Examining the Impact of Applicant Smoking and Vaping Habits in Job Interviews

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Abstract

Cigarette and electronic-cigarette users (i.e., vapers) are increasingly stigmatized in both society and the workplace. We examine effects of this stigmatization in the selection process by testing whether interviewers' negative initial impressions of smokers and vapers extend throughout the interview. We used a dual-process framework of interviewer bias against stigmatized applicants, comprised of Type I-automatic and Type II-systematic processes, and conducted two experiments where U.S. and Canadian participants enacted the role of an interviewer in video-based job interview simulations. Consistent with Type I processes, results show that cigarette smokers, and to lesser extent vapers, were initially rated as less qualified than non-smokers. These initial impressions were not subjected to justification/rationalization during the interview via harder questions asked. However, they served as anchors, also consistent with Type I processes, and impacted final assessments alongside Type II adjustments based on applicants' response quality. Additionally, using attentional eye tracking data, we found that raters with worse attitudes toward smoking, but not vaping, glanced at stigma cues more frequently, which went on to influence first impressions. These findings provide valuable tests of key components of the dual-process model of interviewer bias, and raise concerns around the devaluation of smokers and vapers in hiring decisions.

Keywords: Smoking; Vaping; Stigmatization; Discrimination; Employment Interviews

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Organizations frequently use personnel selection methods that rely on managers' subjective judgments and interpretations (Highhouse, 2008). These judgments can unfortunately be biased due to numerous reasons. For instance, biases may be triggered by the presence of stigmatized features like candidate gender, age, race, ethnicity, religion, sexual orientation, disabilities, and depression (e.g., Baert, 2016; Baert, De Visschere, Schoors, Vandenberghe, & Omey, 2016; Derous, Pepermans, & Ryan, 2016b; Finkelstein, Burke, & Raju, 1995; Ghumman & Ryan, 2013; Hebl, Foster, Mannix, & Dovidio, 2002). In numerous parts of the world, many of these features are legally prohibited grounds for hiring discrimination (e.g., through the United States' Civil Rights Act, the Canadian Human Rights Act, and the European Union's Charter of Fundamental Rights). Researchers, however, continue to identify candidate features such as body piercings (McElroy, Summers, & Moore, 2014), body art and tattoos (Burgess & Clark, 2010; Timming, 2017), and cigarette smoking (Roulin & Bhatnagar, 2018) that trigger biases but do not receive legal protection.

The instance of cigarette smoking, and negative connotations engendered on a wide range of unassociated traits, is particularly troublesome for organizations. Smokers, once socially accepted, are now devalued (Bayer & Stuber, 2006; Seiter, Weger, Merrill, Mark McKenna, & Sanders, 2010). This manifests in workplaces through outcomes such as unfair performance evaluations on work-related attributes like professionalism and team work (Gilbert, Hannan, & Lowe, 1998), and the emergence of smoke-free and smoker-free organizational policies (Houle & Siegel, 2009; Lecker, 2009). Notwithstanding numerous negative labor market outcomes, national and regional level legislations designed to protect employees generally circumvent smokers (Schmidt, Voigt, & Emanuel, 2013). The emergence of alternative forms of smoking

such as “vaping” electronic-cigarettes also complicate a full understanding of the organizational and job market effects of smoking. Concerns around vaping are exacerbated given its popularity with younger users (Keane, Weier, Fraser, & Gartner, 2017), and perceptions that it is a less harmful alternative to cigarettes and therefore an effective smoking cessation tool. Recent evidence however is troubling, and links vaping with risks such as developing respiratory illnesses over time (Howard, 2019). Both researchers (e.g., Palazzolo, 2013) and governmental agencies (e.g., U.S. Centers for Disease Control and Prevention, 2019) have called for greater investigations into the long-term health effects of vaping. The effects of vaping in the personnel selection domain too remain unexamined. In fact, only one study to date has examined the presence of cigarette smoker stigmatization in hiring (Roulin & Bhatnagar, 2018). This study, however, used written scenarios and limited its examinations to initial impressions of cigarette smokers. Very little is thus known about the impact of more realistic depictions of applicant smoking as well as vaping habits on interviewer judgments and decisions throughout the interview.

This research employs two studies built on key components of the recent dual-process model of interviewer bias against stigmatized applicants proposed by Derous, Buijsrogge, Roulin, and Duyck (2016a) to examine the roles of smoking and vaping status within the full job interview. It contributes to the personnel selection and employment discrimination literatures in several ways. First, it empirically tests key propositions outlined in Derous et al.’s (2016a) model. Second, it presents a novel research methodology that uses a video-based interview simulation paired with eye-tracking technology that examines participants’ (i.e., interviewers’) attention to stigma cues. Third, it replicates the initial findings of Roulin and Bhatnagar (2018) that are limited to first impressions, and extends them by examining the entire interview process.

Fourth, it explores whether the "smokerism" bias seen against cigarette smokers (Gilbert et al., 1998) also extends to vapers. Finally, it investigates whether smoking status interacts with ethnicity to create a "double jeopardy" whereby interviewer reactions become even more negative when smokers and vapers are ethnic minority as compared to majority applicants. This research has important practical and societal implications given the significant segment of the population that continues to smoke cigarettes, and the rise in popularity of alternative forms of smoking such as vaping. According to the latest (2015) statistics provided by the World Health Organization, amongst people 15 years of age and older, daily tobacco smoking rates stand at 15.9% in the U.S., 10.7% in Canada, 18% in the U.K., and 27.4% in France (http://www.who.int/countries/en/). This demonstrates the pervasiveness of smoking, and the concomitant scope of the problem.

The Dual-Process Model of Interviewer Bias

Derous et al. (2016a) recently proposed a dual-process model of the cognitive processes underlying biased assessments of stigmatized applicants in job interviews. The framework, described here, is built on existing dual-process models of biases within social interactions and decision-making (Kahneman, 2003; Pryor, Reeder, Yeadon, & Hesson-McInnis, 2004). Derous et al. (2016a) focused on interviewer judgments and incorporated the social and organizational aspects of the interview to argue that these judgments result from two parallel types of processes. Specifically, Type I processes that are largely automatic and driven by cognitive scripts and heuristics, and Type II processes that are conscious, thoughtful, and drawn from working memory. While Type I processes are immediately activated, resulting in faster intuitive decisions and uncontrollable impulses, Type II processes require slower information processing, leading to

controlled judgments and behaviors. While some Type II processes may be deliberate attempts at justifying Type I intuitive responses, others aim to correct and override these biased responses.

These Type I and Type II processes, together with situational and interviewer factors that serve as facilitators or impediments, influence interviewers' reactions, judgments, and behaviors in the three pre-interview, interview, and post-interview stages. In the *pre-interview stage*, interviewers' *initial impressions* are proposed as primarily outcomes of *Type I processes*. Indeed, interviewers initially judge candidates based on access to two types of information. First, limited ancillary information obtained prior to the interview such as the candidate's resume (Levashina, Hartwell, Morgeson, & Campion, 2014); and second, salient visual cues like applicant appearance or stigmatizing features (Finkelstein, Frautschy Demuth, & Sweeney, 2007; Madera & Hebl, 2012) and behaviors such as handshake quality (Stewart, Dustin, Barrick, & Darnold, 2008) observed at the start of the interview. Derous et al. (2016a) suggested that stigmatizing features play an important role in initial impression formation, especially if the interviewer relies on stereotypes, is prejudiced, or has negative attitudes towards stigmatized applicants. Initial judgments of stigmatized applicants are thus proposed as more intuitive, automatic, and fast compared to judgments of non-stigmatized applicants who are assessed based on less salient information.

The *interview stage* is essentially a social exchange of information between interviewers and applicants, and includes a rapport building followed by a questioning phase. Unless the interview is highly structured, interviewers can choose the types of questions asked and gather information in order to update their initial impressions. For stigmatized applicants, Derous et al. (2016a) suggested that interviewers engage in Type I *confirmatory information processing* aligned with biased initial impressions. That is, interviewers focus on information, such as verbal

and non-verbal behaviors, that helps confirm initial biased impressions rather than information that updates these impressions. Interviewers also use Type II processes to *rationalize* and *justify* their initial impressions whereby they selectively seek out and accept new information that aligns with initial impressions, while scrutinizing and discarding evidence that is unaligned with them. As a result, *post-interview judgments* of stigmatized applicants remain anchored by Type I initial impressions via self-fulfilling prophecies wherein final evaluations are strongly influenced by initial impressions (Dipboye, 1982; Stewart et al., 2008).

In contrast, for non-stigmatized applicants, Derous et al. (2016a) argued that interviewers consciously and actively gather new information via Type II processes in order to update initial impressions that were associated with less confidence. This involves developing varying hypotheses surrounding applicant qualifications, testing them via questioning, and interpreting both confirming and disconfirming information while updating applicant representations. As such, post-interview final evaluations of non-stigmatized applicants are based on initial impressions adjusted by new information based on quality of the interaction and applicant responses.

Societal, Organizational, and Interviewer Biases toward Cigarette Smokers and Vapers

The first U.S. Surgeon General's report warned of the health risks for cigarette smokers (U.S. Department of Health Education and Welfare, 1964) and marked the beginning of a societal rejection of smoking. Subsequent reports that highlighted the second-hand health risks for non-smokers significantly contributed to perceptual and legislative shifts against cigarette consumption. As tobacco de-marketing campaigns adopted stigmatizing tactics, and the higher social classes distanced themselves from smoking, smokers began to be viewed as abhorrent deviants that hurt others rather than their earlier characterization as glamorous independent

individuals (Bayer & Stuber, 2006). The subversion of cigarette smoking from socially normative to stigmatized is now complete (Kim, Cao, & Meczkowski, 2017).

Goffman (1963) proposed that a stigma is an attribute, such as smoking, that leads to negative stereotypes about the person, such as unrelated characterizations made about smokers. Stigmatization often results in spoiled social identities, status devaluation, and discrimination (Link & Phelan, 2001). Stigmatization at a societal level, where smokers are seen as less credible, likeable, considerate, clean, and so forth (Schmidt et al., 2013), also transpires in the workplace where smokers are disadvantaged in a variety of ways. In economic terms, organizations view smokers as expensive based on higher perceived healthcare costs/claims (Schmidt et al., 2013) coupled with lower perceived attendance and productivity (Greenberg, 1994). Smokers are viewed as less productive and more absent despite no real supporting evidence (Morrow & Leedle, 2002). They receive worse evaluations on job-related attributes such as dependability and professionalism (Gilbert et al., 1998) and take on riskier jobs while receiving lower bonuses for hazardous conditions (Viscusi & Hersch, 2001). These inferior outcomes are exacerbated as many organizations institute not just odor-free and smoke-free environments (Malouff, Slade, Nielsen, Schutte, & Lawson, 1993), but also smoker-free hiring policies (Houle & Siegel, 2009). While such discriminatory practices are legal in many states in the U.S. and supported by tobacco control proponents, they have also been deemed as unethical given the non-job-related, leisure-time, and addictive nature of smoking (Houle & Siegel, 2009; Schmidt et al., 2013).

In personnel selection, numerous stigmatized job applicant characteristics such as disabilities, depression, ethnicity, age, gender, and religion are found to impact managers' subjective assessments (e.g., Derous et al., 2016b; Finkelstein et al., 1995; Ghumman & Ryan,

2013; Hebl et al., 2002). For instance, disclosing a disability such as blindness or deafness unrelated to productivity results in fewer call backs even when disability-based wage subsidies are made salient (Baert, 2016). Similarly, disclosing a year of unemployment due to depression results in fewer interview invitations (Baert et al., 2016). Smoking may be categorized as a visible, controllable, and unprotected stigma; three characteristics likely to impact hiring decisions (Summers et al., 2018). Recent research found that initial impressions of job applicants identified as smokers were less favorable compared to non-smokers partly because the former were deemed as more likely to engage in counterproductive work behaviors (Roulin & Bhatnagar, 2018). These lowered evaluations were exacerbated for raters that held less favorable attitudes toward smoking. Although this research provides preliminary evidence of smoker stigmatization during selection, the interviewer judgments were based on written descriptive scenarios, restricted to initial impressions without addressing the remainder of the interview, and associated with cigarette but not alternative forms of smoking such as vaping.

Electronic-cigarettes or vaping devices are battery-operated devices that deliver a vapor created by heating e-liquid cartridges that contain varying amounts of nicotine or are nicotine-free (Booth, Albery, & Frings, 2017). These come in a variety of shapes including those that look like standard cigarettes, larger tank-based systems, or memory sticks and pens. Over the last few years, vaping has emerged as an alternative to traditional cigarette smoking (Keane et al., 2017). Although its long-term health effects are under investigation, vaping is generally perceived as less harmful and addictive relative to traditional smoking, and therefore an aid to cigarette smoking cessation (Dawkins, Turner, Roberts, & Soar, 2013; Palazzolo, 2013; U.S. Centers for Disease Control and Prevention, 2019). Vaping is also popular with the younger demographic (Emery, Vera, Huang, & Szczypka, 2014) partly because it helps circumvent bans on cigarette

smoking in public spaces and the variety of flavors such as dessert, sweet fruit, and candy that are available (Harrell et al., 2017). Initial research indicates that social attitudes and reactions towards vaping are more favorable than towards smoking, with vaping in public being perceived as more acceptable and less harmful (Booth et al., 2017). However, other results also show that vaping is viewed as relatively unsafe and unhealthy, suggesting slow shifts in social attitudes (Hart, 2017). Moreover, we still know very little about reactions toward vaping in hiring decisions. Next, we use the dual-process model of interviewer bias to understand interviewer reactions to job applicants that are smokers or vapers within the various stages of the interview.

