to several reasons. First, the applicants may not have had enough time to prepare. Second, the example given may not have helped them to prepare sufficiently for the competencies that were measured. Third, the example of a question and the instruction to tell what they did in a specific situation may not have given them sufficiently explicit guidance for producing stories. In Study 3, we explored more explicit modes of providing information.

### **Study 3**

Study 3 further tested H1 as well as H1b. We again conducted an experiment featuring a simulated selection interview with participants playing the role of applicants. We manipulated the *information* variable in 3 conditions. The first was the same *uninformed* condition as in Study 2, where applicants received no information at all about upcoming questions. In the second condition, *informed about competencies*, applicants were informed about the four competencies questions would focus on. Informing applicants about the competencies measured allows them to focus their search for a relevant example rather than wasting

resources on guessing criteria (Klehe, König, Richter, Kleinmann, & Melchers, 2008; Kleinmann et al., 2011). Applicants may thus have more resources available to search their memory for a relevant episode for each specific competence. Finally, we developed a third *fully informed* condition, where applicants received information about the four competencies (as in the *informed about competencies* condition), a definition of a past-behavior question with an example and watched a video example of a fictional applicant narrating a story to answer a past-behavior question. Following the failure of the information manipulation in Study 2, this condition tested whether modeling an answer (Taylor, Russ-Eft, & Chan, 2005) would help applicants improve their storytelling performance. To test H1b (*information decreases production of pseudostories*), we coded the presence or absence of both stories and pseudostories in applicants' responses.

Study 3 also investigated RQ2 (*What are the cognitive and emotional processes associated with answering past-behavior questions?*). We adopted a method from Hall and Schmid Mast (2007): After participating in the simulated interview, applicants viewed the videorecording of how they answered questions during the interview. They were asked to write down all the thoughts and emotions they experienced during their performance.

Finally, Study 3 also investigated RQ3: We tested the effect of competency on the production of stories.

## **Methods**

### *Participants*

We recruited 83 students (41 women, *Age* = 22.02, *SDage* = 2.16) to participate. A majority (65) had previously held a student job and had previously experienced at least one selection interview (69) (*M* = 3.20 interviews, *SD* = 3.19). Participants were randomly assigned to one of the three conditions: *uninformed* condition (26 participants), *informed about competencies*

condition (27 participants) and *fully informed* condition (30 participants). Participants each received 15 Swiss francs for participating and three additional prizes of 50 Swiss francs were awarded for the three best performances during the interview (one per condition).

### *Procedure*

Procedure was similar to Study 2, with minor differences. Experimenters were the first author and participants in a seminar on personnel selection. They were trained to conduct the interview in a standardized manner following a strict protocol. Each experimenter recruited between three and five participants (excluding psychology students and personal contacts) and conducted the interview with them.

Competencies measured were communication, autonomy, organizing and adaptation. Participants had 10 minutes before the interview to prepare. In the *uninformed* condition, they received these instructions: *You have 10 minutes to prepare yourself. By the end of the preparation, the interview will begin. You will have to introduce yourself. Then, you will have to respond to job-related questions. Your goal is to be hired, be convincing and perform!* In the *informed about competencies* condition, they received the same instructions as in the *uninformed* condition as well as additional information about competencies: *Here are the four competencies you will be asked about: communication, autonomy, organization and adaptation.* In the *fully informed* condition, they received the same instructions as in the *informed about competencies* condition as well as additional information about past-behavior questions (*You will be asked past-behavior questions. This type of question refers to a situation, a behavior you have shown in the past. Here is an example of past-behavior question about the competency of persuasion: "Could you tell me about a situation where you managed to convince a person about a thing, an opinion or to do something she would never have done without your intervention, in your private, professional or student life?"*). The

*expected response is a story: you have to tell a specific and concrete episode which demonstrates that you master the competence. You can now play the example of a response)* and then watched an example video of someone producing a story to respond to a past-behavior question.

The interview began with an introductory question (*Could you present yourself and summarize your career in a few words?*) in order to increase the realism of the simulation. Then participants were asked four past-behavior questions. The experimenter did not use any probes, except in two specific situations: when participants did not say anything for several seconds (*Take your time to think*) or when they talked about a generic situation that did not involve storytelling (*Could you give me an example of a specific situation*). The whole interview was videotaped. After the interview, participants filled out a personality survey (NEO PI-R). Then they were invited to watch the videotape of their performance during the interview and write down any thought or feeling they remembered having experienced during the interview, as well as the time on the video. Participants were instructed not to report thoughts or feelings they experienced while watching the video (Hall & Schmid Mast, 2007). They then completed the Wonderlic Personnel Test and an ATIC measure. Finally, participants were debriefed and paid. Winners of the prizes were contacted after the study by e-mail. Interviews were transcribed as in Study 2.

### *Measures*

Interview experience, GMA, ATIC (Cohen's kappa = .72) and Personality (neuroticism alpha = .69, extraversion alpha = .78, openness alpha = .74, agreeableness alpha = .61 with one item removed and conscientiousness alpha = .76) measures were identical as in Study 2 (descriptives appear in Table 4).

*Stories.* Coding of stories was the same as in Study 2 (double-coding 10 % of the dataset, Cohen's kappa = .67).

*Pseudostories.* A pseudostory was defined as “a description of a generic situation or recurrent set of similar situations, without unity of time or action. It differs from a story in that it is a description of several events rather than of a unique event” (Bangerter et al., 2014, p. 6). We coded the presence or absence of pseudostories for the responses of each past-behavior questions (double-coding of 10 % of the dataset, Cohen's kappa = .67). We computed a total score of pseudostories (0-4) by participant over all four questions.

*Comments.* After the interview, participants viewed the video of their question-answering and noted their comments. All comments were segmented into single utterances (with one subject, verb and object). We content-analyzed each utterance, attributing it to one of 16 mutually exclusive categories (Cohen's kappa = .87 based on double-coding of 130 comments).

## ***Results***

[Table 4 near here] We found significant correlations between conscientiousness, interview experience and the production of stories, but no significant correlations between personality, interview experience and the production of pseudostories. We found no significant correlations between age, gender, ATIC and the production of stories or pseudostories (see Table 4). There were also some significant correlations between some of these variables and the comments participants made, which we will discuss below.

### *Hypothesis 1: Effects of information on storytelling*

To test *H1*, we computed two hierarchical regression models. In Model 1, given that the production of stories was significantly and positively correlated with conscientiousness and interview experience, we entered these variables as predictors of the proportion of responses featuring stories (Table 5). Both conscientiousness and interview experience emerged as

positive significant predictors and the model explained a significant proportion of variance. In Model 2, we coded the three information conditions into dummy variables (*informed about competencies* condition and *fully informed* condition) and used them as additional predictors of the proportion of responses featuring stories. These variables did not explain a significant additional proportion of variance of the production of stories (Table 5), meaning that information in general did not influence the participants' production of stories. Therefore, Hypothesis 1 was not supported. Nevertheless, the *informed about competencies* condition appeared as a significant positive predictor . [Table 5 near here]

#### *Hypothesis 1b: Effects of information on pseudostories*

To test H1b, we computed the same regression models as for H1 but predicting the proportion of responses featuring pseudostories. Results of Model 1 showed that conscientiousness and interview experience did not predict a significant proportion of variance of the production of pseudostories. Results of Model 2 showed that information explained a significant proportion of additional variance of the production of pseudostories (Table 6). Conscientiousness and both the *informed about competencies* condition and the *fully informed* condition emerged as significant negative predictors of the production of pseudostories. Therefore, Hypothesis 1b was supported. [Table 6 near here]

#### *Research Question 2: Cognitive and emotional processes*

We coded 825 comments at the utterance level *into* 16 categories (Table 7). Comments regarding finding an example and negative emotional states are the most frequent, making up 23% of comments and being mentioned by a majority of participants. [Table 7 near here]

We conducted an exploratory factor analysis (varimax rotation) on the categories to determine their factor structure. There were 6 factors with eigenvalue  $> 1$ , explaining 63.82 % of variance. Table 8 shows the factors and the descriptive labels we gave them. The first two

factors, *response production in general* and *finding an example*, explain 31% of variance.

Factor 4 (*negative emotions*) correlates with neuroticism, suggesting that this personality trait leads participants to experience more negative emotions when responding to past-behavior questions. Factor 5 (*positive emotions*) correlates with the ability to identify criteria (ATIC). This correlation is difficult to interpret, but suggests that participants able to identify criteria might possibly feel less stressed and more relieved because they are better able to identify the competencies and thus potentially better able to respond. [Table 8 near here]

### *Research Question 3: Storytelling by competency*

Using Bonferroni correction ( $p = .05/6 = .008$ ), we found significant differences in story production by competency. Organizing ( $M = .34, SD = .48$ ) was significantly different from communication ( $M = .54, SD = .50$ ),  $t(82) = 3.11, d = 0.68, p = .003$ , from autonomy ( $M = .61, SD = .49$ ),  $t(82) = 4.00, p < .000, d = 0.88$ , and from adaptation ( $M = .60, SD = .49$ ),  $t(82) = -3.86, p < .000, d = -0.85$ . Communication was not significantly different from autonomy,  $t(82) = -1.14, p = .26, d = -0.25$ , and from adaptation,  $t(82) = -.96, p = .34, d = -0.21$ .

Autonomy was not significantly different from adaptation,  $t(82) = .18, p = .86, d = 0.04$ .

Participants thus produced significantly less stories when asked about organizing.

