Priming Effects of LinkedIn Advertisements on Evaluations of Applicants

by

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ABSTRACT

Priming Effects of LinkedIn Advertisements on Evaluations of Applicants

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The purpose of this thesis was to explore the priming effects of LinkedIn advertisements on evaluations of applicants. Social media, such as LinkedIn, are now frequently used in personnel selection to screen job applicants (Caers & Castelyns, 2011; Zide, Ellman, & Shahani-Denning, 2014). However, the effects of relying on such tools for selection purposes are unknown. Moreover, LinkedIn contains advertisements, and advertisements can unintentionally bias later behaviours, due to priming (Harris, Bargh, & Brownell, 2009). Two experiments were conducted to study potential priming effects of LinkedIn advertisements on evaluations of applicants. In the first experiment, 104 participants evaluated three job applicants based on their LinkedIn profile, which contained different advertisements. In the second experiment, 510 participants evaluated only one applicant profile. Results showed that, in both experiments, the advertisements did not prime subsequent evaluations of applicants. Theoretical and practical implications are discussed.

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New technologies, such as social media, are now frequently used in personnel selection to recruit and screen potential job applicants (Caers & Castelyns, 2011). LinkedIn, for instance, is the most widely used professional networking website (Zide, Ellman, & Shahani-Denning, 2014). Although the popularity of social media cannot be denied, the effects of using these media for selection purposes are unknown. Could using social network sites for selection purposes be introducing bias in the selection process? Unlike conventional resumes, LinkedIn profiles contain advertisements, and previous research has shown that advertisements can unintentionally influence later behaviours (Halford, Gillespie, Brown, Pontin, & Dovey, 2004). Thus, LinkedIn advertisements could be a source of bias. Harris, Bargh, and Brownell (2009) suggested priming as a framework to explain advertisements' unintentional influence on individuals' behaviours. Similarly, LinkedIn advertisements could unintentionally influence or bias subsequent evaluations of applicants, due to priming. This two-study research project sought to explore the potential biasing effects of using social media for personnel selection; specifically, the priming effects of LinkedIn advertisements on subsequent evaluations of applicants' LinkedIn profiles.

Bias in personnel selection

The most important property of personnel selection methods is predictive validity (Schmidt & Hunter, 1998). Using selection tools with predictive validity leads to substantial increases in employee performance (Hunter, Schmidt, & Judiesch, 1990), which is a desirable outcome for organizations. Validity is thus central to the personnel selection process; however, biases can decrease validity. There is an important body of literature exploring different selection biases (Davison & Burke, 2000; Hosoda, Stone-Romero, & Coats, 2003; Olian, Schwab, & Haberfeld, 1988; Ziegert & Hanges, 2005). These studies or meta-analyses show that applicants' characteristics that should not be considered in selection may nevertheless bias hiring decisions.

For example, recruiters can be influenced by an applicant's name (Cotton, O'Neill, & Griffin, 2008), accent (Segrest Purkiss et al., 2006), gender (Luxen & Van De Vijver, 2006), race (Maass, Castelli, & Arcuri, 2000), age (Finkelstein, Burke, & Raju, 1995), and physical attractiveness (Bardack & McAndrew, 1985; Marlowe, Schneider, & Nelson, 1996) when making a hiring decision. These biases decrease the predictive validity of selection, because personal factors such as one's name or physical attractiveness do not predict future job performance, thus should not influence a recruiter's decision.

For decades, researchers have been investigating how to reduce bias in the employment interview (Schmidt & Hunter, 1998). Two widely cited literature reviews on interview validity (Mayfield, 1964; Wagner, 1949) suggested that the validity of interviews may be decreased due to the interviewers' inability to consistently interpret data, which leads to biased judgments of applicants. This decrease in validity was attributed in part to the interview's lack of structure. Since these classic literature reviews, efforts have been made to reduce biases and increase the validity of personnel assessment tools, particularly by structuring the interview (Campion, Palmer, & Campion, 1997; McDaniel, Whetzel, Schmidt, & Maurer, 1994). These studies have generated ample knowledge of the interview as a personnel selection tool and how biases can affect its predictive validity. However, new selection tools are now used by organizations and the effects of using these new tools are unknown. In fact, a growing number of organizations are using social media as assessment tools (Caers & Castelyns, 2011) and the predictive validity of these tools has yet to be studied. By using social media for selection purposes, are organizations creating selection biases instead of reducing them?