Pre-Interview Stage

According to Derous et al. (2016a), interviewers' initial impressions in the pre-interview stage are largely outcomes of Type I processes. Visible stigmas are processed through interviewers' automatic heuristics, leading to more negative initial impressions of stigmatized applicants. Candidates can give their smoking or vaping habits away in a number of ways. For example, candidates might smoke outside the building to manage stress before an interview, smell like cigarettes during the interview, involuntarily display the cigarette pack or vaping device (e.g., in a bag or pocket), or reveal their habits through social media posts (if interviewers engage in cybervetting; Berkelaar, 2017; Roulin & Bangerter, 2013). Thus, both cigarette smoking and vaping are visible stigmas that can be associated with stronger reactions (Derous et al., 2016a). Given the current societal view on cigarette smoking (Bayer & Stuber, 2006; Kim et al., 2017), research on biases towards smokers in the workplace (Schmidt et al., 2013), and recent findings in selection (Roulin & Bhatnagar, 2018), we expect applicants who smoke to be stigmatized, and thus receive more negative initial assessments than non-smokers. Vaping is a more recent trend, initial evidence raises concerns, but the long-term impacts on health are still

unclear (Palazzolo, 2013; U.S. Centers for Disease Control and Prevention, 2019). Public perceptions of vaping, albeit likely not as negative as for cigarette use (Booth et al., 2017), are undergoing deterioration (Hart, 2017). We thus also expect worse initial impressions of applicants who are vapers than non-smokers.

Hypothesis 1: Initial impressions are more negative for applicants who are (a) cigarette smokers and (b) vapers than non-smokers.

Intersectional theory posits that people can be socially categorized in multiple ways (e.g., based on gender, social class, and ethnicity), with multiple identities serving as a source of discrimination, and coming together to form a complex network of disadvantages (Ruiz Castro & Holvino, 2016). Applicants can be stigmatized for different reasons, and research has highlighted how individuals belonging to two stigmatized groups may be twice as disadvantaged in the form of a "double jeopardy". For instance, minority women are particularly vulnerable to pay discrimination (Barnum, Liden, & DiTomaso, 1995) and hiring discrimination (Derous, Ryan, & Nguyen, 2012). In selection, race and ethnicity are central sources of discrimination (e.g., Derous, Nguyen, & Ryan, 2009). We thus expect smokers and vapers who also belong to an ethnic minority group to be especially vulnerable and to be doubly punished.

Hypothesis 2: Initial impressions are more negative for applicants who are both from an ethnic minority group and (a) smokers or (b) vapers.

The process of interviewers' initial impression formation largely relies on existing heuristics, and thus automatic Type I processes (Derous et al., 2016a). In other words, interviewers automatically react to applicants' visible stigmas, which trigger emotional and behavioral reactions such as staring at the stigma. In contrast, Type II processes would be activated to override such impulses, because they violate professional norms, and initiate more

controlled behaviors (e.g., avoid staring at the stigma; Derous et al., 2016a). Although it is relatively easy to measure the outcome of reactions in a job interview, for instance via initial impression ratings, it is more difficult to measure actual automatic reactions (and thus directly examine Type I processes). One way to capture such reactions is to measure the extent to which attention is paid to the stigma. Self-reported attentional data are not reliable indicators of a process that can occur below conscious levels of awareness. Although physiological assessments of attention, such as via eye tracking, are imperfect approaches and their use in assessing cognitive processes debated, such approaches have also been encouraged (Beach & McConnel, 2018; Glöckner & Herbold, 2011). In selection research, Madera and Hebl (2012) used eye tracking technology in a study where participants listened to an audio-recorded interview while viewing a static picture of an applicant. They showed that participants who spent more time looking at the facial stigma recalled fewer interview facts and rated the applicant more negatively. As proposed by the dual-process model (Derous et al., 2016a), the presence of a stigma should initially activate Type I processes, such as staring at the stigma. And, these automatic processes should lead to more negative initial judgments of the applicant. Thus, we expect that interviewers who pay greater attention to both obvious cues of smoking status (e.g., the person smoking/vaping outside before the interview) or subtler ones (e.g., a cigarette pack/vaping device visible upon first meeting the applicant) would form worse initial impressions of the applicant.

Hypothesis 3: The more interviewers pay attention to cues of (a) smoking or (b) vaping prior to the interview, the more negative are their initial impressions of applicants.

Interview & Post-Interview Stages

The dual-process model predicts that interviewers' information gathering during the interview depends on their initial classification of applicants (Derous et al., 2016a). When candidates have been easily classified in the initial impression stage, with stigmatized applicants being initially evaluated more negatively, interviewers engage in both Type-I processes by automatically ignoring information that does not confirm initial impressions and Type-II processes by consciously collecting information to justify or rationalize their initial judgment. When the initial classification is unclear, such as with non-stigmatized applicants being initially evaluated more positively, interviewers are more likely to actively search for new information to update impressions (Type II processes). Interviewers can adapt their information gathering approach in unstructured or semi-structured interviews, where they can choose the questions asked (Levashina et al., 2014). Justification and rationalization processes can involve interviewers asking different questions of applicants depending on their initial impressions. For instance, applicants initially rated more negatively (likely smokers and vapers) may be asked more difficult questions, which limits their opportunity to provide responses that would impress the interviewer. This creates a self-fulfilling prophecy (Dipboye, 1982; Dougherty, Turban, & Callender, 1994) whereby interviewers' affirm initial impressions and justify worse final evaluations. We thus expect:

Hypothesis 4a: The more negative interviewers' initial impressions are, the more they ask difficult questions of applicants.

Hypothesis 4b: The more interviewers ask difficult questions of applicants, the more negative are their final evaluations of applicants.

Another prediction of the dual-process model is that interviewers use their initial impressions of candidates as anchors when making post-interview decisions (i.e., Type I process;

Derous et al., 2016a). In other words, the more positive the initial impressions are, the more positive the final decisions will be (Barrick, Swider, & Stewart, 2010; Dougherty et al., 1994; Stewart et al., 2008). At the same time, interviewers can also incorporate new information gathered from the applicant during the interview and use it to update their initial assessments through Type II processes (Derous et al., 2016a). Importantly, applicants respond to interviewer questions and provide job-relevant information about their work experience and qualifications during the interview. Interviewers should adjust their initial impressions depending on these responses, for instance by rating the applicant more positively when high-quality responses are received. On the other hand, if stigmatizing attributes remain visible and salient during the interview, Type I processes can continue to produce undesirable behavioral impulses (where interviewers automatically pay attention to the stigma cue at the same time as listening to applicant responses), while Type II processes are activated to suppress and overrule these impulses. Type I processes, which again may be captured via eye-tracking (e.g., Madera & Hebl, 2012), may hinder interviewers' ability to effectively adjust their impressions. We thus anticipate that interviewers who pay greater attention to cues of smoking status such as a visible cigarette pack/vaping device during the question-and-answer phase would evaluate the applicant more negatively at the end of the interview.

Hypothesis 5: Interviewers' final evaluations are positively related to (a) initial impressions, and (b) the quality of applicants' responses.

Hypothesis 6: The more interviewers pay attention to cues of (a) smoking or (b) vaping during the interview, the more negative are their final evaluations of applicants.

Study 1

We developed an innovative video-based job interview simulation to test Hypotheses 1, 2, 4, and 5 in Study 1. This methodology is similar to digital interviews where interviewers assess video recordings of applicant responses (e.g., Langer, König, & Krause, 2017). Participants played the role of an interviewer tasked with assessing a candidate for a social media manager position at a bank.

Method

Sample. Participants were 609 U.S. residents recruited through the online Mechanical Turk (MTurk) panel, and were paid US $2. Research suggests that MTurk respondents are generally more attentive (Hauser & Schwarz, 2016) and diverse (Landers & Behrend, 2015) than student samples, and typically lead to high quality data (Buhrmester, Kwang, & Gosling, 2011). We used the TurkPrime portal (Litman, Robinson, & Abberbock, 2016) to ensure that all respondents were from the U.S., had a minimum 70% MTurk approval rating, and had not participated in any of our previous pre-tests (see below). The mean age was 34.1 (*SD* = 10.4). The sample was 56% male and 44% female, 74.5% Caucasian, 9.1% Asian, 8.8% Black, 4.3% Hispanic, 61% college educated, and 68.9% employed. Importantly for this study, 38.3% of respondents had prior experience in a hiring role, 24.9% were smokers, and 16.8% were vapers.

Design. We used a 3x2x2 between-subjects design where the job applicant was portrayed as a smoker, vaper, or in a control condition, was from an ethnic majority (Caucasian) or minority (East Indian) group, and provided high- or average-quality interview responses. Participants were randomly assigned to one of the twelve conditions. The smoker was shown smoking a cigarette prior to the interview, and displayed a pack of cigarettes during the

interview. The vaper was shown using and displaying a vaping device. The control candidate used/displayed a cellphone (similar to Roulin & Bhatnagar, 2018)[1].

Material Creation and Pre-Tests. Before developing the video material, we first created sixteen interview questions designed to vary in difficulty and pre-tested them using an independent sample of $N = 61$ respondents also recruited through MTurk. Each question was rated on a 7-point scale ("extremely easy" to "extremely difficult"). We retained eight questions that significantly differed in perceived difficulty (four "easy", four "difficult"). We then created and pre-tested sixteen written applicant response scripts (i.e., good and average responses for each of the eight questions). Another MTurk sample of $N = 78$ respondents assessed the quality of response scripts (i.e., four per person) using a 3-item, 7-point scale measure (e.g., "the candidate provided a strong answer"). We ensured that response quality was in line with our manipulation, and made edits to the scripts where differences in quality required enhancement.

We created our video material by hiring two male actors to play the part of the job applicant: one Caucasian to represent the majority ethnicity group, and one East Indian to represent the minority ethnicity group. We first interviewed several actors, and chose two actors that were both in their late thirties, and similar on attributes such as size, perceived age, and language skills. We also checked that both actors were perceived similarly on warmth (using two items: friendly and approachable) and competence (using two items: professional and competent) by showing their picture to a sample of $N = 55$ undergraduate business students, with half viewing and assessing the minority candidate and half the majority candidate. ANOVA results showed no significant differences on any of the items, and the means suggested average levels of

[1] We used a Marlboro Lights pack for the smoker condition because it is a brand with a well-known logo and package design. Moreover, the Lights pack is grey/gold, which makes it less salient and more similar to the stimuli in the other experimental conditions than the traditional red pack. We provide illustrations in Online Appendix A.

warmth and competence for both candidates (i.e., 3.07 to 3.56 on 1-5 Likert scales). In the videos, the actors were dressed professionally and strictly followed the scripts in response to interview questions. We also provided instructions on non-verbal behaviors, and created materials with both actors on the same day so that they could observe each other and align their behaviors. We recorded several versions of each video clip, and selected the ones that looked realistic, and were of similar duration and quality across actors and experimental conditions.

Interview Simulation. Participants completed the informed consent form and started the interview simulation by reading a description of their role as assistant HR manager at a local bank. They were then asked to imagine arriving at work in the morning, and watched a video shot in first-person that simulated the experience of walking toward and ultimately entering an office building. On their way, participants simulated crossing paths with an individual, played by the majority or minority actor, who was shown waiting outside while smoking a cigarette, vaping, or checking his cellphone. Following this, participants received a job description and were informed that the first task of the day involved interviewing a pre-selected candidate for a social media manager position. Participants then watched another video clip in first-person perspective where the job applicant, who turned out to be the same individual seen outside, knocked on the door, entered the office, said “hello”, shook their hand, sat down, and put a black leather folder along with either a cigarette pack, vaping device, or cell phone on the desk. At this point, participants provided their initial impressions. Then, they had the opportunity to “ask” the applicant four questions. For each of the four questions, participants could choose either an easy question such as: “Tell me about a project that you managed from start to finish”, or a difficult one such as: “Tell me about a work project for which you did not respect the deadline that was set”. Once a question was chosen, participants watched the applicant response clip. The

approximately two-minute long clips featured our response quality manipulation. As such, participants watched either all four good- or all four average-quality responses. Applicant responses across each pair of questions were based on the same work experience, with content adapted to fit the easy versus difficult question chosen and the strong- versus average-response quality manipulation. Participants provided their final candidate assessments after watching the fourth response clip. Finally, participants responded to questions related to their demographics, attitudes toward smoking and vaping, and the manipulation checks. We provide sample screenshots to illustrate what our simulation looked like in Online Appendix A.

Measures. We measured initial impressions with a five-item (α = .90) scale adapted from past interview research (e.g., Roulin, Bangerter, & Levashina, 2014). We used items such as: "Based on a first impression, I would evaluate this candidate positively", and assessed responses on 1-5 Likert scales. We measured final applicant evaluations with a similar five-item (α = .96) scale (e.g., "Overall, based on the interview, I would evaluate this candidate positively"). We assessed question difficulty by the number of difficult questions, between 0 and 4, asked by participants during the interview. Finally, we measured participants' attitudes towards smoking and vaping using four-item (α = .97 and .98) seven-point semantic differential scales from Roulin and Bhatnagar (2018), with items anchored by unfavorable/favorable, negative/positive, dislike/like, and bad/good in order to control for any effects of these stable attitudes on candidate evaluations (see Online Appendix D for a list of items used in the study).

Manipulation Checks. To ensure that respondents paid attention to the video content and manipulation, we asked them: "What was the person that you encountered on your way in to the office doing?", with four possible responses (i.e., the three conditions: using a cellphone, smoking a cigarette, smoking an electronic cigarette; and a foil: waiting for the bus). Overall,

82% participants responded correctly, although more so in the control (93%) and smoker (86%) conditions than in the vaper condition (67%), $F(2, 606) = 27.83$, $p < .01$. We also asked whether the person encountered outside was the same as the applicant. Eighty six percent of participants responded correctly, with no significant difference across conditions, $F(2, 603) = 1.04$, $p = .35$.

Results

We present descriptive statistics and correlations among key variables in Table 1. We tested our hypotheses using path analysis, with maximum likelihood estimations in STATA 14, and built a model aligned with our interview simulation (Figure 1). Specifically, we constructed paths from two of our manipulated variables (i.e., the candidate's smoker, vaper, or control status, and majority or minority ethnic group), attitudes towards smoking and vaping, and relevant interaction terms to initial impressions. This was followed by a path from initial impressions to the number of difficult questions asked, as well as from initial impressions, number of difficult questions, and (manipulated) response quality to final evaluations. Our model demonstrated a good fit to the data, and clearly surpassed the cut-off rules-of-thumb that are commonly cited (e.g., Hu & Bentler, 1999 - CFI > .90, RMSEA < .08), with $X^2 = 28.65$, $p = .10$, $X^2/df = 1.43$, RMSEA = .03; CFI = .98; TLI = .96, SRMR = .02.