### ***Discussion***

Regarding Hypothesis 1, information did not significantly influence the production of stories, because the overall regression model did not explain sufficient variance. Regarding Hypothesis 1b, information significantly decreased the production of pseudostories (both conditions were effective relative to the control condition). Thus, providing applicants with information about what is expected of them does not reliably increase story production, but it does decrease inappropriate responding (pseudostories). This suggests that providing

information increases awareness about what constitutes an (in)appropriate answer to a past-behavior question, without actually helping applicants to produce an appropriate answer.

Regarding Research Question 2, results suggest that the most frequent obstacle to applicants' production of stories is trouble immediately finding a relevant example to recount. This may perhaps play a more important role in applicants' responses than a lack of understanding about what is expected of them, because even in the *fully informed* condition, such comments were frequent. A good illustration is the following comment made by one applicant: "*Shit! All questions are going to be in this form. I'm going to have to tell stories. I anticipated more general questions like 'Why are you a good candidate' [...] It's really going to be just questions like that. I think I'm a good narrator. I just have to find anecdotes*". The fine-grained categories in Table 7 suggest that many aspects of responding are difficult for applicants, especially response quality (e.g., the level of detail to use, 38.6% of applicants) or discourse production (e.g., having trouble to find one's words, 49.4% of applicants). These results converge with the significant effect of the information-providing manipulations on the production of pseudostories (applicants are more aware that stories are appropriate and pseudostories are inappropriate) and the lack of significant effects of information on the production of stories (they need more help to actually find an example and put it into words).

The second most frequently mentioned category in Table 7 relates to negative emotional reactions. Answering past-behavior questions is associated with feelings of surprise, disappointment and stress. These emotions may be triggered by the unanticipated nature of past-behavior questions (especially in the *uninformed* condition) and interact with the abovementioned difficulties in finding examples to further inhibit applicants' responding. Thus, responding to past-behavior questions may be associated with interview anxiety (McCarthy & Goffin, 2004).

Applicants' comments also suggested that phenomena like faking might be related to difficulties in finding examples. Several applicants admitted making up examples as a result of unsuccessful searches of their memory (e.g., "*No more inspiration – I make something up*" or "*I can't find an example – I make up an example*"). These findings are particularly interesting because models of the determinants of faking in interviews typically do not specify the local interactional situations in which faking occurs (Levashina & Campion, 2006). Here, applicants' comments suggest that faking may constitute an ad hoc response to a self-presentational dilemma. In general, then, these exploratory data suggest several avenues for further research on processes behind responding to past-behavior questions.

Regarding Research Question 3, as in Study 2, there were differences regarding the four competencies when applicants were asked about communication, adaptation and autonomy, they produced more stories than when asked about organizing. Similar results were found in Study 2 and in previous research (Bangerter et al., 2014). Since the order in which the competencies were assessed is not the same as in Study 2, it seems likely that some competencies are more difficult to translate into stories than others, especially routine competencies like organizing.

Finally, interview experience and conscientiousness were both correlated with story production. Applicants with more interview experience may have been exposed to past-behavior questions, or to recruiters' questions asking about examples to illustrate particular claims. These may have made them more aware of the expected answers or helped them find examples. That more conscientious applicants produce more stories may suggest a motivational effect. Conscientious applicants may have been more motivated to conform to the expectations, and thus may have invested more effort in finding an example to narrate.

## **General Discussion**

The rise of behavioral interviewing will make storytelling skills more important in the future. But initial research on applicants' responses to past-behavior questions (Bangerter et al., 2014) has suggested that many applicants may have difficulties producing stories. In the current research, we first conducted a field study to ascertain the efficacy of past-behavior questions in eliciting stories. Then, we conducted two experiments manipulating the effects of information and probing on production of stories and pseudostories and we explored applicants' experiences in responding to past-behavior questions, as well as whether storytelling was affected by the competency measured.

Our research has produced several important results. First, Study 1 suggests that simply asking past-behavior questions is not sufficient to elicit an appropriate response, even in a real, high-stakes selection situation. Indeed, fully 50% of the time, applicants failed to respond appropriately. We note that this rate is similar to the rate of story production in the experiments (56% in Study 2 and 53% in Study 3), suggesting that the experiments do not really lack ecological validity in this respect.

Results from Study 2 showed that brief information about the type of questions and how to respond did not significantly increase production of stories or the amount of narrative diversity of stories. In Study 3, providing information about the competencies measured and providing a concrete example of how to respond did not significantly increase story production. However, both kinds of information significantly reduced the production of pseudostories. This pattern of results clearly shows that even rather explicit and concrete instructions do not help applicants produce more stories, even though they may reduce inappropriate responses like pseudostories. This converges with findings from applicants' reports of the cognitions and emotions they experienced while answering questions in Study 3: The difficulties applicants face seem to be recalling a suitable example and putting it into

words, or recalling enough examples to answer multiple past-behavior questions, rather than being unaware that stories are expected, or hesitating to take the floor for an extended turn.

The probing manipulation in Study 2 was successful in inducing applicants to produce more stories and to increase the narrative diversity of stories. This suggests that recruiters may have an important role to play in eliciting relevant applicant responses when using past-behavior questions, thus increasing information accuracy and completeness (Levashina et al., 2014). These findings further support the idea of storytelling as a collaborative process (Bavelas et al., 2000) in the specific context of selection interviews.

Finally, we consistently found that story production varied as a function of the competency measured, suggesting that some competencies (that potentially reflect more routine, everyday behavior) may be more difficult to translate into a story.

### *Theoretical implications*

Our findings speak to at least two theoretical issues. First, they respond to calls for more research on probing in behavioral interviews (De Kock et al., 2018; Levashina et al., 2014). Our findings may seem to contradict research on interview structure, which advocates limiting probing to reduce bias (Campion et al., 1997; Dipboye, Wooten, & Halverson, 2004; Huffcutt & Arthur, 1994). However, the effects of increasing structure on validity are subject to a ceiling ((Huffcutt & Arthur, 1994). In a four-level scale of structure, levels 3 and 4 do not differ in terms of validity (respectively .56 and .57). And it is worth noting that “level 3 was characterized by prespecification of the questions, although applicants were not asked the exact same questions because of the use of different interview forms or allowing interviewers to choose among alternative questions and to probe responses to the specified questions” (Huffcutt & Arthur, 1994, p. 186). Thus, probing may be considered part of the leeway recruiters may retain during the interview without endangering validity. Furthermore, in our

studies, we used planned probing, a specific type of probing that has been hypothesized to “help applicants who might be shy or speak in succinct ways to clarify their answers and provide more detailed job-related information” or “help applicants recall and identify the most relevant experiences they need to describe in order to best present their true job-related credentials” (Levashina et al., 2014, p. 272). Although this has not been tested yet, probing and especially planned probing might even increase validity and lead to more positive users’ reactions (Levashina et al., 2014). Probing also raises questions regarding faking. On the one hand, probing may increase faking, especially in response to past-behavior questions with inexperienced applicants. But probing may also reduce applicants’ opportunities to fake, because “with no follow-up, respondents might think that there is no way that the interviewer can detect faking” (Levashina & Campion, 2006, p. 309). Indeed, interviewers may use probes to point out incomplete or inconsistent information and potentially alert applicant about their abilities to detect lying. Overall, then, our findings bring a much-needed data point to the neglected study of probing in behavioral interviews, showing that probing can increase the completeness or relevance of applicants’ responses, by encouraging the production of stories and enhancing their content.

Beyond the specific context of behavioral interviewing, our findings inform the general problem of elicitation of trait-expressive behavior in personnel selection. According to trait activation theory, the expression of trait-relevant behaviors is moderated by the situation. Lievens et al. (2015) distinguish between general and specific levels of eliciting trait-relevant behaviors in selection situations, with a focus on the case of assessment centers. At a general level, the way an assessment center exercise is designed (including its instructions) can serve as an elicitor. At a specific level, elicitors can be embedded in the situation, for example when role-players in an assessment center are instructed to display

certain emotional reactions. Schollaert and Lievens (2011) showed that instructing actors to use prompts leads to better measurement of some dimensions without any discernible negative impact. These findings are analogous to ours: Providing information about expected responses (a general-level elicitor) was less effective in eliciting stories than allowing recruiters to probe (a specific-level elicitor). Just as “good raters” (De Kock et al., 2018) actively contribute to expression of relevant cues through their interactions with applicants, recruiters may enhance their opportunities to construct better measurements via probing.

### ***Limitations***

Our research has some limitations. First, Studies 2 and 3 were experimental simulations of selection interviews, with nothing major at stake for participants except the additional prizes for the best performances. Despite the fact that previous experimental studies reported that participants were highly motivated and treated the simulated interview like a real interview (see for example Swider, Barrick, Harris, & Stoverink, 2011), the generalizability of our findings to real interviews remains unknown. However, the rate of storytelling from the field study (Study 1) was very similar, thus suggesting that motivational differences may not have impacted the phenomena under study. Second, Study 2 and 3 participants were all students with little professional experience. Participants with more experience may have had more anecdotes to recount and may therefore have reacted differently to the manipulations. Third, the sample size of the studies was low, which may have decreased the chances of finding effects of our manipulations (especially for the effect of information). Fourth, we did not counterbalance the order in which competencies were measured. Therefore, the findings that some competencies are more amenable to the production of narrative responses must be treated as tentative (however, they do corroborate previous research; Bangerter et al., 2014).