LinkedIn and social media: new selection tools

Social media is an umbrella term used to describe different software tools that create shareable user-generated content (O'Reilly, 2007; Sinclaire & Vogus, 2011). A type of social media that can be used in personnel selection is social network sites (SNSs). Boyd and Elison (2007) defined social network sites as:

> web-based services that allow individuals to (1) construct a public or semi-public profile within a bounded system, (2) articulate a list of other users with whom they share a connection, and (3) view and traverse their list of connections and those made by others within the system (p. 211).

Different social network sites are used for different purposes. For organizations, SNSs can be used to gain competitive advantage and to support different business functions, such as marketing (Brennan & Croft, 2012; Hong, 2012) and corporate communication (El-Haddadeh, Weerakkody, & Peng, 2012). Additionally, personnel selection is a business function that organizations are increasingly supporting with the use of SNSs. In fact, many organizations are now using SNSs as personnel assessment tools (Caers & Castelyns, 2011), especially the social network site LinkedIn (Zide et al., 2014).

LinkedIn is the largest, most popular professional networking website (Zide et al., 2014), with 313 million members in over 200 countries and territories. LinkedIn is used in a professional context; it focuses on professional information and encourages users to produce an abbreviated Curriculum Vitae (CV) and to establish professional connections (Papacharissi, 2009). LinkedIn users can display their abbreviated CV onto their profiles, which are strictly professional (Skeels & Grudin, 2009). There is evidence that LinkedIn is becoming increasingly popular as an assessment tool. For example, Caers and Castelyns (2011) surveyed over 350

Belgian recruiters and asked them about their use of SNSs for recruitment and selection. Of all respondents, 70% reported using LinkedIn to acquire more information about applicants.

Because social network sites are growing in popularity in the corporate world, the academic world is starting to show interest in these websites and their impact on the workplace (Aspridi, Kazantzi, & Kyriakou, 2013). The research on using LinkedIn for selection purposes remains scarce, although recent publications reveal a growing interest for this type of media in selection contexts. Zide, Ellman, and Shahani-Denning (2013), for instance, studied variables that recruiters value when looking at applicants' LinkedIn profiles. They found that elements such as spelling mistakes, completeness of information, and email address, among others, were identified by recruiters as key elements to focus on when making hiring decisions. Roulin and Bangerter (2013) examined the use of SNSs to judge an applicant's fit and found that LinkedIn is used by recruiters to infer person-job fit. These recent studies highlight a new and increasing interest in using LinkedIn for selection purposes, and suggest different ways in which the uses of LinkedIn for selection purposes can be studied (e.g. variables of interest on LinkedIn profiles, types of fit, etc.). Nevertheless, the effects of relying on media such as LinkedIn in the selection process remain unclear and must be explored further. Can LinkedIn exert biasing effects that would be detrimental to the selection process?

A potential bias could come from LinkedIn advertisements. Unlike more traditional assessment methods (e.g., resumes, interviews), LinkedIn contains advertisements. These advertisements can be found on LinkedIn profiles, home pages, in groups, etc., and are created by LinkedIn users to promote their company or product (https://www.linkedin.com/ads/). Previous research suggests that advertisements can have biasing effects (Halford et al., 2004). Specifically, advertisements can affect an individual's behaviours, without this individual being

aware of the influence on his or her behaviours. For example, Harris et al. (2009) found that food advertisements on television programs non-consciously influenced snacking behaviours, such that individuals who had watched the food advertisements later ate more snacks than individuals who had not watched the food advertisements, without being aware of doing so. The authors suggested priming as a framework to explain this non-conscious bias. Similarly, LinkedIn advertisements could prime recruiters' behaviours, potentially biasing their evaluations, which would decrease LinkedIn's validity as a selection tool.