We found support for Hypotheses 1a and 1b, with more negative initial impressions of applicants that were smokers or vapers than non-smokers. We observed significant and negative paths from both smoker ($b = -.68$, $SE = .15$, $p < .01$) and vaper ($b = -.58$, $SE = .16$, $p < .01$) to initial impressions. Interestingly, the effect of smoking status on initial impressions was a main effect, and was not moderated by interviewers' attitudes towards smoking or vaping. Results from an ANOVA further illustrate the difference in initial impressions between our three conditions, $F(2,605) = 19.14$, $p < .01$, with smokers receiving the lowest evaluation ($M = 3.06$,

SD = .75), followed by vapers (*M* = 3.21, *SD* = .79), and the control condition (*M* = 3.52, *SD* = .73). Post-hoc tests confirmed that the differences between smoker and control ($p < .01$, $d = .62$) and between vaper and control ($p < .01$, $d = .41$) were both significant and of medium size, while the difference between smoker and vaper was small and non-significant ($p = .14$, $d = .20$).

We found no support for Hypotheses 2a and 2b, that initial impressions would be particularly negative for applicants that are both from an ethnic minority group and smokers or vapers. Indeed, we did not find any interaction between majority status and being a smoker ($b = .14$, $SE = .15$, $p = .33$) or majority status and being a vaper ($b = .04$, $SE = .15$, $p = .78$). We also did not find a main effect of majority status ($b = -.01$, $SE = .11$, $p = .92$), suggesting that minority and majority applicants received similar initial impressions[2]. Our data also did not support Hypotheses 4a and 4b. Indeed, interviewers' initial impressions were not associated with asking more difficult questions ($b = -.06$, $SE = .05$, $p = .30$), and the number of difficult questions was not associated with interviewers' final evaluations of the candidate ($b = -.02$, $SE = .04$, $p = .56$). And, correlational data showed that question difficulty was unrelated to the applicant being a smoker ($r = -.02$, $p = .41$) or vaper ($r = -.02$, $p = .68$).

Finally, we found support for Hypotheses 5a and 5b, with interviewers' final evaluations being positively related to both initial impressions ($b = .50$, $SE = .05$, $p < .01$) and applicant response quality ($b = 1.29$, $SE = .08$, $p < .01$). Importantly, our model confirms that first impressions (that are more negative for smokers and vapers) were significantly associated with final evaluations, even when response quality was included in the analysis. Although not related to our hypotheses, we examined whether initial impressions and response quality interacted to predict final evaluations using PROCESS (model 1). We found a significant interaction, $b = -.32$,

[2] Results from a between-subject ANOVA further confirmed the non-significant double jeopardy effect (smoking condition x majority condition interaction), $F(2, 593) = 0.46$, $p = .63$, partial $\eta^2 = .002$, observed power = .13.

SE = .10, p < .01, suggesting that the effect of initial impression on final evaluation is stronger when applicants provide average (vs. strong) responses[3]. We also conducted an ANOVA to examine differences in final evaluations across the three conditions, $F(2,604) = 6.15$, $p < .01$, and found that smokers received the lowest evaluation ($M = 3.43$, $SD = 1.24$), followed by vapers ($M = 3.64$, $SD = 1.22$), and the control condition ($M = 3.85$, $SD = 1.22$). Post-hoc tests confirmed that the difference between the smoker and control was significant but small-to-medium in size ($p < .01$, $d = .34$), whereas differences between vaper and control ($p = .20$, $d = .17$) and smoker and vaper ($p = .19$, $d = .17$) were smaller and non-significant[4].

Discussion

Results from our interview simulation in Study 1 replicated recent scenario-based findings suggesting that applicants identified as cigarette smokers are devalued in the hiring process (Roulin & Bhatnagar, 2018). We found that interviewers' initial impressions were more negative for smokers compared to non-smokers. Lowered initial impressions were also found for vapers compared to non-smokers, but not to the same extent as for smokers. Thus, Study 1 findings provide initial evidence for reactions to vaping in the selection context and suggest that this too is a stigmatized behavior, although not (yet) to the same extent as smoking traditional cigarettes (e.g., Hart, 2017; Keane et al., 2017). These results are mostly in line with Type I processes and their impact on interviewers' initial impressions (Derous et al., 2016a). Interestingly, the impact of smoking status on first impressions was independent of interviewers' attitudes towards smoking or vaping despite generally unfavorable attitudes within our sample

[3] See Online Appendix I for interaction plots

[4] We note that participants' age, gender, ethnicity, or smoking/vaping status were unrelated to our main variables (except for Caucasian participants who provided slightly lower final evaluations, $r = -.08$). We also tested our model with path analysis using a sub-sample that only consisted of participants with hiring experience, as well as another analysis with a sub-sample composed of participants who passed the manipulation check. In both cases, the results were almost identical to the results with the full sample (see Online Appendix E).

(i.e., *M* = 2.36 and 3.22 on a 1-7 scale). Moreover, the minority applicant did not receive harsher evaluations. In other words, we did not find support for a "double jeopardy" effect (Barnum et al., 1995; Berdahl & Moore, 2006) for ethnic minority candidates that were also smokers or vapers.

Study 1 went beyond initial impressions by examining interviewers' questioning strategies during the (simulated) interview and evaluations at the end of it. This allowed us to empirically examine additional important parts of the dual-process model of interviewer bias (Derous et al., 2016a). We did not find support for interviewer engagement in Type II justification or rationalization processes in that no relationships between initial impressions or smoking status and the difficulty of questions asked emerged. However, we did find Type II updating based on response quality. Further, results also confirmed that interviewers' initial impressions serve as Type I anchors for final interview judgments (Derous et al., 2016a; Dougherty et al., 1994). Even as interviewers incorporated new information and adapted their assessments based on response quality, initial impressions continued to impact final evaluations, likely due to Type I confirmation. In this fashion, interviewers gave worse evaluations to smokers and (to a lesser extent) vapers than non-smokers at interview-end even when response content stayed the same. The significant interaction effect of initial impressions and response quality on final evaluations further suggested that the anchoring effect was weaker when applicants provided stronger, non-confirmatory, responses, thereby indicating engagement in Type II updating. Overall, Study 1 results suggest that reactions toward smokers and vapers are not just limited to first impressions. They also impact overall evaluations, and thus the opportunity to obtain employment.

Study 2

Study 2 was a simplified version of the prior video-based job interview simulation, and incorporated only the ethnic majority candidate. Business students completed the study in an office using a computer equipped with eye tracking technology. This second study retested Hypotheses 1, 4, and 5, while additionally testing Hypotheses 3 and 6.

Method

Sample. Respondents were 154 business students from a large university in Western Canada who participated in exchange for bonus course credit. The mean age was 21.6 (*SD* = 4.1). The sample was 52% male and 48% female, 36.4% Caucasian, 45.5% Asian, 9.1% Black, 9.1% from other ethnicities, and 61.7% employed (mostly part-time). Although only 25.2% of respondents had previous experience in a hiring role, 71.2% had completed at least one human resource management course. Moreover, 24.5% were smokers and 12.5% were vapers.

Design. We used a truncated 3x2 between-subjects design. We manipulated smoking status and response quality as in Study 1, but removed the majority/minority condition (i.e., we used only the majority applicant). Participants were randomly assigned to one of the six conditions.

Material & Interview Simulation. We relied on the same video material and interview simulation as in Study 1, with two major differences in addition to the design difference discussed above. First, participants completed the study in an office, one participant at a time, under the supervision of a trained research assistant. The in-office portions of the videos were shot within the same office in order to maximize realism of the simulation for study participants. Second, an eye tracker (Tobii Pro X2-60) was used to capture exactly where participants were looking while watching the videos (e.g., by capturing how much/often they looked at the pack of

cigarettes), with a sampling rate of 60 Hz[5]. This type of eye tracker is unobtrusive and was installed on the lower frame of a 24" computer screen. We included a cover story to limit the risk of participants behaving differently, such as not looking at key items, due to the presence of the eye tracker. Before the actual study, we told participants that the eye tracker was there to capture their reactions to print ads that the school was pre-testing for its MBA program. We showed two ads for a few seconds, and then included a fake "stop" icon that participants had to click on before moving forward to the main study, thus making them believe that the eye tracker was not intended for measurement during the interview simulation. We debriefed participants as to the real purpose of the eye tracker at the end of the study.

Measures. We used the same measures as in Study 1, and obtained similar levels of reliability (see Table 2). In addition, we analyzed eye tracker data using the Tobii Pro Studio software. The eye tracker continually records where participants look on the screen during the study. We thus designed "areas of interest" for each video by drawing rectangular frames around the key stigmatizing object, such as the cigarette that the candidate smokes outside the building or the cigarette pack on the interview table. The three objects (cigarette/pack, vaping device, cellphone), and the areas of interest around them, were of similar size and color to help avoid strong bottom-up effects of attention. We used the Tobii Pro Studio software to compute the number of visits participants made within the areas of interest (i.e., the eye-tracker data) during two key stages of the interview: (1) prior to making initial impression ratings (with the stigmatizing object visible for a total of about 12 seconds); (2) during the interview (with the object visible for a total of about 518 seconds) [6].

[5] With measures collected approximatively every 35 milliseconds. See Online Appendix B for more information about our eye tracking materials.
[6] See Online Appendix B for more details about characteristics of the AOIs, and Online Appendix C for illustrations.

Manipulation Checks. We used the same manipulation check items as in Study 1. Overall, 76.8% of participants responded correctly to the "What was the person doing" item (with 70% for the control, 94% for the smoker, and 67% for the vaper conditions, respectively), $F(2, 152) = 6.65$, $p < .01$. And, 87.7% responded correctly to the "Was it the same person" item, with no difference between conditions, $F(2, 152) = 0.31$, $p = .74$.

Results

Table 2 presents descriptive statistics and correlations among key variables for Study 2. As in Study 1, we tested our hypotheses using path analysis, with maximum likelihood estimations in STATA 14. We built one model including the full sample (similar to the one used in Study 1) to test Hypotheses 1, 4, and 5 (see Figure 2). Our model showed a good fit to the data and surpassed commonly cited cut-offs, with $X^2 = 9.50$, $p = .79$, $X^2/df = .68$, RMSEA = .00; CFI = 1.00; TLI = 1.00, SRMR = .04. To avoid making inappropriate comparisons due to the different stimuli used (Orquin & Holmqvist, 2018), we did not directly compare eye tracking data across conditions. Instead, we built separate models for the smoker ($N = 50$) and vaper ($N = 49$) conditions, including for eye tracking data to test Hypotheses 3 and 6 (see Figure 3). Both models fit the data well, with $X^2 = 8.29/7.92$, $p = .31/.34$, $X^2/df = 1.18/1.13$, RMSEA = .06/.05, CFI = .96/.96, TLI = .92/.92, SRMR = .09/.08 for the smoker and vaper conditions respectively.

We found additional support for Hypothesis 1a, but support was more limited for Hypothesis 1b. We observed a significant negative path from smoker to initial impressions ($b = -.59$, $SE = .22$, $p < .01$). The relationship was in the expected direction for the path from vaper to initial impressions, but remained marginally significant ($b = -.38$, $SE = .22$, $p = .08$). As in Study 1, there was a main effect of smoking status on initial impressions that was not moderated by interviewers' attitudes towards smoking or vaping. Results from an ANOVA further illustrate the

difference in initial impressions across our three conditions, $F(2,152) = 5.54$, $p < .01$, with smokers receiving the lowest evaluation ($M = 2.90$, $SD = .60$), followed by vapers ($M = 3.02$, $SD = .63$), and the control condition ($M = 3.29$, $SD = .58$). Post-hoc tests confirmed a medium-to-large and significant difference between smoker and control ($p < .01$, $d = .66$) and a medium and significant difference between vaper and control ($p < .05$, $d = .45$). The difference for smoker and vaper was small and not significant ($p = .31$, $d = .20$).

We found support for Hypothesis 3a, with a significant negative path between the attention paid to the stigma (i.e., number of visits in the area of interest) prior to the interview and initial impressions in the smoker condition ($b = -.11$, $SE = .04$, $p < .01$). Interestingly, we also found a significant path between interviewers' attitudes towards smoking and attention paid to the stigma prior to the interview ($b = -.70$, $SE = .26$, $p < .01$). Interviewers with more negative attitudes towards smoking looked more at the applicant smoking or the cigarette pack prior to the interview, resulting in more negative initial impressions. In contrast, we found no support for Hypothesis 3b, with no relationship between the attention paid to the stigma prior to the interview and initial impressions for vapers ($b = -.00$, $SE = .04$, $p = .99$).

As in Study 1, our main path analysis for Study 2 did not provide support for Hypotheses 4a and 4b. Indeed, interviewers' initial impressions were not associated with asking more difficult questions during the interview ($b = -.00$, $SE = .13$, $p = .99$), and the number of difficult questions was not associated with interviewers' final evaluations of the candidate ($b = .05$, $SE = .07$, $p = .41$). Moreover, correlational data suggests that question difficulty was unrelated to the applicant being a smoker ($r = -.07$, $p = .37$) or vaper ($r = .12$, $p = .12$). Our main model supported Hypotheses 5a and 5b, with interviewers' final evaluations being positively related to both their initial impressions ($b = .30$, $SE = .10$, $p < .01$) and the quality of applicants' responses ($b = 1.10$,

SE = .13, $p < .01$). Similar to Study 1, results from supplementary analyses using PROCESS (model 1) showed a significant interaction, $b = -.45$, *SE* = .21, $p < .05$, again suggesting that the effect of initial impressions on final evaluations is stronger when applicants provide average versus strong responses[7]. We also conducted an ANOVA to examine final evaluations in our three conditions, but found no significant difference, $F(2,152) = 0.15$, $p = .85$, with *d* values ranging from .04 to .11. Finally, we found no support for Hypothesis 6. Interviewers that looked more at the cigarette pack ($b = .02$, *SE* = .01, $p = .09$) or vaping device ($b = .02$, *SE* = .01, $p = .08$) during the interview did not evaluate the applicant more negatively at the end of the interview. Interestingly, interviewers' attitudes towards smoking or vaping were also not associated with the number of times they looked at the pack or device during the interview[8].