### ***Practical implications***

Our findings have several straightforward practical implications. First, recruiters cannot assume that all applicants will produce optimal responses to past-behavior questions without some form of encouragement. Nor can they assume that brief instructions about how to respond will be effective. Recruiters may be interested in the potential of probing to enhance storytelling in applicants. However, the planned probes used in the current studies are different from the more freewheeling interactional style many recruiters prefer (Lievens & De Paepe, 2004). Training programs for recruiters should thus emphasize planned probing in the context of a structured interview procedure. Finally, because behavioral interviews often measure multiple competencies, recruiters should be aware that not all competencies are equally easy to translate into a story, and that applicants may have difficulty finding multiple examples to narrate. Our findings also have implications for preparing applicants for behavioral interviews. Given the negligible impact of information on storytelling production, it may be necessary to engage applicants in more in-depth coaching interventions (Ralston et al., 2003).

### ***Future research***

Future research might explore the difficulties of producing stories by testing whether giving applicants more time to prepare for the interview increases the production of narrative responses by helping them find an example or choose the best example among those they may have available. This possibility is supported by recent findings that interviewees who have more time to think about what to recount end up talking about different experiences that may better reflect their maximal performance level (Huffcutt et al., 2016).

Given the lack of impact of information provision on storytelling, the efficacy of more intensive, coaching-based interventions to increase storytelling might be evaluated. These would entail inviting applicants to think about their particular competencies as well as about

occasions when they demonstrated mastery of those competencies, before reflecting on how to translate those occasions into informative stories (Ralston et al., 2003).

More generally, we advocate for more research on the factors affecting narrative responding to past-behavior questions. One line of research might seek to specify the criteria for effective storytelling in the selection interview. While criteria for storytelling quality have been formulated (Ralston et al., 2003), there is no theory empirically testing the effectiveness of these criteria (e.g., by linking them to antecedents and outcomes). This is important because storytelling ability has been identified as an important facet of certain personal abilities like leadership (Sharma & Grant, 2011). However, storytelling ability may be orthogonal to the competencies specific past-behavior questions are designed to measure. In order to guarantee construct validity, it seems important to be able to distinguish what facets of a response reflect good storytelling ability versus real mastery of a competency.

Finally, more research on the effects of probing is necessary (De Kock et al., 2018; Levashina et al., 2014). This need is particularly urgent for the effects of probing on faking, because existing results are inconsistent. But the impact of probing also needs to be evaluated in terms of interrater reliability and predictive validity.

### ***Conclusions***

The behavioral interview is a valuable selection method. Research is accumulating that demonstrates its psychometric properties like validity, reliability, and robustness against faking. But much remains to be discovered regarding its properties as a social interaction between recruiters and applicants. The present research demonstrated the difficulties involved in producing stories in response to past-behavior questions, as well as suggesting ways recruiters may take on a more active role in enabling applicants to produce representative, meaningful stories. We hope that our studies stimulate further research on this important topic.

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## Tables

**Table 1.** Means (*M*), standard deviations (*SD*) and correlations for main study variables (Study 2)

Variable	<i>M</i>	<i>SD</i>	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18
1 Gender	0.42	0.50	-																	
2 Age	24.20	3.29	.04	-																
3 Interview experience	0.93	0.25	.23	.10	-															
4 Professional experience	0.92	0.28	.26*	.19	.40**	-														
5 Openness	4.27	0.60	.00	.17	-.01	.22	-													
6 Conscientiousness	4.51	0.98	.31*	.03	-.03	.34**	.46**	-												
7 Extraversion	4.17	0.78	.29*	-.09	-.06	-.01	.29*	.19	-											
8 Agreeableness	24.25	3.05	-.04	-.07	-.24	-.08	.29*	.33*	-.04	-										
9 Neuroticism	2.71	1.07	.10	.19	-.06	-.03	-.03	-.06	.11	.12	-									
10 GMA	22.80	5.65	-.04	.21	-.03	-.09	-.11	-.41**	.08	.00	.20	-								
11 ATIC	2.37	1.33	-.03	.05	-.08	-.33*	-.02	-.14	.00	.05	.01	.30*	-							
12 Information condition	0.50	0.50	.03	.20	.13	.06	-.14	-.21	-.09	-.31*	.20	.21	.23	-						
13 Probing condition	0.50	0.50	-.10	.05	.13	-.06	.03	.00	.12	.11	.12	.19	-.05	.00	-					
14 Stories (before probing)	2.22	1.19	-.04	-.24	.22	.06	.11	-.16	-.01	-.05	.08	.14	.22	.16	.21	-				
15 Stories (after probing)	3.38	0.94	-.40*	-.50**	-.13	-.11	-.11	-.13	-.20	.32	.15	-.09	.18	-.25	n/a	.57**	-			
16 Increase in stories	0.97	0.94	-.20	-.09	-.21	-.14	.09	.16	-.13	.27	.27	-.07	.09	-.26	n/a	-.62**	.26	-		
17 Narrative elements (before)	3.25	2.97	.01	-.07	.20	-.04	.02	-.23	.09	-.12	.07	.26*	.21	.11	.52**	.63**	.40*	-.53**	-	
18 Narrative elements (after)	3.33	3.88	-.15	-.13	.06	-.15	-.08	-.07	.03	.17	.16	.20	.02	-.02	n/a	.32*	.71**	.18	.60**	-
19 Difference narrative elements	1.98	2.64	-.15	-.11	-.03	-.03	-.08	.04	.00	.21	.22	.15	-.04	-.07	n/a	.14	.54**	.56**	.26*	.84**

*Note.* GMA: General mental ability. ATIC: Ability to identify criteria. Information condition: 0 = uninformed, 1 = informed. Probing condition: 0 = no probing, 1 = probing. n/a: no value because values are only defined in the probing condition.

\*  $p < .05$ ; \*\*  $p < .01$ ; \*\*\*  $p < .001$

**Table 2.** Mean proportions of production of stories and increase by competency (Study 2)

Variable	<i>Before probing (All, N=60)</i>	<i>Before probing (Probing condition, N=29)</i>	<i>After probing (Probing condition, N=29)</i>	<i>Increase (Probing condition, N=29)</i>
Adaptation	.63	.66	.86	.21*
Autonomy	.72	.86	.97	.10
Teamwork	.47	.48	.90	.41***
Organizing	.40	.48	.66	.24**
Overall	.56	.62	.85	.23***

*Note.* \*  $p < .05$ ; \*\*  $p < .01$ ; \*\*\*  $p < .001$

**Table 3.** Proportion of narrative elements and difference by element (Study 2)

Variable	<i>Before probing (All, N=60)</i>	<i>Before probing (Probing condition, N=29)</i>	<i>After probing (Probing condition, N=29)</i>	<i>Difference (Probing condition, N=29)</i>
Situation	.35	.55	.36	-.20***
Task/Action	.31	.43	.72	.36***
Results	.15	.22	.59	.36***

*Note.* \*  $p < .05$ ; \*\*  $p < .01$ ; \*\*\*  $p < .001$

**Table 4.** Means (*M*), standard deviations (*SD*) and correlations for main study variables (Study 3)

Variable	<i>M</i>	<i>SD</i>	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18
1 Condition	1.04	0.83																		
2 Gender	0.49	0.50	.07																	
3 Age	22.02	2.16	.05	.01																
4 Interview experience	3.20	3.19	-.09	-.01	.26*															
5 ATIC	2.34	1.08	.04	.00	-.16	-.01														
6 Extraversion	4.17	0.81	.14	.20	-.10	.03	.13													
7 Agreeableness	4.66	0.63	-.04	.08	.08	-.04	-.07	-.25*												
8 Conscientiousness	4.77	0.72	-.11	.26*	-.19	-.05	.07	-.05	.39**											
9 Neuroticism	2.75	0.65	.09	.07	.04	-.13	-.12	-.01	-.11	-.32**										
10 Openness	4.02	0.78	-.01	.01	.12	.21	-.12	.04	.01	-.10	-.10									
11 GMA	24.00	5.39	-.03	-.20	-.16	-.04	.20	.01	.05	-.08	-.10	.01								
12 Stories	2.10	1.28	.11	.08	.10	.27*	-.04	.09	.14	.27*	-.19	.19	-.07							
13 Pseudostories	2.18	1.27	-.24*	-.12	-.07	-.15	.11	-.09	-.03	-.15	.05	-.09	.14	-.80**						
14 Factor 1: Resp. prod.	0.00	1.00	-.13	.06	.03	.00	.05	.00	-.05	-.01	.09	.01	.00	-.16	.22					
15 Factor 2: Find. ex.	0.00	1.00	.10	.16	-.01	-.11	.11	.18	-.15	.18	-.10	-.17	.08	.05	.11	.00				
16 Factor 3: Non-verb.	0.00	1.00	-.08	.04	.21	.09	.13	.07	.12	.07	-.16	.10	.13	.02	.05	.00	.00			
17 Factor 4: Neg. emot.	0.00	1.00	.12	.12	.07	-.03	.06	-.02	.02	.02	.26*	.05	.10	-.05	-.06	.00	.00	.00		
18 Factor 5: Pos. emot.	0.00	1.00	-.08	-.20	.07	.04	.25*	-.11	-.08	-.05	.07	-.02	.20	-.04	.06	.00	.00	.00	.00	
19 Factor 6: Faking	0.00	1.00	.08	-.06	.10	.06	.17	-.19	.10	.08	-.12	.07	.05	.18	-.09	.00	.00	.00	.00	.00

*Note.* Condition: 0 = uninformed, 1 = informed about competencies, 2 = fully informed. Gender: 0 = Men, 1 = Women. Probing condition: 0 = no probing, 1 = probing. ATIC: Ability to identify criteria. GMA: General mental ability. Factor 1: Resp. prod.: response production in general. Factor 2: Find. ex.: Finding an example, trouble finding a relevant example. Factor 3: Non-verb.: Non-verbal behavior and time management. Factor 4: Neg. emot.: Negative emotional state, fear of finding no response. Factor 5: Pos. emot.: Positive emotional state, no problem producing a response.