Priming: a framework to explain bias

Priming has been defined differently by various scholars (Cramer, 1968; Lashley, 1951; Tulving, 1983) and priming definitions have evolved over time. Some scholars have defined priming in broader terms: "procedures that stimulate or activate some stored knowledge" (Higgins, 1996, p.134), or "activation of perceptual representations" (Dijksterhuis & van Knippenberg, 1998, p.865). A generally accepted, more specific definition of priming is *the temporary activation of an individual's mental representations by the current situational context, which exert passive, unintended consequences on subsequent thoughts, perceptions, feelings, or behaviours[1]* (Bargh & Chartrand, 2000). Mental representations are knowledge structures that guide one's understanding of the world (Bargh, Chen, & Burrows, 1996). Priming is a temporary activation of these mental representations, which, while activated, exert a passive effect on the individual.

For example, the mental representation of the concept of 'country' can be activated by music from this country. A study by North, Hargreaves, and McKendrick, (1999) found that background music can influence which types of wines are purchased in a supermarket. The

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[1] This definition was chosen for its specificity and relevance to the present research. It will be consistently used throughout the thesis.

authors of this study found that when French music was playing in the store, more French wines were sold, whereas when German music was played, more German wines were sold ($d = 1.81$, $N = 44$). Moreover, customers reported not being aware of the music, and not knowing why they chose French or German wine. In this case, the type of music (German vs. French) was a stimulus in the situational context that activated the mental representation of 'country', which in turn unintentionally influenced the customers' behaviours (choosing a bottle of wine from that country). In other words, priming happens when a stimulus present in someone's situational context (the prime) temporarily activates a mental representation (concept that is primed), which in turn unintentionally influences thoughts, feelings, or behaviours (the response).

Priming is defined as the *temporary* activation of an individual's mental representations by the current situational context. The temporary aspect of priming is crucial, because priming is concerned with how individuals on average react in a specific context, due to a specific prime. It is not concerned with individual differences, or predispositions to specific reactions. For instance, Dodge (1993) found that aggressive boys are more likely than other boys to perceive aggression, thus to behave more aggressively. This is because aggressive boys have a permanent activation of their mental representation of aggression, which makes them more likely to behave aggressively, in general. Thus, aggressive boys need not be primed to behave aggressively, because their mental representations of aggression are permanently activated. Priming, however, is the *temporary* activation of a mental representation. Aggression could be primed by activating mental representations of aggression, so that, on average, individuals would behave more aggressively, temporarily.

Conceptual priming

Mental representations are knowledge structures or internal categories that facilitate understanding and functioning (Bargh et al., 1996). A ground-breaking finding in priming happened four decades ago when Higgins, Rholes, and Jones (1977) showed that whole concepts, and not just specific words, could be primed. They found that prime words related to personality traits activated the mental representation of this personality trait, and not just of the words. Participants were first either exposed to words related to an adventurous and independent personality, or to words related to a reckless and aloof personality. They were then asked to read an ambiguous story about a character named Donald. Participants in the first condition (exposed to adventurous/independent words) formed more positive impressions of the character than did participants in the second condition (exposed to reckless/aloof words), although it was the exact same story. Unlike previous priming studies that only showed specific words could be primed, Higgins and his colleagues (1977) were able to demonstrate that the conceptual categories of 'independent' and 'aloof' were activated by these words. Indeed, participants did not use the words they had been exposed to (e.g. reckless, independent) to describe the character. Thus, mental representations of the traits 'aloof' or 'independent' were activated, and participants formed a negative or positive impression of the character. In sum, they showed that priming concepts, and not just words, is possible. This was the first of many *conceptual priming* studies. Conceptual priming is a priming research technique in which the mental representations that are activated are concepts, such as stereotypes or traits. Higgins et al.'s study (1977) is an example of conceptual priming, in which the concept is a personality trait (independent or aloof).

Conceptual priming is the priming research technique that is most relevant to the present research; however, other priming techniques exist. Mindset priming, for example, is a priming

technique in which the mental representations that are activated are not concepts, but mental procedures. What is primed is a way of thinking about information, also called a mindset. This mindset is activated in a first task, and is then carried over into a second, unrelated task. For example, Gollwitzer, Heckhausen, and Steller (1990) primed two different mindsets by asking participants to think about a personal problem and to either think of their problem's pros and cons (deliberative mindset) or to write a specific and detailed action plan on how to solve the problem (implemental mindset). In what seemed to be an unrelated task, participants were given a few lines from a fairy tale and asked to complete the story. Participants in the deliberative mindset condition were more likely to write about the protagonist's thoughts and considerations; whereas those in the implemental mindset condition were more likely to write about the protagonist's actions. Thus, the mindset that had been primed in the first tasked carried over into the second unrelated task, i.e., participants who had been primed to think incidentally completed the story in an incidental way. Conceptual and mindset priming are examples of priming techniques; they both activate a mental representation that exerts a passive influence on a later response, but they differ on which mental representations are activated (concepts vs. mindsets).