Discussion

Overall, results of Study 2 largely replicated those of Study 1. As in Study 1, we found that interviewers formed less favorable initial impressions of smokers and, to a lesser extent, vapers (at a significant level in Study 1, and marginally significant level in Study 2). In addition, eye-tracking data uncovered a potential attentional mechanism that triggers initial impressions of smokers (but not vapers), thus providing additional evidence for the role played by Type-I processes within the pre-interview phase (Derous et al., 2016a). More precisely, our findings highlighted that the more interviewers looked at visible cues of the smoking stigma (i.e., the cigarette pack) before the interview, the more negative their first impressions were. However, we

[7] See Online Appendix I for interaction plots.

[8] We note that participants' gender and smoking/vaping status were unrelated to our main variables, but Caucasian participants formed more negative initial impressions ($r = -.23$) and asked fewer difficult questions ($r = -.17$). We also conducted a path analysis with only the participants that passed the manipulation check. Results were quite consistent with the full sample, although the path between first impressions and final evaluation was not significant ($p = .12$), whereas the path between vaper and first impressions was ($p = .04$). See Online Appendix F for details. We also found that participants' attention to the stigma cues (i.e., cigarette pack or vaping device) decreased through the course of the interview, with more visits in the areas of interests when the applicant answered the first vs. subsequent questions. This change, however, was unrelated to final evaluations (see Online Appendix G for details).

did not find similar effects for vapers. This may be because our students were less familiar with the vaping device than a cigarette pack, although a subsequent question posed to half the sample showed that over 80% were able to correctly identify the device based on an explicit standalone picture. Another explanation may be that students were less attentive to the experimentally manipulated stigmatizing features than the MTurk sample, as has been observed in past research (Hauser & Schwarz, 2016). In addition, final evaluations were not associated with eye tracking data collected during the interview. This suggests that interviewers were more focused on listening to applicant responses and less on the stigmatized features at this stage of the interview.

Results of Study 2 further confirmed that the difficulty of questions asked by interviewers was unrelated to initial impressions or final evaluations. However, as in Study 1, final evaluations were influenced by both initial impressions and response quality, in line with both anchoring (Type I) and updating (Type II) processes respectively (Derous et al., 2016a). Also as found in Study 1, the Type I anchoring effect was weaker when applicants provided stronger responses. This was further indicative of Type II updating. Further, comparing our findings across both studies suggests that smokers are indirectly evaluated more negatively because of worsened initial impressions and anchoring effects. Yet, the indirect effect for vapers was smaller and marginally significant in Study 2. These effects were smaller overall in Study 2 than in Study 1. Moreover, we did not find any difference when directly comparing final evaluations across the three conditions (contrary to Study 1 where the sample size was larger). Overall, such results and discrepancies may be attributable to the sample used here. For instance, a large majority of the students (71%) had completed at least one HR course as part of their curriculum, and 37% had completed 2+ courses. Such classes feature topics such as employment discrimination, biases, and risks associated with inaccurate first impressions in selection, thereby

making these students more likely to update their initial judgments instead of engaging in confirmatory or rationalization processes. Besides, these results may also be due to a smaller sample size, lesser attention paid by students as opposed to MTurk participants, or lower familiarity with the vaping device as compared to the cigarette pack.

General Discussion

Key Findings and Contributions

Our examination of interviewer judgments of job applicants identified as smokers or vapers makes theoretical and methodological contributions to the personnel selection, tobacco control, and stigmatization literatures in important ways. Cigarette smoking is widely stigmatized, including within the workplace, today (Kim et al., 2017; Schmidt et al., 2013). This stigmatization suggests greater risks of discrimination for the high proportion of the population that still smokes. While numerous job applicant features such as age, weight, and race or ethnicity are considered as stigma inducing in the personnel selection literature (Derous et al., 2009; Finkelstein et al., 1995; Finkelstein et al., 2007), the treatment of smokers has largely been ignored. In this research we selected key propositions from Derous et al.'s recent (2016a) dual-process framework to empirically test for biases toward smokers and vapers, that are a growing demographic, within job interviews[9].

Within this framework, interviewers' initial impressions of stigmatized applicants are largely the result of intuitive and automatic Type I characterizations triggered by the sight of visible stigma cues such as unintentionally exposed cigarette packs or vaping devices, or behaviors like smoking or vaping near the interview venue. Weaker first impressions of traditional smokers across both studies, and to a smaller degree vapers, with significant effects

[9] See also a summary of our hypotheses, findings, and how they related to a selection of Derous et al.'s (2016) original propositions in Online Appendix H.

for a broader US sample (Study 1) and marginally significant ones for a younger Canadian sample (Study 2), relative to non-smokers largely provide empirical support for pre-interview components of the Derous et al. (2016a) framework (specifically, Propositions 1a and b, and 4a). These findings also reiterate and extend results from emergent personnel selection research (Roulin & Bhatnagar, 2018). Our results are likely reflective of broader public attitudes toward smoking and vaping, with vaping being generally considered as less harmful and therefore more acceptable than cigarette smoking (Booth et al., 2017). However, while vapers are not as stigmatized as smokers are today, these perceptual differences may dissipate as the health consequences of vaping become clearer and social attitudes around vaping undergo subversion (Hart, 2017). In fact, the latest U.S. Surgeon General's report advises of the rise in vaping and associated health dangers for youth and young adults (U.S. Department of Health and Human Services, 2016). We also found smaller effects for the Canadian student sample than for the U.S. general sample especially with respect to vapers. The smaller effects could be attributed to a smaller sample size or more limited attention paid by the student sample. And, contrary to research highlighting the greater popularity of vaping amongst younger people (Emery et al., 2014), our student sample (M_{age} = 21.6 years) reported slightly more negative attitudes toward vaping than the older general sample (M_{age} = 34.1 years).

Further, we tested for and did not find evidence of harsher interviewer judgments of smokers and vapers that also belonged to a minority ethnic group within our general U.S. sample. The issue of double jeopardy, where job applicants pay a price for smoking and vaping behaviors as well as ethnic affiliation, was not found in our study. However, rather than indicating a lack of intersectional double jeopardy, this result may instead be an artifact of the specific ethnic minority portrayed, and attributes of the actor who possessed strong English

language and professional skills. Further, the actor was also selected for general equivalence with the majority group candidate in physical presentation and attributes related to warmth and competence. Another possibility is that the general downward shift in the socioeconomic composition of smokers (Bayer & Stuber, 2006) makes even ethnic majority smokers a doubly stigmatized group: both for their smoking behaviors as well as their lower actual or perceived social status. In that sense, both minority and majority smokers and vapers may equally fall victim to a double jeopardy.

In line with the dual-process framework (Propositions 9-10 in Derous et al., 2016a), initial impressions anchored interviewer judgments and continued to drive final evaluations (Type I), even after adjusting for more deliberate and thoughtful Type II assessments based on the quality of interview responses. While this demonstrates how insidious these biases are, we also found that the anchoring effect was diluted for strong- versus average-quality responses. We thus demonstrate that the societal stigma surrounding smoking and to some degree vaping, found in interpersonal settings (Seiter et al., 2010) or in the workplace (Greenberg, 1994) also makes its way within the hiring process. Importantly, in both studies the effect of response quality on final evaluations was stronger than the effect of first impressions (and thus indirectly smoking status). As such, Type II processes might play a larger role than Type I processes in interviewers' final judgments, which is positive both for organizations in terms of the validity/quality of hiring decisions and applicants in terms of fairness. However, worryingly for smokers and, to a smaller degree, vapers, exemplary performance on the interview itself can still be insufficient for fully overcoming automatic biases and ultimately receiving a job offer.

In addition, participants across both samples did not engage in conscious (Type II) justification or rationalization processes during the interview stage in the form of asking more

difficult questions of the smoker or vaper as was expected based on the dual-process framework (Proposition 6 in Derous et al., 2016a). It could be that participants did not evaluate the proposed questions differently in terms of difficulty, felt constrained by the two options presented and had a preference for asking different questions, or that other rationalization processes are at play. For instance, participants may have focused on elements of applicants' responses that matched their initial assessment. It is also possible that interviewers' conscious rationalization processes are less impacted by applicants' stigmas than envisioned by Derous et al. (2016a).

Moreover, in line with Type-I processes (Proposition 2), eye-tracking results in the Canadian sample showed that interviewers with lower attitudes toward smoking, but not vaping, paid greater attention to the stigmatizing cue for smokers, which in turn lowered initial impressions. However, attention to smoking cues during the interview did not influence final assessments. This may be due to potential habituation over the longer period of cue exposure during the interview (about 518 seconds) versus prior to initial assessments (12 seconds). Indeed, eye tracking research suggests that initial gaze direction is more relevant than subsequent eye movement for assessing Type I processes (Innocenti, Rufa, & Semmoloni, 2010). In addition, in past eye tracking selection research (Madera & Hebl, 2012), the stigmatizing feature was present on the job applicant's face. The "area of interest" where attention was assessed was thus in the vicinity where respondents likely focused (i.e., the face) as they viewed a static picture of a hypothetical candidate. In our study, the stigma inducing pack of cigarettes/vaping device was placed on the desk, and thus away from the respondents' focus (i.e., likely on the actor's face as interview questions were addressed). As such, our research suggests that the location of applicants' stigma can represent a potential boundary condition to the dual-process framework (Derous et al., 2016a), which is consistent with the importance of stigma visibility (Summers et

al., 2018). And, the greater acceptance of vaping than smoking cigarettes (Booth et al., 2017) may help explain the non-significant indirect effect of attitudes toward vaping on first impressions via greater attention paid to the potentially stigmatized cue (i.e., the vaping device).

This research also offers novel methodological contributions to the selection literature. We developed a video-based interview simulation approach, allowing us to precisely capture multiple judgments and decisions in the pre-interview, interview, and post-interview phases, and thus test several portions of the dual-process model of interviewer bias. This approach arguably possesses external validity given the rising popularity of asynchronous video interviews in practice (Langer et al., 2017). It is also in line with recent calls for the use of video-based experiments to better simulate interactions in organizational settings (Heath & Luff, 2018), and capture psychological phenomenon that are indicative of subtler forms of biases that might otherwise go unnoticed such as body movement (Congdon, Novack, & Goldin-Meadow, 2018). In addition, we relied on eye tracking technology to potentially capture subtle and quick Type-I processes (i.e., through fast gaze movement). To our knowledge, this is only the second time that this technology has been used for examining stigmatization within selection. And, unlike Madera and Hebl (2012) who used a static picture of a candidate and an audio recording of the interview, we used dynamic content in the form of video responses for enhancing realism and better replicating real interviews.

Practical Implications

Our findings have practical implications for both hiring organizations and job applicants. Interviewer biases against smokers and vapers leave organizations vulnerable not just to losing out on qualified employees, but also hiring discrimination based on leisure activities that are unrelated to job performance (Morrow & Leedle, 2002). There is recognition that organizations

need to be just in their hiring decisions (Arvey & Renz, 1992), and some legislative protections designed to ban discrimination against smokers have emerged (Schmidt et al., 2013). This is particularly important given that smoking rates are often higher in groups that are already marginalized, such as the less educated, certain ethnic minorities, or people low on the socioeconomic scale, and thus most in need of protection (Bayer & Stuber, 2006). We find stronger biases towards smokers and vapers within initial rather than final evaluations. We also demonstrate that initial impressions are used as anchors for final evaluations that albeit undergo some adjustment when interview performance is of high quality. As such, organizations could institute interventions for hiring personnel such as bias-sensitivity training that provides techniques for correcting biased initial impressions.

For smokers and, to a lesser extent, vapers, persistent stigmatization lowers access to valuable employment opportunities regardless of how well they perform during the interview. The negative health consequences of cigarette smoking are incontrovertible today, and smokers are well advised to break the habit. Other than smoking cessation, smokers (as well as vapers) would help themselves by making such behaviors less visible in physical as well as virtual spaces (e.g., within social media postings that are frequently reviewed by hiring managers; Berkelaar, 2017; Roulin & Bangerter, 2013). The fear of being found out, however, is a heavy burden to carry. Ultimately, applicants should receive training that makes them aware of public reactions to smoking and vaping, and the negative consequences for employability.

Limitations and Future Research Directions

The controlled nature of our experiments, fictional scenarios used, and the online and student samples confer freedom from extraneous noise and confounding factors, allow tests for causality, and are commonly employed in stigmatization research in selection (e.g., Madera &

Hebl, 2012; McElroy et al., 2014). At the same time, these also introduce artificiality that limits the external validity and generalizability of our findings. The novel video-based interview simulation, patterned on widely used asynchronous video interview assessments, was developed here to mitigate these issues. While our video stimuli simulate reality better than written scenarios in past research (e.g., Roulin & Bhatnagar, 2018) and students and professional hiring managers are often similarly biased (e.g., Luxen & Van De Vijver, 2006), ultimately field investigations with hiring managers and professional recruiters (along the lines of the audit method; Derous et al., 2012) are needed.

Our stimuli, such as the pack of cigarettes on the interview table, were also very visible, which likely limits the realism of the study and prevents us from clearly disentangling the effects of applicant smoking status from (voluntary or inadvertent) displays of the stigmatized stimuli. In other words, interviewers might not penalize all smokers, but just those that make this aspect of their identity transparent either at the time of the interview or even in other venues such as social media posts uncovered during the cyber-vetting process. As such, future research could also examine the effects of subtler or indirect signs of smoking status. For instance, eye-tracking research could examine physical stigmatized attributes like skin discoloration, damaged teeth, or lines around the lips. This was not possible in our studies as our actors were non-smokers in their personal lives. Alternatively, researchers could examine the revealing role of cigarette smells in line with recent examinations of odor in the workplace (Riach & Warren, 2015). Studies could also explore applicant awareness of the damage caused by displays of smoking status, and the actual strategies employed for hiding this status.