\*  $p < .05$ ; \*\*  $p < .01$ ; \*\*\*  $p < .001$

**Table 5.** Summary of hierarchical multiple regression predicting stories (Study 3)

<i>Variable</i>	Model 1		Model 2	
	<i>B</i>	<i>SE B</i>	<i>B</i>	<i>SE B</i>
Intercept	-.73	.91	-1.53	.96
Interview experience	.12**	.04	.12**	.04
Conscientiousness	.52**	.19	.60**	.19
Informed about competencies			.69*	.33
Fully informed			.54	.32
Adj. R <sup>2</sup>		.13		.16
<i>F</i> for R <sup>2</sup> change		7.32**		2.45

*Note.*  $N = 83$ . \*  $p < .05$ ; \*\*  $p < .01$ ; \*\*\*  $p < .001$

**Table 6.** Summary of hierarchical multiple regression predicting pseudostories (Study 3)

<i>Variable</i>	Model 1		Model 2	
	<i>B</i>	<i>SE B</i>	<i>B</i>	<i>SE B</i>
Intercept	3.69***	.95	4.85***	.98
Interview experience	-.06	.04	-.07	.04
Conscientiousness	-.28	.19	-.39*	.19
Informed about competencies			-.95**	.34
Fully informed			-.85*	.32
Adj. R <sup>2</sup>		.02		.11
<i>F</i> for R <sup>2</sup> change		1.92		4.96**

*Note.*  $N = 83$ . \*  $p < .05$ ; \*\*  $p < .01$ ; \*\*\*  $p < .001$

**Table 7.** Categories of comments (Study 3)

Category	Definition / Content of the comment	Frequency	Mention (%)
1 Finding an example	Trouble experienced in finding an example, hesitation between two examples (the word "example" should be explicitly mentioned)	98	60.2
2 Negative emotional state	Negative emotional state, for example stress, hesitation, disappointment, uncertainty, surprise, apprehension	95	56.6
3 Other	Irrelevant comments, for example <i>"It reminds me of good memories"</i>	76	47
4 Positive emotional state	Positive emotional state, for example joy, relief, satisfaction	75	48.2
5 Response quality	Reflection on the quality of the response, the vocabulary used, the level of detail	73	38.6
6 Discourse production	Trouble finding words, how to speak	69	49.4
7 Irrelevance of the example	Example judged too general, irrelevant, or narrated just to say something (the word "example" should be explicitly mentioned)	60	39.8
8 Finding no response	Fear of not finding a response to the question asked, having no idea of response, not knowing what to respond	43	32.5
9 Questions asked	Reflection on questions asked, on job requirements or on information previously read in the job advertisement	41	30.1
10 Relevance of the example	Reflection on the relevance of the example told, judged as a good one, easily found (the word "example" should be explicitly mentioned)	38	34.9
11 Example used repeatedly	Reflection on the repeated use of the same example for different questions, need to find another example than the one already told	34	26.5
12 Type of question asked	Reflection on the type of question that was coming, apprehension about the question type	34	27.7
13 Faking	Inventing examples or embellishing the situation	29	24.1
14 Non-verbal behavior	Participant's own non-verbal behavior	26	15.7
15 Temporization	Temporizing by asking a question, by repeating the question, by giving useless information or by saying <i>"uh"</i>	19	16.9
16 Turn management	Worries about turn-taking, the pause before the response or the duration of the response	15	18.1

Note.  $N = 825$ . Mention (%): % of participants mentioning the category at least once.

**Table 8.** Categories (after factor analysis) (Study 3)

Factor	Variance (%)	Description	Examples
1	20.31%	Response production in general	<i>I don't know if I really answered the question / I'm not sure I understand the question and the answer to tell</i>
2	10.70%	Finding an example, trouble finding a relevant example	<i>I tell myself there it is she wants a specific example but I don't have one / Difficulties of finding a specific example to tell</i>
3	9.56%	Non-verbal behavior and time management	<i>I move my shoulders nonstop, a sign of tension I should avoid / I move too much / I needed time to think a little bit</i>
4	8.38%	Negative emotional state, fear of finding no response	<i>I apprehend the question / I don't know what to say / Feeling of insecurity / I'm completely lost</i>
5	7.95%	Positive emotional state, no problem producing a response	<i>I felt good and confident / It makes me feel proud in a sense I felt no hesitation</i>
6	6.91%	Faking	<i>Question to which I respond by improvising / I embellish the situation / I totally make up something</i>
63.81%			

## APPENDIX III

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Bangerter, A., Brosy, J., & Sieber, J. (submitted). Laughter in the selection interview: Impression management or honest signal?

(Previous title: Laughter in the selection interview and impact on interview outcomes)

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## **Laughter in the Selection Interview: Impression Management or Honest Signal?**

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Keywords: selection interview, laughter, shared laughter, hiring recommendations

**Abstract**

Laughter has been rarely investigated in the selection interview, but its involuntary and prosocial nature makes it a potential candidate for an honest signal of affiliation or a form of ingratiation. We investigated the distribution of laughter among participants, its relation to interview transitions and to applicant impression management and recruiter evaluations in a sample of real selection interviews. Applicants laughed more often than recruiters, and women laughed more often than men. Applicants were more likely to laugh close to transitions between phases of the interview. Applicant participation in shared laughter episodes was unrelated to self-reported impression management tactics (both honest and deceptive) and to recruiter perceptions of applicant self-promotion, but was related to recruiter perceptions of applicant transparency/honesty and to hiring recommendations. Unilateral applicant laughter was negatively related to recruiter perceptions of applicant self-promotion, honesty/transparency and hiring recommendations. Results suggest that applicant participation in shared laughter episodes may constitute an honest (difficult-to-fake) signal of affiliation.

Keywords: selection interview, laughter, shared laughter, hiring recommendations

## **Introduction**

The selection interview can be seen as a social interaction between applicants and recruiters, who may pursue goals that are at least partly misaligned (Bangerter, Roulin, & König, 2012). Applicants typically want to stand out from other applicants to obtain a job offer, and recruiters typically want to identify applicants' qualities and infer their future performance. To achieve their respective goals, applicants and recruiters are highly motivated to provide information that is to their advantage and will both deploy impression management (IM) tactics (Roulin, Bangerter, & Levashina, 2014; Stevens & Kristof, 1995; Wilhelmy, Kleinmann, König, Melchers, & Truxillo, 2016). Accordingly, interpersonal processes constitute a central component of the interview and IM tactics have increasingly been investigated. Measurement of IM typically relies on self-reports, and applicants' and recruiters' perceptions often do not converge (Roulin et al., 2014). Moreover, past research has tended to focus heavily on applicant IM (Wilhelmy et al., 2016) and on verbal tactics like self-promotion or ingratiation (Higgins & Judge, 2004; Stevens & Kristof, 1995).

In this article, we explore a nonverbal social process in the selection interview that has received very little attention: laughter. Previous research suggests that laughter has some interesting interactional characteristics and plays an important role in regulating social interactions. First, it constitutes an informational cue that may help signal intentions in ambiguous situations (Glenn, 1989, 2003; Glenn & Holt, 2013; Keltner & Gross, 1999; Keltner, Haidt, & Shiota, 2006; Provine, 2016; Van Kleef, 2010). Second, it reflects role asymmetries in institutional interactions (Glenn, 2010; Haakana, 2001, 2002; Tullar, 1989; West, 1984), thus providing guidelines to participants to coordinate behavior. Third, it is often associated with affection, affiliation, and intimacy (Glenn, 2003; Scott, Lavan, Chen, & McGettigan, 2014) and thus helps build rapport (Grønnerød, 2004; Scott et al., 2014). Finally, as any emotional expression (Keltner & Gross, 1999; Van Kleef, 2010), laughter may also

serve strategic purposes, to project identities and manage impressions and therefore potentially affect interview outcomes. We investigated the distribution of laughter among interview participants, its use in coordinating progress in the interview and how it is related to self-reported applicant IM and recruiter perceptions of applicants in a sample of real selection interviews. Our findings suggest several further avenues for research on laughter in the selection interview. Laughter can be considered an honest signal of positive affect and rapport that can be exhibited by both recruiters and applicants. We start by reviewing research on IM and selection interview signalling, before describing previous findings on laughter in social interaction. We then apply these findings to the context of the selection interview before describing our study.