Category accessibility hypothesis

A mechanism that could explain priming is *category accessibility*. A contextual situation provides a wide array of environmental cues, and categories are used to help make sense of the world (Bruner, 1957). The categories that are accessible guide later behaviours or psychological responses, because these categories are used to encode information about the situation (Erdley & D'Agostino, 1988) and determine an individual's perception of events (Higgins & Kings, 1981). Consequences of priming can therefore be attributed to this increased accessibility (Higgins, 1996). In other words, the category accessibility hypothesis argues that being exposed to a

stimulus activates a mental category, which makes the category readily available and accessible in memory. This category accessibility determines how a situation is perceived, which influences how a person acts on this perception.

Since Higgins et al.' study (1977) many conceptual priming studies have supported the category accessibility hypothesis by showing that different concepts, such as traits and stereotypes, can be primed. In one study by Bargh et al. (1996), participants were given a scrambled word task, and had to create a coherent sentence from a string of words. In the two experimental conditions, the scrambled words were either related to the trait of rudeness or to the one of politeness. The priming stimuli for rudeness were words such as *aggressively*, *bold*, *rude*, *bother*, *disturb*; and for politeness, words such as *respect*, *honour*, *considerate*, and *patiently* were used. Participants in the 'rudeness' condition later acted more rudely than did participants in the 'politeness' condition. According to the category accessibility theory, the rudeness or politeness words activated the mental representations of rudeness or politeness. Because these categories became accessible in memory, the categories served to direct the participants' later behaviours. In this case, because 'rudeness' was a category that was accessible and salient in memory, participants acted rudely (same with politeness condition).

In a similar study, the trait of conformity was primed using the scrambled word task (Epley & Gilovich, 1999). Participants were told they were participating in a psycholinguistic experiment, and had to form sentences with words they would be given. In the 'conformity' group, participants were given words like *adhere, agree, comply,* and *conform.* Participants in the non-conformity group were given words like *counter*, *defy, deviate,* and *differ.* In a later task, participants in the conformity group agreed with the confederates more than did participants in the non-conformity group.

In another example of conceptual priming where traits were primed, again using the scrambled word task, Macrae and Johnston (1998) used words like *helped*, *assistance*, *aided*, and *supported* to prime the trait of 'helpfulness'. Participants in the experimental condition were, in a later task, more helpful toward a confederate than were participants in the control condition. These three conceptual studies show that mental representations of traits, such as rudeness, conformity, and helpfulness can be activated and influence a later response. They support the category accessibility hypothesis because they show that trait words activate relevant categories, which then influence later behaviours.

Stereotypes: concepts that can be primed

Stereotypes are another type of concept that can be primed. In an experiment by Bargh, et al. (1996), the stereotype of 'the elderly' was primed, with the scrambled word task. Participants in the experimental condition were given words such as *wrinkle*, *retired*, and *grey*. These participants subsequently walked slower to leave the laboratory than did participants in the experimental condition. Similarly to trait priming, stereotype-related words can activate a stereotype, which is a mental representation of conceptually related information. Because this stereotype is accessible in memory, the stereotype is then used to determine a subsequent response. In this case, words related to old age activated an 'elderly' stereotype. This stereotype was accessible, which made participants walk slower, because walking slowly is related to the 'elderly' stereotype. Another experiment in the same publication (Bargh et al., 1996) primed the African American stereotype by projecting pictures of a young black man. The authors argued that African American men are stereotypically perceived as hostile (Devine, 1989). Some participants saw a picture of a black man, and others of a white man. Participants in the 'African American' condition reacted with more hostility when told to re-do a computer task than did

participants in the 'Caucasian' condition. The African American stereotype was made accessible by the pictures, and because hostility is part of this stereotype, participants reacted with more hostility, because hostility was accessible in their memory.