In Study 2, we use participants' visits in areas of interest as indicators of automatic Type I processes. This is consistent with our theoretical framework (Derous et al., 2016a). The fact

that visits during the pre-interview stage were associated with initial impressions, while visits during the interview stage were not associated with final evaluations, is also consistent with other eye-tracking research suggesting that initial gaze direction is a relevant indicator of Type I processes (e.g., Beach & McConnel, 2018; Innocenti et al., 2010). That being said, the literature continues to debate the use of eye tracking data for measuring cognitive processes (Orquin & Holmqvist, 2018), and distinguishing between automatic versus deliberate information processing. Given this, we cannot completely rule out the alternative explanation that the visits, instead, indicate conscious Type II processes.

Our studies were designed to empirically test several key propositions from Derous et al. (2016a). However, further research is needed for examining additional propositions (e.g., the role of contextual factors like the presence versus absence of organizational anti-discrimination policies). Moreover, we did not find support for several propositions, including some related to Type II processes during the interview. For instance, we found no evidence for Type II information gathering via more difficult questions posed to smokers. However, our interview questions were designed as being easier versus more difficult, and not to probe the kinds of negative associations people make with smokers in the workplace (such as taking more breaks or other counterproductive behaviors; Roulin & Bhatnagar, 2018). Future research could allow interviewers to choose questions that address these concerns in order to better approximate rationalization processes as proposed by Derous et al. (2016a), or find other ways to more directly examine the specific psychological processes at play.

Further, future researchers can also examine differences in smoker and vaper stigmatization in different national labor markets. Societal attitudes toward smokers in the U.S. and Canada are markedly poor today, but this may not be the case in other countries where anti-

smoking legislations are relatively lax and smoking prevalence and attitudes are higher. Further, longitudinal tracking of biases against vaping is also warranted as health implications of vaping emerge and public attitudes associated with it potentially deteriorate. Future research could also examine interviewers' reactions to smokers and vapers as compared to (or in combination with) other stigmatized features. Although we found no interaction with ethnicity, we only compared Caucasian versus East Asian applicants. Future studies could examine other ethnicities (e.g., African-American, Hispanics, East Asians) or explore other stigmas (e.g., age, gender, tattoos, etc.). Finally, the very small and non-significant effect of ethnicity (and lack of a double-jeopardy) in Study 1 is somewhat inconsistent with existing research, and may have arisen based on socially desirable responding. Replication and further investigations would thus be warranted.

Conclusion

Negative public sentiments around cigarette smoking have deepened over the past five decades, resulting in the creation of a stigmatized social class of smokers. The extensive societal discrimination faced by smokers is also found in organizations. And, although vaping is increasingly popular, perceptions surrounding it are also in flux. This research builds on, and empirically tests key principles of Derous et al.'s (2016) dual-process model of interviewer bias. Results show that interviewers form more negative first impressions of smokers and, to a lesser extent, vapers (a Type I automatic reaction). These effects carry on through the interview, with interviewers giving worse final evaluations to smokers and vapers (illustrative of Type I processes) despite adjustments for interview performance quality and diluted biased assessments where performance quality is strong (illustrative of Type II processes). We thus demonstrate the persistence of "smokerism" and, to a lesser degree, "vaperism" biases that originate at the start of

the interview and persist till the end. These findings are critical given the importance of interviewers' final judgments in personnel selection.

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Table 1.

Descriptive Statistics and Correlations Among Main Variables (Study 1)

	Mean (SD)	Scale	1	2	3	4	5	6	7	8	9
1. Smoker	-	1/0	-								
2. Vaper	-	1/0	-.47**	-							
3. Majority/minority	-	1/0	.02	-.01	-						
4. Response quality	-	1/0	-.05	.02	-.01	-					
5. Attitudes smoking	2.36 (1.57)	1-7	.06	.02	.06	.03	(.97)				
6. Attitudes vaping	3.22 (1.78)	1-7	.00	.01	.07	.02	.54**	(.98)			
7. First impression	3.26 (0.78)	1-5	-.18**	-.05	.04	.00	.10*	.18**	(.90)		
8. Nb. difficult questions	1.89 (1.03)	0-4	.03	-.02	-.00	.07	-.02	-.09*	-.04	-	
9. Final evaluation	3.64 (1.24)	1-5	-.12**	.01	-.02	.53**	-.04	.04	.32**	.00	(.96)

Note: N = 609 MTurk workers. Reliabilities are presented on the diagonal. * $p < .05$, ** $p < .01$.

Table 2.

Descriptive Statistics and Correlations Among Main Variables (Study 2)

	Mean (SD)	Scale	1	2	3	4	5	6	7	8
1. Smoker	-	1/0	-							
2. Vaper	-	1/0	-.48**	-						
3. Response quality	-	1/0	.00	-.01	-					
4. Attitudes smoking	1.85 (1.04)	1-7	.05	.04	.04	(.91)				
5. Attitudes vaping	2.48 (1.41)	1-7	-.04	.08	-.08	.60**	(.96)			
6. First impression	3.07 (0.62)	1-5	-.20*	-.06	-.01	.13	.11	(.83)		
7. Nb. difficult questions	1.86 (0.99)	0-4	-.07	.12	.12	-.01	-.00	-.00	-	
8. Final evaluation	3.59 (0.99)	1-5	.04	.04	.56**	.11	-.04	.18*	.12	(.92)

Note: N = 155 Business students. Reliabilities are presented on the diagonal * $p < .05$, ** $p < .01$.

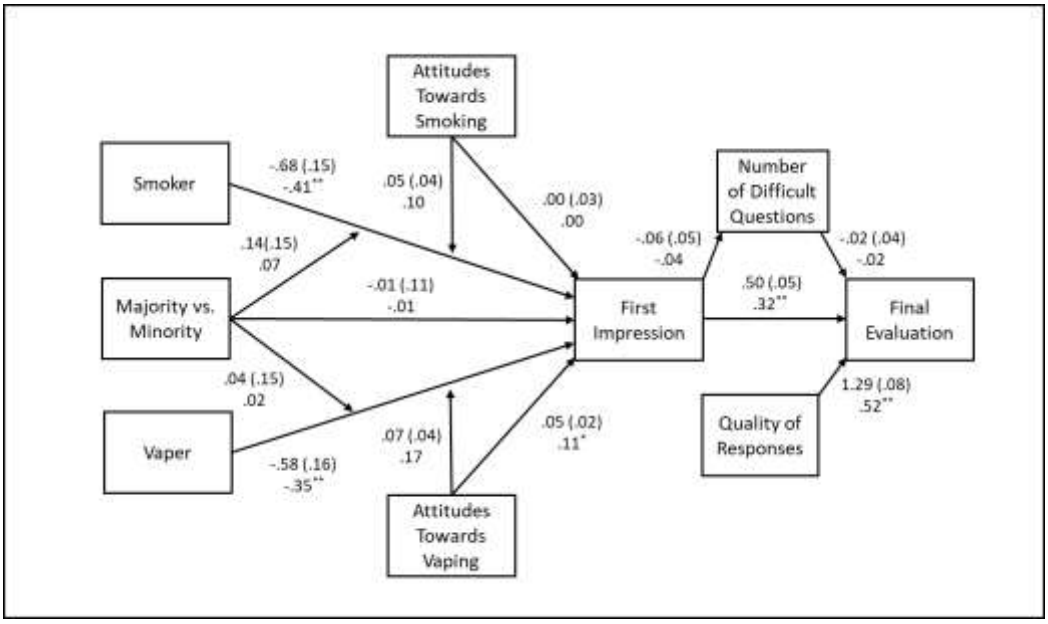


Figure 1. Path Model for Study 1.

Note: $N = 603$; Unstandardized *b* values and standard errors are presented above the standardized beta values. * $p < .05$, ** $p < .01$. Model fit: $X^2 = 28.65$, $X^2/df = 1.43$, $p = .10$; RMSEA = .03; CFI = .98; TLI = .96, SRMR = .02.

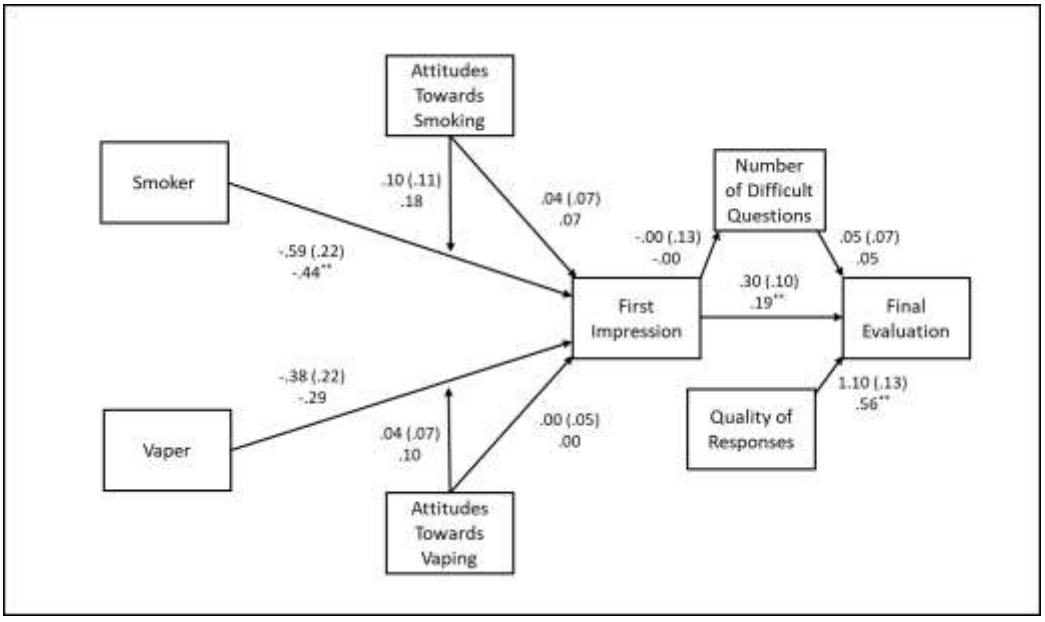


Figure 2. Path Model for Study 2 (without eye tracker data).

Note: $N = 154$; Unstandardized *b* values and standard errors are presented above the standardized beta values. † $p < .10$, * $p < .05$, ** $p < .01$. Model fit: $X^2 = 9.50$, $X^2/df = .68$, $p = .79$; RMSEA = .00; CFI = 1.00; TLI = 1.00, SRMR = .04.

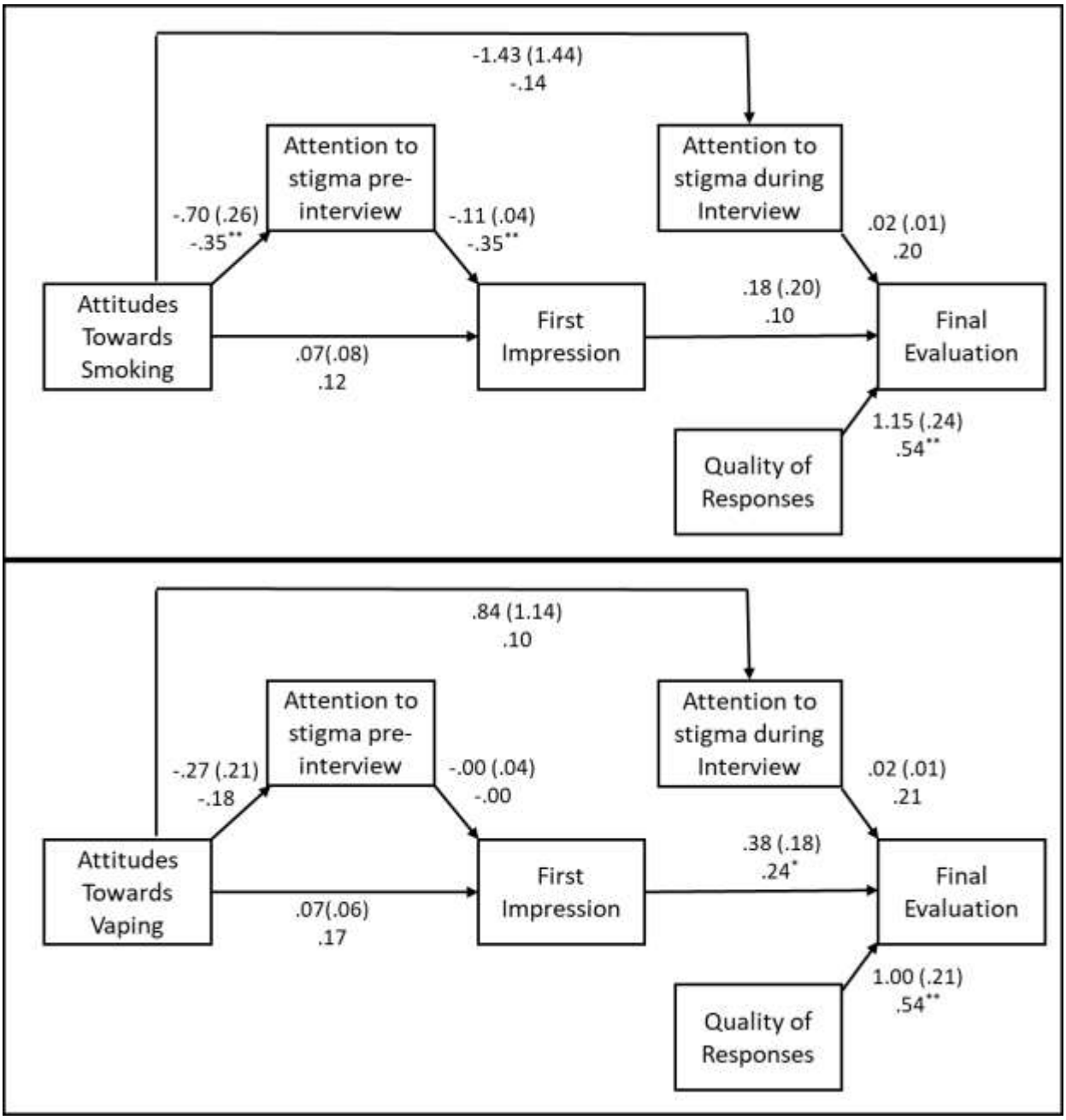


Figure 3. Path Model for Study 2 with eye tracker data for the smoker (top) and vaper (bottom) conditions.