### **Honest signalling in the selection process and impression management in the interview**

In selection, applicants and organization assess each other to determine how competent the other party is and how committed they are to an employment relationship (Cuddy, Glick, & Beninger, 2011). This process takes place via the exchange of signals throughout the selection process (Bangerter et al., 2012). Because organizations' and applicants' goals are not perfectly aligned, both parties have an incentive to provide strategic information, i.e., to potentially manipulate the impressions the other party may build of them. In such situations, according to signaling theory, the only way to exchange meaningful information is by imposing a cost on the sender of the information, such that only qualified individuals can bear the cost of transmitting the signal (Zahavi & Zahavi, 1999). Such *honest signals* (i.e., revealing of a true quality of the sender) can be of two kinds: costly or difficult to fake. Costly signals are honest because they require investing resources, such that less-qualified parties are less able to bear the costs of the investment. Examples might be an organization's reputation or an applicant holding a degree from a prestigious university (Spence, 1973). Difficult-to-fake signals are honest because they are only partly under the control of the sender. An

example might be a cognitive aptitude test, where less intelligent individuals will find it difficult to obtain a high score, because the cognitive processes underlying intelligent performance are difficult to improve by coaching.

In the selection interview, signal exchange occurs via verbal and nonverbal IM on the part of both recruiters and applicants. Applicant verbal IM has been extensively studied, and tactics vary along two main dimensions: Assertive vs. defensive (Bolino, Kacmar, Turnley, & Gilstrap, 2008) and honest vs. deceptive (Leary & Kowalski, 1990; Levashina & Campion, 2006). Assertive IM involves proactively building images of a good applicant, either via self-promotion (e.g., describing one's achievements) or ingratiation (e.g., agreeing with the recruiter or expressing admiration of the organization). Defensive IM involves repairing negative images (e.g., explaining the reason for being laid off from a past job). Applicant IM can also be nonverbal, e.g., smiling, maintaining eye contact or shaking hands. Nonverbal behavior in the selection can constitute a limiting case of strategic communication, because some nonverbal behaviors are less controllable than verbal behavior. Recruiter IM has been little studied, but a recent study (Wilhelmy, Kleinmann, Melchers, & Götz, 2017) suggested recruiters try to build images of attractiveness and authenticity, and try to signal both closeness (rapport, trustworthiness) and professional distance in the interview interaction. That study also documented the wide range of behaviors (verbal, paraverbal, nonverbal, use of artefacts and administrative acts) by which recruiters pursue these goals.

IM research has thus largely focused on applicant behaviors that are under applicants' conscious control. Because deceptive IM (or faking) is both common (Levashina & Campion, 2006, 2007) and difficult to detect by recruiters (Roulin, Bangerter, & Levashina, 2015), recruiters may be potentially subject to manipulation by applicants. Indeed, applicant IM positively affects recruiter evaluations, and recruiters' perceptions of applicant IM do not converge well with applicants' self-reports (Roulin et al., 2014), suggesting that manipulation

attempts may often be successful. Thus, often, verbal IM can potentially be described as “cheap talk” (Farrell & Rabin, 1996) that does not convey reliable information. The field of IM research might do well to focus investigation on a wider range of IM behaviors, and especially those that may potentially constitute honest signals, and that may be produced by both recruiters and applicants (Wilhelmy et al., 2016). Such signals could be found among nonverbal behavior, which is often less controlled and more spontaneous than verbal behavior. Nonverbal applicant behaviors in the interview are correlated with applicant performance, like smiling, gaze, hand movements and body orientation (DeGroot & Motowidlo, 1999), and their level of control may vary, especially if applicants are focused on producing verbal discourse. Several nonverbal interview behaviors may potentially constitute honest signals of trustworthiness, likability and credibility. Of these, perhaps the least well-understood is laughter.

### **Laughter in social interaction**

Laughter is by nature a social phenomenon. It is ubiquitous in human interaction. People laugh on average 18 times per day, and in around 95% of conversations (Martin & Kuiper, 1999; Provine & Fischer, 1989), most of the time in presence of other people and when they are laughing (Glenn, 2003). The ubiquity of laughter masks the orderly nature of the phenomenon, which reflects both status differences, individual differences, and specific moments in the interaction.

The distribution of laughter among individuals reflects status differences (Oveis, Spectre, Smith, Liu, & Keltner, 2016) or role asymmetries in institutional interactions (Glenn, 2010; Haakana, 2001, 2002; Tullar, 1989; West, 1984). Institutional representatives tend to laugh less often than laypersons. For example, in medical encounters patients laugh more than physicians and their invitations to laugh are often declined (West, 1984) and applicants laugh more than recruiters in selection interviews (Adelswärd, 1989; Glenn, 2010). Laughter is also

related to gender (Glenn & Holt, 2013). Men and women use laughter differently. Men use jokes as invitations to laugh (Jefferson, 1979), especially with a female partners, thereby offering opportunities to laugh without laughing. Women tend to extend invitations to laugh by laughing first. Additionally, women tend to use laughter to regulate the interactive climate and are more inclined to join in shared laughter than men (Adelswärd, 1989).

The distribution of laughter over an interaction is not random either. Laughter gives a hint of how participants progress through the interaction. It may be used to solve conversational dilemmas, such as the introduction of a new topic (Holt, 2010). It may also constitute a sign of consensus among participants and thus a signal to move on to a subsequent topic, activity, or phase of an interaction. Indeed, laughter tends to co-occur with topic changes (Bonin, Campbell, & Vogel, 2012; Holt, 2010).

Finally, laughter is a sign of affiliation, affection or intimacy and is thus associated with positive outcomes regarding the quality of the interaction (Glenn, 2003; Scott et al., 2014). But these positive effects on relationships depend on whether laughter is shared or not. Unilateral laughter is often used for self-regulation. For instance, when people talk about their troubles (Jefferson, 1984) or engage in self-deprecation (Glenn, 2003; Glenn & Holt, 2013), speakers may laugh at their own problems or at themselves. In such situations, reciprocal laughter from recipients might suggest that a negative topic is not taken seriously. For instance, in medical interactions, patients may laugh while complaining about symptoms, but physicians typically do not join in, thus signalling they are taking their patients' health issues seriously (Haakana, 2001, 2002). Unilateral laughter may also result from failed invitations. Speakers can strategically place laughter to produce laugh invitations (Jefferson, 1979) and these can be accepted or declined by invitees, the latter by refraining from joining in the speaker's laughter (Jefferson, 1979; West, 1984). Failed invitations constitute

misunderstandings or misalignment among participants about how to construe a potentially laughable event.

On the other hand, shared laughter contributes to the construction of affiliation between conversational participants (O'Donnell-Trujillo & Adams, 1983; Schenkein, 1972). Shared laughter is often the result of a successful laugh invitation and thus constitutes a cooperative activity within the interaction, i.e., a friendly “time out”. It has a causal impact on positive emotion, perceived similarity, and liking (Kurtz & Algoe, 2017). As such, shared laughter may be especially impactful for interactions between participants with zero prior acquaintance, because it may reduce uncertainty about participants’ reciprocal feelings or intentions or reduce status or gender differences (Glenn, 2010; West, 1984). In such situations, trust may be lower, and thus honest (difficult-to-fake) signals may play an especially important role. Like many emotional expressions (Frank, 1988), laughter has several characteristics of such signals. Indeed, the production of laughter is under relatively weak voluntary control (Provine, 2016), making it more difficult to strategically manipulate. Moreover, people are able to distinguish spontaneous from voluntary laughter from its acoustic pattern (Bryant et al., 2018), thus suggesting that strategically manipulated laughter may potentially be detected and backfire. These characteristics may explain why shared laughter impacts feelings of affiliation.

### **Laughter in the selection interview: Impression management and honest signalling of affiliation**

The selection interview is an institutional interaction (Drew & Heritage, 1992), which prescribes rules of normative conduct. One way the selection interview provides norms for conduct is through the interview script (Tullar, 1989), which specifies the complementary roles of recruiters and applicants and thus appropriate and less appropriate behaviors to adopt.

The scripted character of the selection interview thus serves to reduce uncertainty for both applicants and recruiters.

For applicants, perhaps the most well-documented scripted behavior is to engage in self-promotion, which increases attributions of competence (Bozeman & Kacmar, 1997; Stevens & Kristof, 1995). However, excessive self-promotion may also lead to attributions of low warmth (e.g., arrogance). Warmth can be projected by engaging in ingratiation tactics, which are “designed to evoke interpersonal attraction or liking” (Stevens & Kristof, 1995, pp. 588-589). To this end, verbal ingratiation tactics typically involve flattery or expressing agreement with the recruiter’s opinions. But they carry the risk of backfiring (Bozeman & Kacmar, 1997) and thus being perceived as insincere. Because laughter is difficult to fake, it may serve as a more subtle ingratiation technique. For instance, by responding positively to recruiters’ laugh invitations (and thus co-creating shared laughter), applicants can display affiliation and similarity while at the same time demonstrating their knowledge and acceptance of the interview script (Glenn, 2010), and more generally their mastery of institutional contexts. Unlike shared laughter, unilateral laughter may be associated with negative outcomes for applicants. The sensitive conversational topics it is often associated with (Glenn, 2003; Jefferson, 1984) may not be appropriate in the selection interview. Moreover, applicants’ unilateral laughter may be interpreted as a sign of nervousness, triggering inferences of immaturity (Glenn, 2013), or reflect the result of a failed laugh invitation (Jefferson, 1979). All of these situations may potentially lead to negative evaluations on the part of recruiters.