In another study, the primed stereotype was 'professor' (Dijksterhuis & van Knippenberg, 1998). Professors are stereotypically perceived as being very smart. To activate a mental representation of intelligence, participants were asked to list typical professors' behaviours, lifestyle choices, and appearance attributes. Participants in the experimental condition then performed better on a general knowledge test than did participants in the control condition, because the category 'intelligence' was accessible in their memory, which influenced their cognitive performance. In sum, conceptual priming studies showed that mental representations of different concepts, such as traits (rudeness, conformity, helpfulness) and stereotypes (elderly, African American, professors) can be activated. These studies can be explained by the category accessibility theory, which states that stimuli can activate a category, and this category accessibility influences a later response.

Primed evaluative responses

After mental representations of concepts have been activated, they then influence a later response. The nature of these responses, or reactions, can vary; in fact, priming studies have explored different reactions, such as behaviours (Bargh et al., 1996; Epley & Gilovich, 1999; Macrae & Johnston, 1998) and cognitions (Bengtsson, Dolan, & Passingham, 2010; Dijksterhuis & van Knippenberg, 1998). Evaluative responses are particularly relevant to the current research question, because personnel selection is a highly evaluative context. Recruiters evaluate job applicants on different traits and attributes to determine whether these applicants are appropriate for the job. In priming studies, evaluative responses can be obtained by asking people to rate a

target after having been exposed to a certain stimulus (Herring et al., 2013). In other words, a prime can influence a later evaluation of a target. For example, Erdley and D'Agostino (1988) examined how participants rated a vignette after being exposed, for a very short amount of time (125 ms), to specific words. Some participants were exposed to words related to the trait 'honest', while others were exposed to words related to the trait 'mean'. Participants then read a story portraying a woman acting ambiguously, and were asked to evaluate her on different traits. Participants in the 'honest' category thought the woman was more honest than did participants in the 'mean' category, and vice-versa ($d = .63$, $N = 70$), although they had read the same story about the same woman. The trait words thus influenced the participants' evaluation of the woman's personality.

In a personnel selection context, evaluative reactions are common, because during selection, applicants are being evaluated on different traits and attributes. What if recruiters' evaluations of these applicants were biased due to priming? What if a stimulus (e.g., LinkedIn advertisement) in the recruiter's situational context activated a mental category, which in turn influenced his or her evaluation of the applicant? Priming could happen in selection and could influence later evaluations, as was suggested in Erdley and D'Agostino's study (1988).

Global affective reaction theory

A mechanism called *global affective reaction* was suggested as an alternative to the category accessibility mechanism to explain the priming of evaluations. Unlike the category accessibility mechanism, which is cognitive, the global affective reaction theory argues that a stimulus can automatically generate a global affective reaction, which can in turn influence perceptions. For instance, the mere presence of a stimulus can automatically trigger affective reactions (Fazio, 1986), due to the non-conscious extraction of the stimulus' emotional content

(Zajonc, 1980). These non-conscious global affective reactions can guide the process of impression formation (Niedenthal & Cantor, 1986). Thus, the affective reactions could be triggered automatically by the prime, without any accessibility effects required (Ferguson & Wells, 1980). For example, Bargh and Pietromonaco (1982) used trait words to prime the trait 'hostile'. Participants, after having been primed with the words, were then asked to rate a target person acting ambiguously. Participants rated the target person more negatively, not only on hostility-related traits, but also on other unrelated traits. This distinction is important, because it shows that the 'hostility' prime expanded outside of the 'hostility' category, and influenced a global negative evaluation of the target. Because 'hostility' is perceived as a negative trait, the evaluation as a whole became negative. The target person was perceived as negative on other traits, not just on hostility traits. These results suggest that the hostility words triggered a global negative affective reaction, which in turn negatively biased the participants' evaluation of the stimulus person.