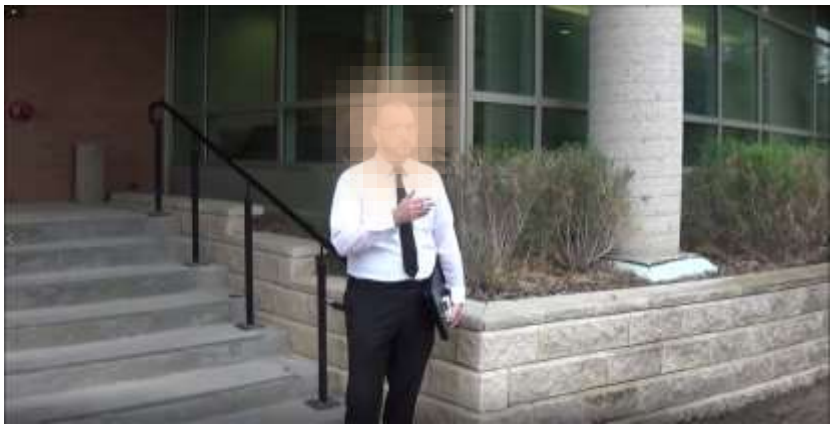
Note: N = 50 (smoker) and 49 (vaper); Unstandardized *b* values and standard errors are presented above the standardized beta values. * $p < .05$, ** $p < .01$. Model fit for smoker/vaper: X^2 = 8.29/7.92, X^2/df = 1.18/1.13, p = .31/.34; RMSEA = .06/.05; CFI = .96/.96; TLI = .92/.92, SRMR = .09/.08

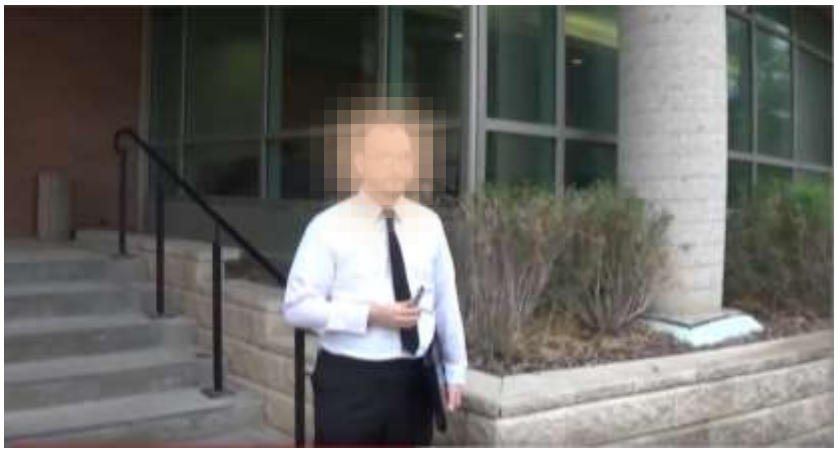
Smoked Out? Examining the Impact of Applicant (E-)smoking Habits in Job Interviews - Online Appendices

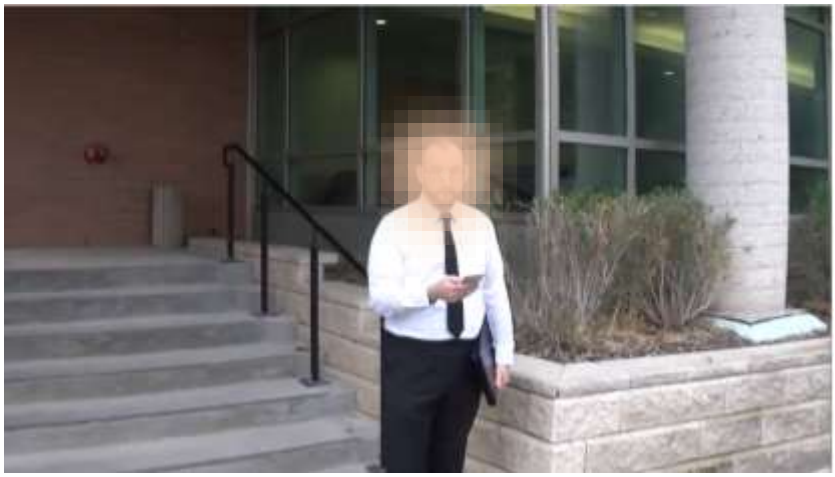
Appendix A: Illustration of Video Material

Note: The face of the actors/applicants have been blurred here to ensure their anonymity.

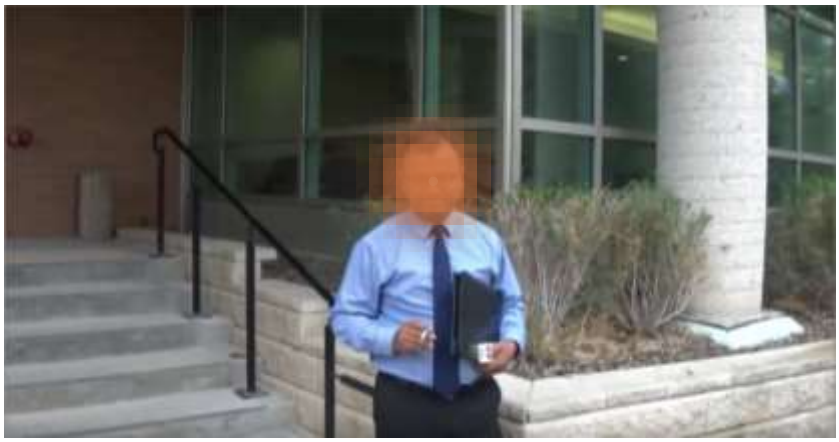
Majority Candidate – Screenshots from first interaction with the applicant outside of the building with the cigarette, e-cigarette, and control/phone conditions (videos used in both studies):

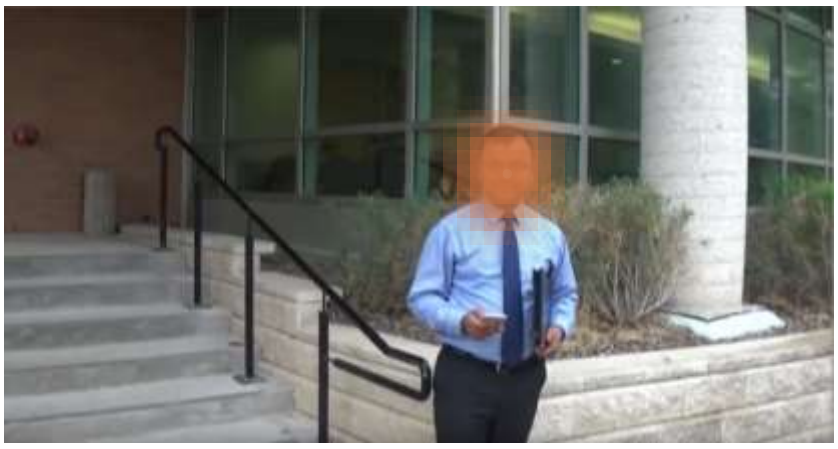




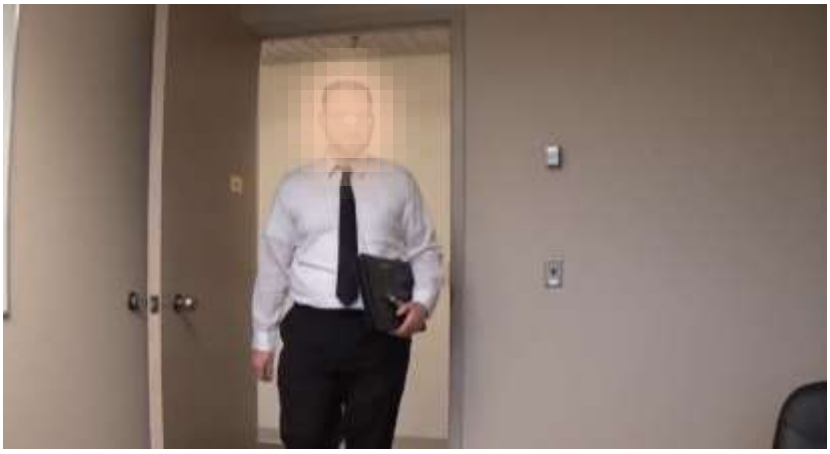


Minority Candidate – Screenshots from first interaction with the applicant outside of the building with the cigarette, e-cigarette, and control/phone conditions (videos used in Study 1 only):

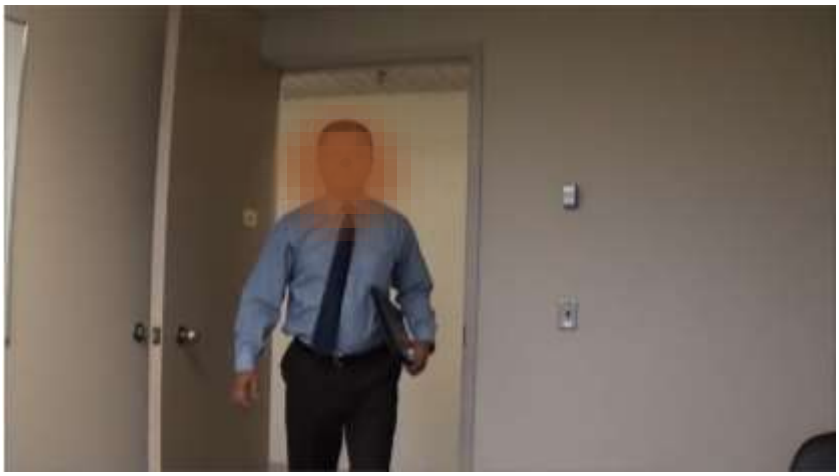




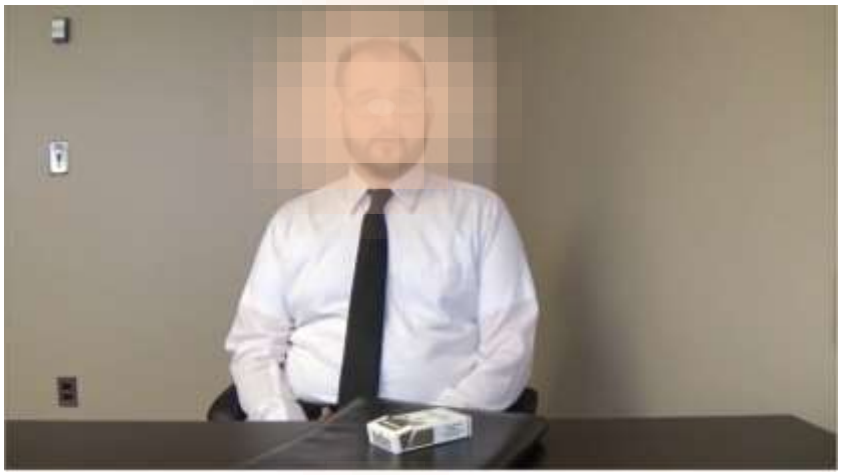
Majority Candidate – Screenshots from applicant entering the hiring manager's office with the cigarette, e-cigarette, and control/phone conditions (videos used in both studies):

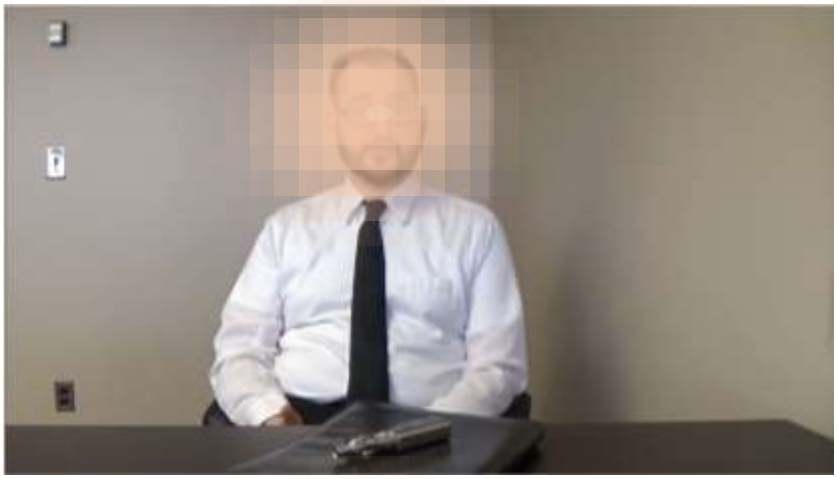


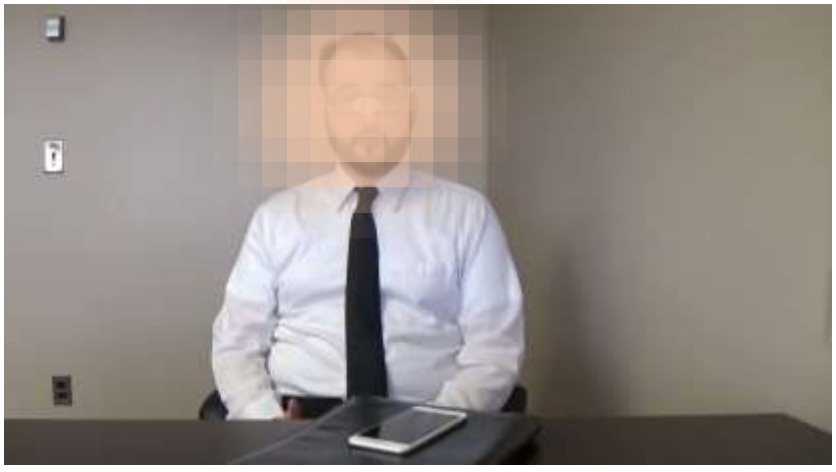
Minority Candidate – Screenshots from applicant entering the hiring manager's office with the cigarette, e-cigarette, and control/phone conditions (videos used in Study 1 only):