According to the interview script, recruiters are expected to manage the agenda, moving through the different interview phases (Wiersma, 2016) in a timely and professional manner. At the same time, recruiters also pursue goals of impression management, attempting to project attractiveness and authenticity, and to signal both closeness and professional

distance (Wilhelmy et al., 2017). The institutional nature of the selection interview and the high stakes involved makes it a serious interaction. However, this does not preclude nonserious moments: “Sequences of interaction involving laughter and nonserious turns are recurrently used to accomplish serious tasks. Seriousness and nonseriousness are inextricably entwined in interaction” (Holt, 2013, pp. 88-89). One way nonserious moments can be constructed is by engaging in shared laughter. Recruiters may use laughter as an impression management tactic to create a casual atmosphere. Nonserious moments can be ended when participants reorient themselves to the interview agenda. Thus, by using laughter in their management of the interview agenda, recruiters can potentially manage both goals of appearing professional (and thus projecting competence) and appearing friendly (and thus projecting warmth).

### **This study**

We investigated the role laughter plays in the selection interview. Such an investigation represents a potentially important contribution to IM research because laughter is an important social behaviour that may occur frequently in interviews but about which very little is known. Investigating laughter may contribute to expand understanding of nonverbal IM phenomena, especially due to its shared and partly involuntary nature. Indeed, that laughter is only partly controlled, and thus difficult to fake, makes it a potential candidate for an honest signal (Bangerter et al., 2012). We investigated four research questions.

Research Question 1 is *who produces laughter in the selection interview?* The first factor influencing laughter distribution we investigated was role. Individual differences in distribution and organization of laughter emerge from role asymmetries in institutional interactions (Glenn, 2010; Haakana, 2001, 2002; Tullar, 1989; West, 1984). Participants in selection interviews have asymmetrical roles. Recruiters are official representatives of an organization. They lead the interview and manage constraints of time and agenda (Glenn,

2010; Tullar, 1989). We thus expected to replicate previous findings on institutional interactions, with applicants producing more laughter than recruiters. For these reasons, recruiters have more license than applicants to decide when laughter is appropriate and when it is not. We thus also expected recruiters to initiate laughter sequences more often than applicants. The second factor we investigated was gender. Women tend to use laughter to regulate interactions and are more prone to share laughter than men (Adelswärd, 1989). We thus expected women to laugh more than men.

Research Question 2 is *when is laughter produced in the selection interview?* The selection interview is an organized activity that transitions through several main phases (e.g., the opening phase or the question-answering phase). In managing interview conversations, participants have to collaborate actively to reach interview objectives and move through the various phases in a timely manner. Suggesting that one might move on is a potentially delicate matter, which explains why laughter often occurs in conversation in relation to transitions (Bonin et al., 2012; Holt, 2010). We thus expect to observe differences in the distribution of laughter relative to transitions from one interview phase to the next, with laughter being more likely near such transitions.

Research Question 3 is *Is laughter related to self-reported applicant impression management?* If laughter constitutes an honest (i.e., difficult-to-fake) signal of affiliation on the part of applicants, then it should be only partly under voluntary control and only partly consciously perceived. As a result, it should not be related to self-reported applicant IM tactics. On the other hand, by participating in shared laughter episodes when invited to by recruiters, laughter might constitute a means of ingratiation for applicants. If applicants participate in such episodes as a means of ingratiating themselves with recruiters, then the frequency of participation should be related to self-reported applicant IM.

Research Question 4 is *Is laughter related to recruiter perceptions of applicants?* A second criterion for laughter to constitute an honest signal of affiliation is that it should impact recruiter perceptions of applicants. Studying the social significance of laughter in selection interviews, Adelswärd (1989) demonstrated that applicants (i.e. who received an employment offer) participated in more shared laughter during their interview than unsuccessful applicants. Thus, the frequency of shared laughter should be positively related to recruiter perceptions of applicants or to potential hiring recommendations. However, applicants' unilateral laughter should be negatively related to such perceptions or recommendations.

We investigated these research questions in a data set of 80 real selection interviews. The use of real interviews is important because of their high-stakes nature that creates an affectively and motivationally charged setting, thus creating an ecologically valid opportunity to observe laughter. The interviews featured applicants applying for a wide range of positions. For each interview, two or three recruiters were present. Interviews were audiotaped and transcribed. From the transcripts, we decomposed interview talk into turns, defined as an uninterrupted stretch of talk produced by a given speaker (Sacks, Schegloff, & Jefferson, 1974). We transcribed whether the speaker laughed or not in a given turn. We thus analysed the data with the turn as the base unit of analysis for RQ1 and RQ2. Because turns (level 1) are nested in interviews (level 2), we computed multilevel logistic regression to investigate whether role, gender and transitions significantly predict the production of laughter in a given turn. To investigate RQ3 and RQ4, applicants filled out self-reports of impression management after the interviews and recruiters reported on their perceptions of applicant IM and honesty and made hiring recommendations, i.e. for each interview (level 2). Therefore, we analysed the data with the interview as the unit of analysis for RQ3 and RQ4. We used partial correlations to test whether laughter was related to all of these variables.

## **Methods**

### ***Participants***

80 real selection interviews were audiorecorded in two organizations in French-speaking Switzerland. Interviews involved an applicant and 2 or 3 recruiters, for a total of 111 participants. Eighty applicants participated (62.5% of women,  $M_{age} = 33.95$  years). They had already experienced on average 5.7 selection interviews ( $SD = 5.2$ ) and had on average 13.07 years ( $SD = 11.5$ ) of professional experience. 25.3% of them had managerial experience. 12.6% held a university diploma (Bachelor, Master or PhD). This figure is close to the national average for Switzerland (OFS, 2018), which features a strong vocational training program and thus lower rates of university graduates. Thirty-one recruiters participated (35.5% women,  $M_{age} = 45.10$  years). They conducted on average 22.23 selection interviews per year. Three recruiters were human resource specialists, while 28 were line managers.

### ***Procedure***

We contacted the human resources department of both organizations to obtain access to selection interviews. Potential participants were first contacted by the HR department. Non-HR recruiters (typically, line managers) were informed about the study at the time they selected applicants to interview (76% of line managers agreed to participate). They received an information letter and a consent form. Applicants were informed about the study at the time they were called for an interview. They were informed about the study and their initial agreement was asked for (89% of applicants agreed to participate). If they agreed, they later received an information letter, a consent form and the questionnaire about sociodemographic data and personality. At the time of the interview, the first author was present and audiorecorded it unobtrusively. At the end of the interview, applicants filled out a second questionnaire about their use of IM (Roulin & Bourdage, 2017). Recruiters filled out a questionnaire about their perception of the applicant's use of IM (Stevens & Kristof, 1995), a

hiring recommendation and some sociodemographic data. Finally, any questions were answered, and everyone was thanked for their participation.

### *Data preparation*

Interviews were audiorecorded and transcribed word-for-word. Transcribed features included fillers (*uh*), discourse markers (*ok*), laughter (*laughter*) and sighs (*sighs*). We used brackets [ ] to signal overlapping talk.

### *Measures*

#### *Gender*

We coded the gender of the speaker producing each turn, man =0 and woman =1.

#### *Role*

We coded the role of the speaker producing each turn, applicant =0 and recruiter =1.

#### *Transitions*

To measure transitions, we developed a coding system to divide interviews into seven phases (Table 1) (interrater agreement was assessed by double-coding 14 interviews, Cohen's Kappa = .79). Each turn was attributed to one of the seven phases. Four phases were present during almost all 80 interviews: opening, question-answering, applicant's questions and closing. The other three phases occurred occasionally. A transition between phases is defined as the last turn of a given phase or the first turn of the next phase. Each turn thus featured either the presence (=1) or absence (=0) of a transition.

[Table 1 about here]

#### *Laughter*

We coded each turn for the presence (=1) or absence (=0) of laughter, based on the transcripts. We also calculated by interview a total score of turns featuring laughter.

#### *Laughter sharedness*

We coded whether each instance of laughter was unilateral (=0) or shared (=1). We defined shared laughter as *two or more successive turns in which the presence of laughter was coded*. To feature shared laughter, a turn had to (1) be coded as containing laughter and (2) be preceded or followed by a turn coded as containing laughter. We also calculated a total score of turns by interview containing unilateral laughter and shared laughter.

#### *Shared laughter episodes*

All turns coded as featuring shared laughter and following each other were coded as a shared laughter episode. We calculated a total score of shared laughter episodes by interview.

#### *Initiation of shared laughter episodes*

For each shared laughter episode, we coded who initiated the episode, i.e. the person who laughed first (=1). We also calculated a total score by interview for each participant (applicants and recruiters).

#### *Applicant IM (honest and deceptive)*

We used a 30-item scale of applicant IM developed by Bourdage, Roulin, and Tarraf (2018). The scale (1-5, with 1 = *completely disagree*, and 5 = *completely agree*) comprises subscales for honest IM (self-promotion, ingratiation, defensive; 12 items,  $\alpha = .84$ ) and deceptive IM (slight image creation, extensive image creation, ingratiation, image protection, 18 items, one item with zero variance removed,  $\alpha = .79$ ).

#### *Recruiter perceptions of applicant IM*

We used a scale (1-5, with 1 = *completely disagree*, and 5 = *completely agree*) to measure recruiter perceptions of applicant IM, focusing on self-promotion. The scale included 5 items from Stevens and Kristof (1995) (e.g., “the applicant described his/her skills and abilities in an attractive way”) plus 3 additional items (e.g., “the applicant presented and expressed themselves convincingly”),  $\alpha = .92$ .

#### *Recruiter perceptions of applicant honesty*

We used a 3-item scale ( $\alpha = .80$ ) from Roulin et al. (2014) to measure how honest or transparent recruiters perceived applicants to be. Items were “it was easy for me to differentiate facts from fiction in the applicant’s responses”, “it was easy for me to judge applicant honesty”, and “it was easy for me to see who the applicant really was”. A five-point-rating scale was used, where 1 = *completely disagree*, and 5 = *completely agree*.

#### *Recruiter hiring recommendations*

We measured recruiters’ hiring recommendations using a single item, *to which extent do you think this applicant should be hired for the job? from 0% (the lowest recommendation) to 100% (the highest recommendation)*. We calculated a mean score by applicant over all recruiters present in the interview from 0 to 100. Hiring recommendations correlated significantly with subsequent job offers,  $r(80) = .56, p < .01$ .

#### *Analyses*

We investigated RQ1 and RQ2 using multilevel logistic regression, because our dependent variable (laughter) was binary (presence or absence of laughter). We used multilevel modelling because turns (level 1) are nested in interviews (level 2). We modelled interviews as random effects and predictors (role, gender, transitions) as fixed effects. We first calculated a null model with interviews modelled as random effect but no predictors. We then fitted a multilevel model with role, gender and transition as predictors (Model 1), as well as the interaction terms (Model 2). We investigated RQ3 and RQ4 using partial correlations between unilateral laughter, shared laughter episodes, episode initiation, episode participation, applicant honest and deceptive IM and recruiter perceptions of applicant IM and honesty and hiring recommendations, controlling for the amount of laughter by interview. It is important to control for the amount of laughter by interview to avoid confounds between the variables of interest and the general level of hilarity in the interview.

#### **Results**

Descriptive statistics for Research Question 1 variables appear in Tables 2 and 3. Descriptive results (Table 3) showed that in the 80 interviews, a total of 2,984 turns containing laughter were produced (out of 46,860 turns, i.e., 6.37% of turns). In terms of role, applicants produced 57.21% of turns containing laughter and recruiters 42.79%. In terms of gender, women produced 59.72% of turns containing laughter and men 40.28%. Finally, 3.62% of turns containing laughter were produced during a transition.

[Table 2 near here]

[Table 3 near here]

Research Question 1 was *who produces laughter in the selection interview?* Research Question 2 was *when is laughter produced in the selection interview?* To investigate these two research questions, we used turns as unit of analysis ( $N = 46,860$ ). We computed multilevel logistic regression models (Table 4). First, we examined the variation between levels. Using the interview intercept variance from the null model, we calculated the intraclass correlation coefficient (ICC) for interview. Results were significant and showed that 11.93 % of the total variance in laughter was attributable to between-interview variation (level 2) and 88.07 % was attributable to within-interview variation (level 1). Then, we computed a model with role, gender and transition as predictors (Model 1). Results showed that role, gender and transition significantly predicted laughter. Being an applicant (compared to being a recruiter) in the selection interview increased the odds of laughter production in a turn by 38 %. Being a woman increased the odds of laughter production in a turn by 33 %. Finally, the presence of a transition between two phases increased the odds of laughter production in a turn by 27 %. Model 1 showed a significant improvement over the Null Model ( $\Delta -2 X \log = 237.10$ ,  $df 3$ ,  $p < .001$ ). Finally, we computed a model with role, gender and transition and all interaction terms as predictors (Model 2). All three predictors from Model 1 remained significant, and the interaction between role and transition significantly predicted laughter (Figure 1). Applicants

have a higher probability of producing laughter on transitions, while recruiters have a lower probability. Model 2 showed a significant improvement over Model 1 ( $\Delta -2 X \log = 10.48$ ,  $df = 4$ ,  $p < .05$ ).

[Table 4 near here]

[Figure 1 near here]

[Table 5 near here]

Research Question 3 was *Is laughter related to self-reported applicant impression management?* Neither applicant unilateral laughter, nor applicant initiation of shared laughter episodes nor applicant participation in shared laughter episodes was related to applicants' self-reports of honest or deceptive IM, controlling for the amount of laughter (Table 5). This pattern of findings suggests that laughter is not used by applicants as a conscious IM strategy.

Research Question 4 was *Is laughter related to recruiter perceptions of applicants?* Applicant unilateral laughter was significantly negatively correlated with recruiter perceptions of self-promotion and honesty and with hiring recommendations. Applicant initiation of shared laughter episodes was unrelated to recruiter perceptions of self-promotion and honesty and to hiring recommendations. However, applicant participation in shared laughter episodes was significantly positively correlated with recruiter perceptions of applicant honesty and with hiring recommendations, but not with recruiter perceptions of self-promotion (Table 5). This pattern of findings suggest that unilateral laughter is evaluated negatively by recruiters, whereas applicant participation in shared laughter episodes is taken by recruiters as a signal of honesty, but not of applicant self-promotion.

## **Discussion**

Laughter is more than just a trivial and spontaneous phenomenon. It helps reduce ambiguity, establish and manage relationships and project identities in everyday and institutional interactions (Glenn & Holt, 2013). To date, few studies have investigated

laughter in the selection interview, and those that have done so have used qualitative approaches (Adelswärd, 1989; Glenn, 2010). We extended this line of research with a quantitative analysis of laughter in a data set of real selection interviews. The interactional and psychological properties of laughter make it a potential candidate for being an honest signal of affiliation in the selection interview, and thus an interesting candidate for expanding our understanding of IM processes.

Research Question 1 investigated how laughter is distributed among individuals, focusing on effects of role and gender. Regarding role, 57% of laughs were produced by applicants. Previous findings in medical interactions show similar proportions of laughter produced by patients (61%) (Haakana, 2001, 2002; West, 1984). Thus, recruiters' role as organizational representatives and applicants' role as outsider affects laughter distribution similarly to other institutional interactions. Regarding gender, 60% of laughs were produced by women in our data, again similar to previous findings (56%) (Adelswärd, 1989).

Research Question 2 investigated when laughter is produced, focusing on whether it is associated with transitions between different phases of the interview. Results showed that laughter is significantly more likely to occur during transitions. Moreover, applicants are significantly more likely to produce laughter during transitions. Because transitions are moments during the interview when participants move from one topic or activity to the next, their coordination is somewhat delicate (e.g., suggesting moving to another topic might be face-threatening for participants who are enjoying the current topic). Laughter may constitute a useful tool to solve such dilemmas and progress through the interaction. That applicants laugh more often during transitions suggests that because recruiters are responsible for managing the interview agenda (Glenn, 2010; Tullar, 1989), they may also produce invitations to laugh for applicants during transitions.

Research Questions 3 and 4 assessed whether shared laughter could potentially be considered an honest (difficult-to-fake) signal of affiliation. We found that applicant laughter behaviour in its various forms (unilateral laughter, initiation of shared laughter episodes, participation in shared laughter episodes) was unrelated to applicant self-reported honest and deceptive IM, suggesting that laughter is not consciously used as an IM tactic. Moreover, unilateral laughter was negatively evaluated by recruiters, whereas applicant participation in shared laughter episodes (initiated by recruiters) is associated with recruiter perceptions of applicant honesty or transparency (but not with recruiter perceptions of self-promotion) and ultimately, with hiring recommendations.

These findings have important implications for a signalling approach to social interaction in the selection interview. Participation in shared laughter episodes seems to be spontaneous (i.e., unrelated to self-reports of honest and deceptive impression management), and reflects positive evaluations (notably of honesty or transparency) by recruiters. Shared laughter thus fulfils two criteria for constituting an honest (difficult-to-fake) signal of affiliation (Bangerter et al., 2012): It is partly beyond conscious self-report and affects recruiter perceptions and evaluations. As such, the current findings expand our understanding of the range of potential signalling behaviour to more affective and nonverbal signals. Subtle behaviors like laughter have a collaborative structure (shared laughter episodes) that may be indicative of genuine information about rapport between applicants and recruiters. On the other hand, unilateral laughter seems to have a strong negative effect on recruiters.

This study has some limitations. First, we only coded shared laughter episodes initiated by laughter. We did not code for other potential initiators such as jokes, funny stories or nonverbally conveyed invitations like smiling (Glenn, 2003, 2010; Haakana, 1999). We focused on initiations by laughter because these are the most common means for inviting laughter (Jefferson, 1979), and often other invitation means remain ambiguous and subject to

interpretation (Glenn, 2010). Second, the data we used were audiorecorded and we were not able to consider inaudible manifestations of laughter. Due to these issues, we might have missed some relevant invitations or responses. Third, we measured interview outcome from the recruiters' perspective (hiring recommendations). It would be very interesting to also investigate applicants' perspectives and explore the impact of laughter from both sides of the interview. Indeed, for recruiters a successful interview is more than a correct evaluation and includes conveying favorable images of themselves and the organization to applicants (Glenn, 2010; Wilhelmy et al., 2017). The impact of recruiter laughter on applicant perceptions is important to investigate (Glenn, 2010). Fourth, the level 2 sample size was rather small, even if the sample is larger than for some previous studies on laughter.

Despite these limitations, our findings point out several potentially important areas for further investigation. First, it is important to determine what shared laughter is a signal of. We found that recruiters evaluate applicants who participate in shared laughter episodes as more transparent and honest, but it remains to be shown what this corresponds to in applicants. Thus, more data on individual differences that predict applicant laughter participation is needed. Second, it is important to understand what determines recruiter laughter patterns (e.g., what characteristics correlate with laughter initiation and participation in recruiters) and how these are interpreted by applicants (in terms of honesty and perceived impression management strategies). Third, given the negative perceptions of unilateral laughter on the part of applicants, it would be important to understand its causes. Unilateral laughter may be the result of failed laughter invitations but it is unclear what kinds of topics these are related to. Finally, the causal nature of the relation between shared laughter and hiring recommendations should be further elucidated. Currently it is unclear whether shared laughter is causally efficient, i.e., whether the fact of laughing together ameliorates recruiter evaluations, or whether shared laughter is a correlate of some other process.