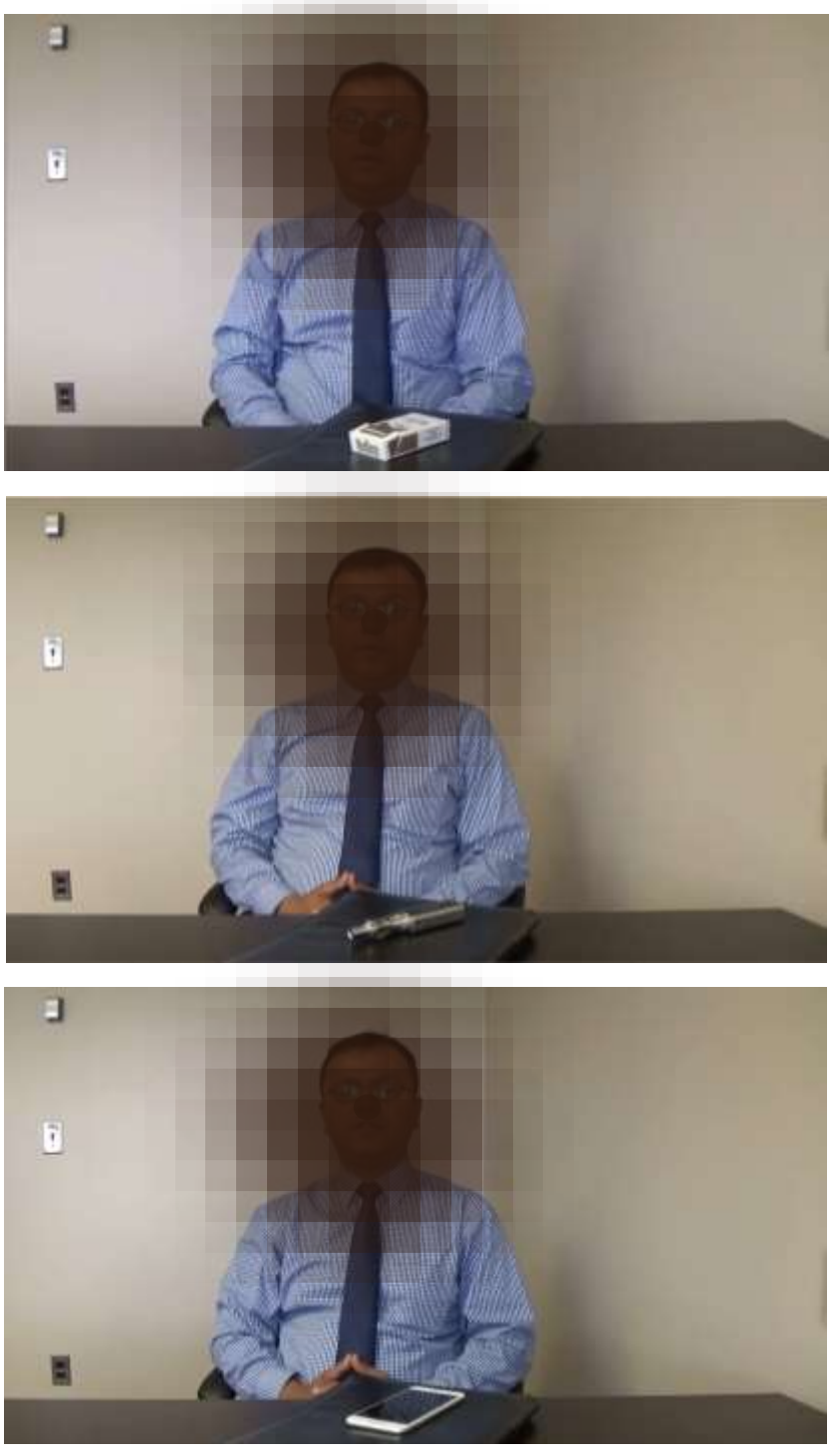
Majority Candidate – Screenshots from interview response videos in the cigarette, e-cigarette, and control/phone conditions (videos used in both studies):







Minority Candidate – Screenshots from interview response videos in the cigarette, e-cigarette, and control/phone conditions (videos used in Study 1 only):



Appendix B: Information about the Eye-Tracking Experiment (Study 2)

Location and Room	- The data collection took place in an office located in the business school of the university where participants were recruited. The office was located at the end of a hallway/building, and there was thus very little noise or traffic in the area. - To increase the realism of the interview simulation, the room was the same as the one where the interview videos were shot (with the same angle/perspective, so that the participants could imagine being in the role of the interviewer). - The room had only two small windows located behind the participant, with the blinds closed to avoid any impact of daylight, reflection, etc. - Participants were seated at a desk with a computer and the unobtrusive eye-tracking device attached to the screen. - The same trained Research Assistant was present in the room for all participants/sessions. She followed a strict protocol to provide instructions, answer questions, launch the eye tracker, do the calibration, and fix potential issues. - No other individual was present in the room, and no interruption (by other individuals, phone calls, etc.) was observed. - Participants wore a headset (from the Skull Candy brand) designed to ensure high-quality sound from the videos and cancel external sounds. Participants wore it throughout the experiment, except when receiving the initial instructions.
Eye Tracking Model and Software	- Eye tracker: Tobii Pro X2-60 with a sampling rate of 60Hz that ensures high-quality tracking of large gaze angles - up to 36° (detailed information available here: https://www.tobiipro.com/product-listing/tobii-pro-x2-60/) - Software: Tobii Pro Studio version 3.4.7 was used to collect data, prepare AOIs, and compute the number of visits (detailed information available here: https://www.tobiipro.com/product-listing/tobii-pro-studio/)
Computer and Monitor	- To ensure that the videos and eye tracking device would run smoothly, we used a Dell Latitude E5570 computer with a quad core 2.7 GHz processor, 16 GB RAM, and 1 TB of hard drive to store the eye tracking data/recordings. - We used 24.1'' HP ZR2440w monitor with a resolution of 1920 x 1200 @60Hz. - The distance between the participant and the screen was approximately 2-3 feet (60-90cm) - The Tobii Pro X2-60 eye tracking system does not require a chin rest. It is designed so that participants can be tracked while moving their head freely positioned at a natural distance from the screen. This creates a distraction-free test environment, promoting natural human behavior.

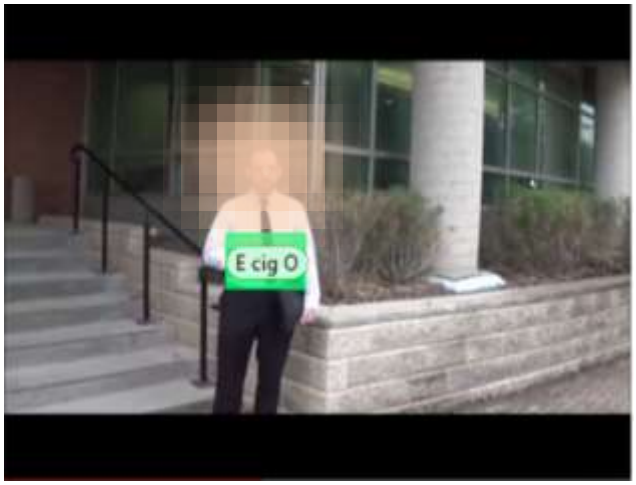
Calibration	- We used Tobii's automatic calibration protocol only at the beginning of the experiment. - The Tobii software calibration takes about 10 seconds. It includes five calibration points. They are five red dots appearing in random order at the four corners and at the center of the screen, with a light grey background. - In the rare cases the calibration failed, the calibration was done again immediately. - There was no recalibration during the experiment because participants were unaware that eye tracking data was collected during the selection simulation (see the "cover story" described in the paper) and we did not want to interrupt the simulation.
Participants' vision	- We did not test participants' vision. - Some participants wore glasses or contact lenses. Yet, all participants except one were able to complete the calibration task. - For one participant who wore heavy-correction glasses, the eye tracker was unable to calibrate. The participant was allowed to proceed with the study, but the eye-tracking data from this participant was excluded from the analyses.
Areas of Interest (AOIs)	- Creation of AOIs o We used the Tobii Pro Studio software to physically draw the AOIs around the stimuli. We allowed some space around the stimuli (see sizes below) to compensate for a potential lack of precision, capture fixations in the proximity, and avoid false negatives. Because there was no other object in proximity (e.g., the stimuli positioned on a black leather folder was the only object on the interview table), this approach should not lead to attributing fixations to other objects. In addition, in line with recommendations from the literature (e.g., Orquin, Ashby, & Clarke, 2016), we did define the AOIs based on the video material but *before* observing any data. o Because the simulation included videos, we used the Tobii dynamic AOI tool. The stimuli (and thus AOI) moved for the two short initial videos (i.e., when the applicant was seen outside of the building and then entering the office). However, the stimuli did not move (as they were positioned on the table) for the four longer videos (i.e., when the applicant answered interview questions). o To ensure that the AOIs were of similar sizes across conditions, stimuli, and participants, we initially drew AOIs for one condition, and copied and pasted them for the following condition. We then moved and slightly adjusted them to perfectly fit the stimuli in that condition/ video. o We note that although participants took different amounts of time to read instructions, respond to questions, etc. we only collected eye tracking data (i.e., activated the AOIs in the software) for the video parts of the experiment, where the duration of the video-clips (and

	thus exposure time to the stimuli) was fixed across participants (see Orquin & Holmqvist, 2018). We also made sure that the length of the videos was similar (within 2-3 seconds for clips of approximately 120 seconds) across conditions. - The size of the AOIs in pixels was the following: o Smoker - outside: 111x66 for the cigarette and 94x74 for the pack o Smoker - entering office: 196x133 for the pack o Smoker - during interview: 274x159 for the pack o E-smoker - outside: 124x86 for the vaping device o E-smoker - entering office: 231x150 for the vaping device o E-smoker - during interview: 273x153 for the vaping device o Control - outside: 137x89 for the phone o Control - entering office: 233x150 for the phone o Control - during interview: 281x151 for the phone - The relative size of AOIs to the stimuli could not be computed for the videos outside of the building or entering the office, because the participant and the camera were moving, and thus the size of the stimuli varied throughout the video clip. - However, the size of the stimuli was stable for the interview phase, and the relative AOI/stimuli size could be computed: o Size of the cigarette pack: 132x61 → Ratio = 5.4 o Size of the vaping device: 141x45 → Ratio = 6.6 o Size of the phone: 152x65 → Ratio = 4.3 - As can be seen with the measurements above, we strived to keep the AOIs similar in size across conditions, even if the stimuli itself were of slightly different sizes.
AOIs Aggregation and Fixation Filters	- We used the default fixation filter (Tobii I-VT Filter) which checks if two gaze points possess a speed (or velocity of the directional shifts of the eye) below a certain threshold. We used the default values of the Tobii I-VT Filter, which discards fixations shorter than 60ms. - Another function of the fixation filter in the Tobii Pro Studio software is to check if the sample points are valid, that is, discarding points with no eye position data, or where the system has only recorded one eye and failed to identify whether it is the left or the right eye and is unable to estimate the final gaze point. - A dominant eye test was not carried out. We utilized the default settings of the Tobii eye tracker, and the averages of the left and right eye data were used within our analyses. - Please see the Tobii manuals (on www.tobiipro.com) for specific information about the I-VT filter and the method used to determine the default values.

Data exclusion	- Except for the participant for whom calibration was impossible (see above), no other respondent was excluded from the analyses.
References	- Orquin, J. L., Ashby, N. J., & Clarke, A. D. (2016). Areas of interest as a signal detection problem in behavioral eye-tracking research. *Journal of Behavioral Decision Making, 29*, 103-115. doi:10.1002/bdm.1867 - Orquin, J. L., & Holmqvist, K. (2018). Threats to the validity of eye-movement research in psychology. *Behavior Research Methods, 50*, 1645-1656. doi:10.3758/s13428-017-0998-z

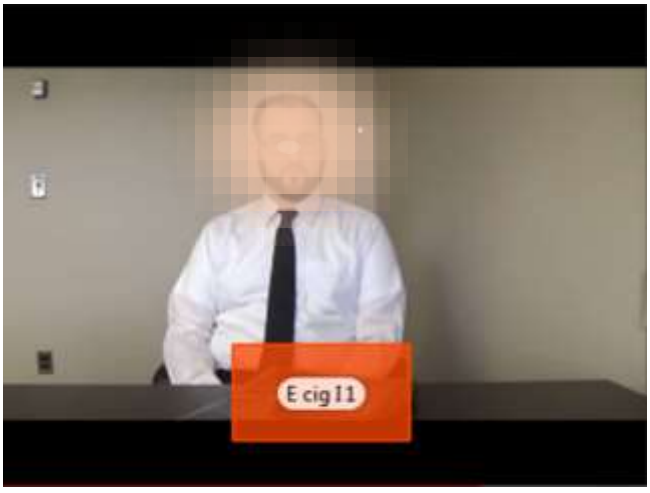
Appendix C: Illustrations of Areas of Interest (AOIs) Using Tobii Pro Studio

For the first video clip (crossing path with the applicant outside of the building:



For the second video clip (applicant entering the hiring manager's office):

For the remainder of the video clips (applicant answering interview questions):



Appendix D: Main Measures Used in Our Studies

Initial Impressions (1-5 Likert scales):
How much do you agree with each of the following statements?

- Based on a first impression, I would evaluate this candidate positively
- The applicant possesses the necessary knowledge, skills, and abilities to perform the duties of the position he interviews for
- The applicant is a good match or fit with the organization and its current employees
- I believe this applicant can achieve a high level of performance in the job
- Based on a first impression, it was a good idea to invite this candidate for an interview

Choice of Interview Questions:

- Q1:
  - Tell me about a project that you managed from start to finish (easy)
  - Tell me about a work project for which you did not respect the deadline that was set (hard)
- Q2:
  - Tell me about a professional success that you are proud of (easy)
  - Tell me about your worst professional failure (hard)
- Q3:
  - Tell me about a collaboration that you had with someone from outside your company (easy)
  - Tell me about a time that you had a conflict with your boss (hard)
- Q4:
  - Tell me about a time when you reached or exceeded your goals (easy)
  - Tell me about a time when you received a negative evaluation from your boss, a colleague, or a customer (hard)

Final Evaluations (1-5 Likert scales):
Based on the interview, how would you evaluate that candidate for the Social Media Manager job?
How much do you agree with each of the following statements?

- Overall, based on the interview, I would evaluate this candidate positively
- The applicant possesses the necessary knowledge, skills, and abilities to perform the duties of the position he interviewed for
- I believe this applicant can achieve a high level of performance in the job
- Based on the interview, I would offer the job to this candidate

Attitudes Towards Smoking/Vaping (7-point sematic differential scales):
Please indicate your attitude toward smoking cigarettes/smoking electronic cigarettes (i.e. vaping).

- Unfavorable - Favorable
- Negative – Positive
- Dislike - Like
- Bad - Good

Test of Participants' Familiarity with E-Cigarettes:

To ensure that participants were familiar with e-cigarettes/vaping devices, the second half of participants in Study 2 were showed pictures of the three objects below (including the same model of vaping device used in the e-smoker condition of our study) and asked to write down the name of the objects.

Of the 72 participants who completed this test, 58 (i.e., 80.5%) correctly identified the vaping device (i.e., as an “electronic cigarette”, “e-cigarette”, “vape”, or “vaping device”).

We note that we used this test as way to confirm the general level of familiarity of participants, but we kept the participants who failed to recognize the device in the dataset and analyses. We did this for two reasons: First, we only included this test for the second half of the sample (i.e., the data collection took place over two university semesters) and thus had this information only for some of the participants. Second, we further examined the correct identification specifically for participants in the e-smoker condition for that semester of data, and found that 24 of the 25 individuals correctly identified the vaping device. As such, lack of familiarity with the vaping device was likely not an issue for the e-smoker condition.

Appendix E: Path Analysis Results for Study 1 for (a) the Full Sample, (b) Participants with Hiring Experience Only, and (c) Participants Passing the Manipulation Check Only

	Full sample (*N*=603)				Hiring experience only (*N*=231)				Only passing manipulation check (*N*=497)			
	b	SE	Beta	95% CI	b	SE	Beta	95% CI	b	SE	Beta	95% CI
Final evaluation												
Constant	1.30	.19	1.05	.92 ; 1.68	.70	.30	.53	.12 ; 1.27	1.15	.21	.92	.74 ; 1.55
First impression	.50	.05	.32**	.40 ; .61	.62	.08	.38**	.46 ; .78	.53	.06	.33**	.42 ; .64
Nb difficult questions	-.02	.04	-.02	-.01; .05	-.06	.06	-.05	-.17; .06	-.06	.04	-.05	-.15; .02
Response quality	1.30	.08	.52**	1.14 ; 1.45	1.36	.13	.52**	.12 ; 1.28	1.32	.21	.53**	.74 ; 1.55
First impression												
Constant	3.38	.10	4.34	3.18 ; 3.58	3.52	.15	4.34	3.22 ; 3.82	3.40	.11	4.33	3.20 ; 3.61
Smoker	-.68	.15	-.41**	-.96 ; -.39	-1.08	.22	-.61**	-1.50 ; -.65	-.72	.15	-.45**	-1.02 ; -.43
Vaper	-.58	.16	-.35**	-.89 ; -.28	-.92	.22	-.55**	-1.36 ; -.48	-.75	.17	-.42**	-1.08 ; -.41
Attitudes smoking	.00	.03	.00	-.05 ; .05	-.03	.05	-.07	-.12 ; .05	,02	.03	.04	-.04 ; .08
Attitudes vaping	.05	.02	.11*	.00 ; .10	.09	.04	.20*	.01 ; .16	.04	.03	.10	-.01 ; .09
Majority	-.01	.11	-.01	-.22 ; .19	-.17	.18	-.10	-.52 ; .19	-.03	.11	-.01	-.25 ; .19
Smoker x Attitudes	.05	.04	.10	-.03 ; .14	.15	.07	.27*	.01 ; .29	.05	.05	.10	-.04 ; .14
Vaper x Attitudes	.07	.04	.17	-.00 ; .15	.08	.06	.20	-.03 ; .20	.10	.04	.21*	.01 ; .18
Smoker x Majority	.14	.15	.07	-.15 ; .43	.22	.25	.09	-.27 ; .71	.15	.16	.08	-.15 ; .45
Vaper x Majority	.04	.15	.02	-.25 ; .33	.13	.24	.07	-.33 ; .60	.10	.17	.04	-.23 ; .44
Nb difficult questions												
Constant	2.08	.18	2.14	1.72; 2.44	209	.30	2.29	1.50; 2.68	2.13	.20	2.17	1.75; 2.51
First impression	-.05	.05	-.04	-.16; .05	-.05	.09	-.04	-.23; .13	-.07	.06	-.06	-.19; .04
Fit indices												
X^2				28.66				25.19				24.11
X^2/df				1.43				1.26				1.21
RMSEA				.03				.03				.02
CFI				.98				.97				.99
TLI				.96				.95				.98
SRMR				.02				.03				.02

Note: ** $p < .01$, * $p < .05$

Appendix F: Path Analysis Results for Study 2 for (a) the Full Sample, (b) Participants Passing the Manipulation Check Only

	Full sample (*N*=154)				Only passing manipulation check (*N*=119)			
	b	SE	Beta	95% CI	b	SE	Beta	95% CI
Final evaluation								
Constant	2.26	.36	2.30	1.55 ; 2.96	2.61	.43	2.73	1.77 ; 3.44
First impression	.30	.10	.19**	.09 ; .50	.18	.12	.12	-.05 ; .41
Nb difficult questions	.05	.07	-.05	.07; .18	-.04	.07	-.04	-.11; .18
Response quality	1.10	.13	.56**	1.55 ; 2.96	1.08	.15	.56**	.79 ; 1.36
First impression								
Constant	3.21	.16	5.16	2.89 ; 3.52	3.31	.19	5.30	2.94 ; 3.67
Smoker	-.59	.23	-.44**	-1.04 ; -.14	-.77	.25	-.60**	-.1.26 ; -.28
Vaper	-.38	.22	-.29	-.81 ; .06	-.51	.25	-.37*	-.99 ; -.02
Attitudes smoking	.04	.07	.07	-.09 ; .18	.01	.09	.02	-.16 ; 19
Attitudes vaping	.00	.05	.00	-.10; .10	.00	.05	.01	-.10 ; .11
Smoker x Attitudes	.10	.11	.18	-.11 ; .31	.16	.12	.28	-.08 ; .41
Vaper x Attitudes	.04	.07	.10	-.10 ; .19	.05	.09	.10	-.13 ; .22
Nb difficult questions								
Constant	1.87	.40	1.84	1.08 ; 2.66	1.36	.45	1.35	.48 ; 2.25
First impression	-.00	.13	-.00	-.25 ; .25	.18	.15	.11	-.11 ; .46
Fit indices								
X^2				9.50				18.45
X^2/df				0.68				1.32
RMSEA				.00				.05
CFI				1.00				.93
TLI				1.00				.88
SRMR				.04				.06

Note: ** $p < .01$, * $p < .05$

Appendix G: Additional Eye Tracker Results (Study 2)

	Total Visit Counts in the AOIs			
	Smoker	Vaper	Control	Full sample
	Descriptive statistics (Mean and SD)			
Original AOIs				
Total interview	12.86 (10.51)	12.14 (12.32)	9.12 (11.08)	11.39 (11.37)
Detailed AOIs				
Question #1	4.92 (4.84)	4.10 (4.33)	2.81 (2.86)	3.93 (4.15)
Question #2	2.82 (3.23)[a]	2.61 (3.49)[a]	2.08 (2.71)	2.50 (3.15)[a]
Question #3	2.04 (2.49)[a]	2.37 (2.93)[a]	1.50 (1.72)[a]	1.96 (2.43)[ab]
Question #4	1.90 (2.20)[ab]	1.86 (2.98)[ab]	2.15 (6.53)	1.97 (4.35)[a]
Total interview	11.68 (9.90)	10.94 (11.77)	8.54 (10.03)	10.36 (10.60)
	Repeated-measure ANOVAs (*F*-values)			
Differences between the four questions	7.57**	6.37**	3.75*	14.50**
	AOIs stability (correlations)			
Total interview	.98**	.93**	.96**	.95**

Note: $N = 50$ (smoker), 49 (vaper), 51 (control), and 150 (full). Data and results based on new AOIs created independently by another trained research assistant (different from those presented in the main text, but with the same AOI sizes). AOIs' stability involves correlations between original AOIs (used in the main analyses) and the new AOIs (used for the new analyses here). ** $p < .01$ for correlations and ANOVAs. [a] significantly different from Q1 and [b] different from Q2 ($p < .05$) based on pairwise comparisons following the ANOVAs.

AOIs Visit Counts	Correlations with…		
	Attitudes towards smoking/vaping	First impression	Final evaluation
		Smoker Condition	
Question #1	-.16	-.06	.06
Question #2	-.02	-.01	.01
Question #3	-.10	.08	.09
Question #4	-.16	.02	.27
Total interview	-.15	-.05	.11
Change (Q1-Q4)	-.09	-.07	-.07
		Vaper Condition	
Question #1	.02	.04	.17
Question #2	.01	.29*	.16
Question #3	.09	.19	.36*
Question #4	.12	.03	.09
Total interview	.06	.16	.22
Change (Q1-Q4)	-.08	.02	.14

Note: $N = 50$ (smoker) and 49 (vaper). * $p < .05$.

Appendix H: Summary of Hypotheses, Associations with Propositions from the Dual-Process Theory, and Findings

Our Hypothesis	Proposition(s) in Derous et al. (2016)	Findings and Comments
Hypothesis 1: Initial impressions are more negative for applicants who are (a) traditional smokers and (b) e-smokers than for non-smokers.	Proposition 1a. Interviewer's initial impression formation of the applicant is a heuristic process that is driven by automatic Type 1 processes. Proposition 1b. Initial impressions are formed faster when there are strong cues available such as stigmatizing applicant characteristics. Proposition 4a. Based on the pre-interview information, interviewers form initial impressions about both stigmatized and non-stigmatized applicants relying on simplifying Type 1 heuristics.	H1a was supported in both studies. H1b was supported in Study 1 only. These are evidence for pre-interview ***Type I processes***. We examined this through the paths between (e-)smoking status and initial impressions. Participants formed more negative initial impressions of stigmatized applicants (i.e., for smokers and – to a lesser extent – e-smokers).
Hypothesis 2: Initial impressions are more negative for applicants who are both from an ethnic minority group and (a) smokers or (b) e-smokers.	N/A	H2 was unsupported.
Hypothesis 3: The more interviewers pay attention to cues of (a) smoking or (b) e-smoking prior to the interview, the more negative their initial impressions of the applicant.	Proposition 2. Behavioral, emotional, and cognitive impulses in response to the stigmatized applicants create a conflict with the interviewers' situational and task-specific goals, and therefore trigger conscious and rule-based processes aimed at overruling these impulses.	H3a was supported in Study 2 (pre-interview ***Type I process*** evidence), but H3b was not. We examined participants' impulses (i.e., Type I processes) for the pre-interview stage with the eye tracker data. Participants who paid more attention to the cigarette and/or pack prior to the interview (i.e., visited the AOIs more) formed more negative initial impressions of smokers (but this was not the

		case for the attention paid to the vaping device for e-smokers). However, we did not directly examine whether interviewers engage in Type II processes to overrule such impulses (which could entail trying not to look at the stigma).
Hypothesis 4a: The more negative interviewers' initial impressions are, the more they ask difficult questions of applicants. Hypothesis 4b: The more interviewers ask difficult questions of applicants, the more negative their final evaluations of applicants are.	Proposition 6. Interviewers will be less likely to update initial impressions (i.e., engage in confirmatory information processing) when they […] interview stigmatized applicants.	Both H4a and b were unsupported. No evidence for interview phase ***Type II processing***. We sought to capture rationalization/justification processes (i.e., self-fulfilling prophecies) during the interview stage through the choice of asking questions with different levels of difficulty to confirm initial impressions. However, we did not find support for this as the number of easy/difficult questions asked was unrelated to initial impressions of final evaluations. We note that we also tested more complex path models, which would theoretically better match the original proposition. For instance, we tested a model with smoking status also included as a moderator of the path between initial impressions and the number of difficult questions. However, neither the main effect of (e-)smoking status nor the interaction with initial impressions were significant. And the model fit was poor.

Hypothesis 5: Interviewers' final evaluations are positively related to (a) initial impressions and (b) the quality of applicants' responses.	Proposition 9. When making final evaluations of (stigmatized) applicants, interviewers will build on initial impressions that anchor their final evaluation. Proposition 10a/b. When making final evaluations of (non-)stigmatized applicants, interviewers will build on initial impressions and (fail to) adjust initial impressions in accordance to the interpretation of the information exchanged during the interview stage.	Both H5a and b were supported in both studies. Evidence for post-interview ***Type I and Type II processes***. We found clear support for the anchoring (***Type I processes***) effects in both studies with the significant paths between initial impressions and final evaluations. We also found evidence of adjustments (i.e., ***Type II processes***), with significant paths between quality of responses and final evaluations. We also tested a more complex path model, with smoking status also included as a moderator of the path between initial impressions and final evaluations. However, neither the main effect of (e-)smoking status nor the interaction with initial impressions were significant. And the model fit was also poor.
Hypothesis 6: The more interviewers pay attention to cues of (a) smoking or (b) e-smoking during the interview, the more negative their final evaluation of the applicant will be.	Not directly proposed in the model for the interview stage – but related to Proposition 2 listed above.	H6 was unsupported. No evidence for this additionally hypothesized interview phase ***Type I processing***. We examined this with eye tracker data during the interview stage. Participants who paid more attention to the cigarette pack or vaping device during the interview (i.e., visited the AOIs more) did not differ in their final evaluations.

Control variables	Proposition 3b. Interviewers' prejudiced attitudes and level of experience will increase Type 1 processes when forming initial impressions about stigmatized applicants, whereas similarity with the applicant and concerns about prejudice will decrease Type 1 processes.	We took this proposition into account (although did not develop specific hypotheses about it) in our path analyses by controlling for attitudes towards smoking/vaping (or their interaction with the smoking status) as predictors of initial impressions. This captures participants' level of prejudice towards (e-)smoking habits. We found limited evidence for this, with only a small main effect for attitudes towards vaping in Study 1.

Appendix I: Plots for Interactions between Initial Impressions and Response Quality on Final Evaluations