## Tables

**Table 1.** Phases occurring in the selection interviews and percentage of interviews they were present in.

Phase	Definition / contents	Presence (%)
1 Opening	Getting the applicant comfortable, defining the interview procedure, introduction of the participants	100
2 Applicant self-presentation	Applicant self-presentation, spontaneously or following recruiters' invitation	52.5
3 Question-answer	Recruiters' questions and applicants' answers about applicant education, professional experience, motivation, professional goals, and so on.	100
4 Organization presentation	Recruiters' presentation of the organization, the position or the team	67.5
5 Simulation	Applicant asked to engage in role-play or answer situational question	10
6 Applicant questions	Any question applicants ask during the interview, spontaneously or by invitation from recruiters	97.5
7 Closing	Discussion about salary, administrative details and subsequent events in the selection procedure	100

Note.  $N = 80$ .

**Table 2.** Means (*M*), standard deviations (*SD*) and correlations between laughter, role, gender and transitions.

Variable	<i>M</i>	<i>SD</i>	1	2	3
1 Laughter	0.06	0.24			
2 Role	0.55	0.50	-.07**		
3 Gender	0.48	0.50	.06**	-.27**	
4 Transition	0.03	0.17	.01	.03**	.02**

*Note.*  $N = 46,860$  turns. Role: applicant = 0, recruiter = 1. Gender: men = 01, women = 1. \*  $p < .05$ ; \*\*  $p < .01$ ; \*\*\*  $p < .001$

**Table 3.** Crosstabs of laughter by role, gender and transition.

Role	Gender	Transition				Total	
		No		Yes			
Applicants	Men	485	29.52%	16	25.00%	501	29.35%
	Women	1158	70.48%	48	75.00%	1206	70.65%
	Total	1643		64		1707	<b>57.21%</b>
Recruiters	Men	686	55.64%	15	34.09%	701	54.89%
	Women	547	44.36%	29	65.91%	576	45.11%
	Total	1233		44		1277	<b>42.79%</b>
Total	Men	1171	40.72%	31	28.70%	1202	<b>40.28%</b>
	Women	1705	59.28%	77	71.30%	1782	<b>59.72%</b>
	Total	2876	<b>96.38%</b>	108	<b>3.62%</b>	2984	

*Note.*  $N = 2,984$  turns with the presence of laughter.

Table 4. Summary of multilevel logistic regression models predicting laughter.

Random effects	Null Model			Model 1					Model 2						
	Name	Variance	SD	Name	Variance	SD	Name	Variance	SD	Name	Variance	SD			
Interviews	Intercept	.45	.67	Intercept	.40	.63	Intercept	.41	.64						
Fixed effects	Estimate	SD	OR	[95% CI]	OR	Estimate	SD	OR	[95% CI]	OR	Estimate	SD	OR	[95% CI]	OR
Intercept	-2.80 ***	.08	.06	.05	.07	-2.72 ***	.09	.07	.06	.08	-2.71 ***	.09	.07	.06	.08
Role						-.48 ***	.04	.62	.57	.67	-.50 ***	.07	.61	.53	.70
Gender						.29 ***	.05	1.33	1.19	1.48	.25 **	.08	1.28	1.09	1.50
Transition						.24 *	.10	1.27	1.03	1.55	.57 *	.29	1.76	1.03	3.00
Role * Gender											.06	.10	1.06	.87	1.29
Role * Transition											-.91 *	.40	.40	.19	.85
Gender * Transition											-.06	.33	.95	.53	1.83
Role * Gender * Transition											.52	.48	1.68	.66	3.99
log-2 likelihood															
diff log-2															

N = 46860 turns (level 1), N = 80 interviews (level 2). \* = p < .05, \*\* = p < .01, \*\*\* = p < .001

**Table 5.** Means (*M*), standard deviations (*SD*) and partial correlations (controlled for laughter by interview) for variables relevant to Research Questions 3 and 4.

Variable	<i>M</i>	<i>SD</i>	1	2	3	4	5	6	7	8	9	10	11
1 Unilateral laughter (applicant)	13.93	13.50											
2 Unilateral laughter (recruiters)	5.65	4.77	-.621***										
3 Shared laughter episode	7.24	5.36	-.858***	.254**									
4 Episode initiation (applicant)	3.61	3.14	-.415***	-.093	.634***								
5 Episode initiation (recruiters)	3.59	2.98	-.748***	.422***	.735***	-.052							
6 Episode participation (applicant)	3.81	3.36	-.464***	-.068	.451***	.058	.519***						
7 Episode participation (recruiters)	6.70	5.47	-.784***	.146	.798***	.602***	.504***	.319**					
8 Honest IM (applicant)	3.42	0.60	-.179	.272*	-.013	-.154	.152	.025	.102				
9 Deceptive IM (applicant)	1.29	0.32	-.117	.049	-.067	-.143	.201	.201	.093	.332**			
10 Perceived self-promotion (recruiter)	3.44	0.74	-.318**	.225	.252*	-.104	.424***	.200	.165	.175	-.033		
11 Perceived honesty (recruiter)	3.66	0.58	-.361***	.305**	.227*	-.117	.398***	.263*	.167	.223	.069	.633***	
12 Hiring recommendation	59.08	24.00	-.338**	.289*	.289*	-.03	.415***	.257*	.218	.061	-.049	.843***	.621***

Note :  $N = 74-80$ . \*  $p < .05$ ; \*\*  $p < .01$ ; \*\*\*  $p < .001$

Figures

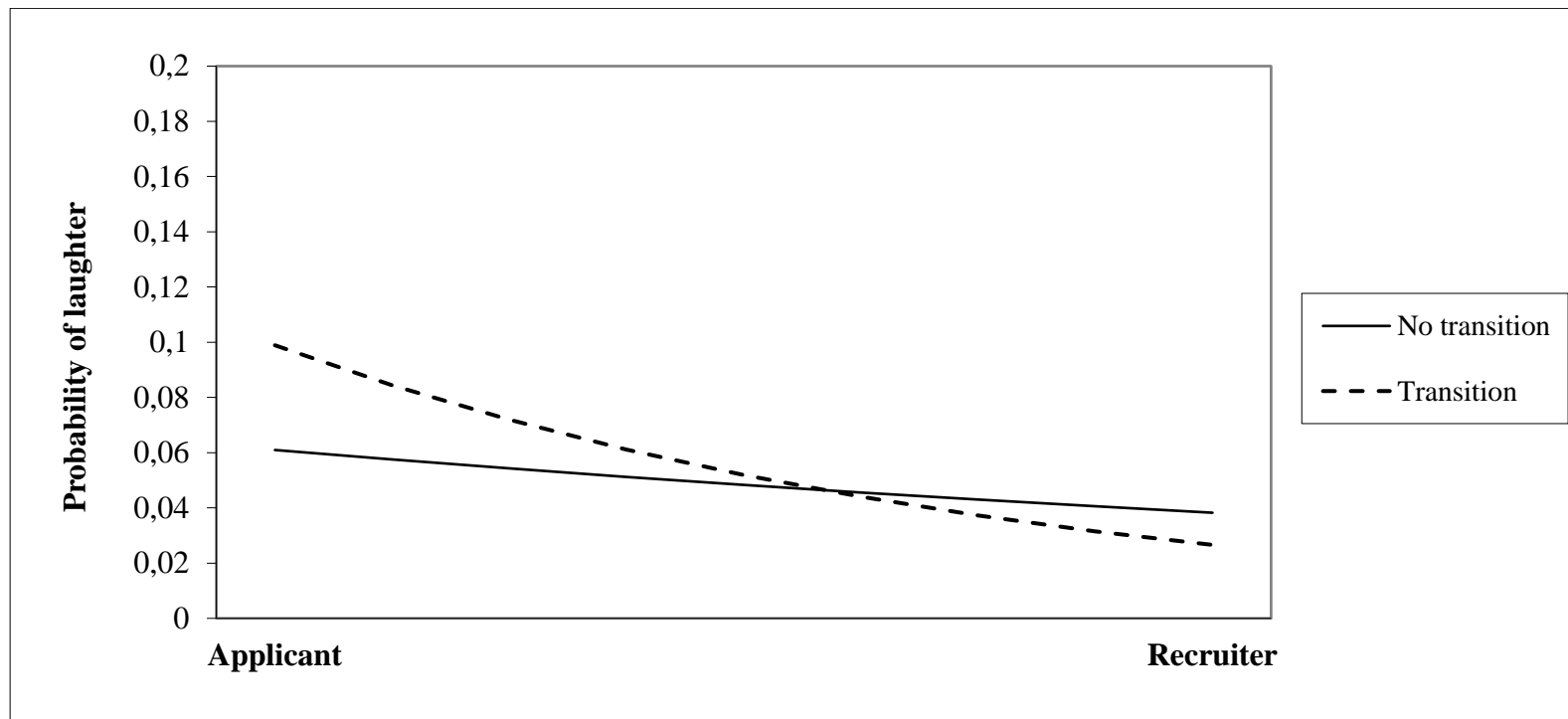


Figure 1. Two-way interaction effects of role and gender predicting laughter.

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