Uncontrolled responses: subliminal and supraliminal priming

Another central aspect of priming is its uncontrolled nature. Priming is the temporary activation of an individual's mental representations, or of a global affective reaction, by the current situational context, which exert *passive, unintended* consequences on subsequent responses. Once activated, mental representations or affective reactions exert a passive influence on various psychological phenomena described in a previous paragraph (e.g., evaluations, but also behaviours and cognitions, etc.). Because the influence is passive, individuals are unaware of this influence and cannot control it (Bargh, 1994). A primed response (whether an evaluation, a behaviour, or a cognition) is thus unintentional, or automatic. In other words, the individual is unaware of any influence being exerted, thus his or her reaction is automatically caused by the

mental representations (or global affective reactions) that had been activated by a prime. This reaction is not deliberate or controlled in any way.

To study priming and to ensure that participants are unaware of a prime's influence, priming can be achieved in two different ways: subliminally or supraliminally (Bargh & Chartrand, 2000; Latham, Stajkovic, & Locke, 2010). Subliminal priming can be distinguished from supraliminal priming by the amount of awareness required and by the methodologies used. Subliminal priming operates below the awareness threshold, whereas supraliminal priming operates above the awareness threshold.

Participants in subliminal priming studies are not aware of the primes, because they are flashed too quickly. Tachistoscopic exposures have been used in subliminal priming studies. A tachistoscope is an apparatus that briefly exposes participants to stimuli (e.g., for 125 ms), long enough for the brain to encode stimuli, but too short for conscious awareness. At that very brief exposure duration, the stimuli (e.g., words) cannot be remembered consciously. The presence of the words cannot be detected. Thus, subliminal priming happens when a prime is perceived outside of a participant's awareness, yet this prime influences subsequent responses. Bargh and Morsella (2008) argued that, although it yields similar results to those of supraliminal priming, this method lacks external validity, because it does not represent a situation that would naturally occur in an individual's life.

Alternatively, in supraliminal priming, participants are aware of the prime; however, they do not know the prime's true purpose, thus cannot control their reactions. Experimental manipulations in supraliminal priming activate the mental representation of a concept, in a way that seems unrelated to a later event in which the participant's response occurs. As described earlier, a common methodology used in supraliminal priming is the 'scrambled word task',

where participants are given scrambled words and must create a coherent sentence. Some words are related to the concept that is being primed. Because supraliminal priming operates above the awareness threshold, participants can identify the prime-related words, they can perceive them consciously and be aware of them. However, clever experiments are designed so that a later response occurs in a context that appears to be completely unrelated to the initial task. Thus, participants do not know there is a link between the prime and the reaction; for this reason, they cannot control their reaction.

For example, Macrae and Johnston (1998) used words like *helped*, *assistance*, *aided*, and *supported* to prime the trait 'helpfulness'. Participants were told that they were to participate in two linguistics experiments. The first task was the scrambled word task containing helpfulness-related words in the experimental condition, or neutral words in the control condition. When this was done, the experimenter told the participant that she would go get the experimenter in charge of the next experiment. As she got up to leave, she purposefully dropped her belongings on the floor, especially pens. The experimenter then recorded whether the participant helped her pick up the pens or not. The findings indicated that participants for whom the trait 'helpfulness' had been primed in the scrambled word task helped the experimenter more than those in the control group. 93.7% of participants in the experimental group helped the experimenter, whereas only 68.7% of participants in the control group demonstrated helpful behaviours ($d = .69$, $N = 64$). In this study, although participants saw the helpfulness words, they had no idea that these words were related to the social situation that happened next. Participants did not associate the helpfulness words with their later helpful behaviour, they did not guess the true purpose of the study, and thus they could not control their reaction.

In sum, subliminal and supraliminal priming differ in the level of conscious awareness required to perceive the prime, and in the types of methodologies used, but both types of priming ensure that participants' reactions are automatic and uncontrolled. Supraliminal priming has more external validity than subliminal priming, and advertisements could be a type of supraliminal prime because advertisements can be consciously seen and can bias later evaluations.

Advertisements: a type of prime

Methodologically, priming can be achieved with different types of primes. As previously mentioned, priming is the temporary activation of an individual's mental representations (or global affective reactions) *by the current situational context*, which exert passive, unintended consequences on subsequent evaluations, cognitions, feelings, or behaviours (Bargh & Chartrand, 2000). In priming studies, the situational context contains stimuli, or primes, that were designed to activate specific mental representations and/or affective reactions. As described earlier, a method that is often used to study priming is the scrambled word task, in which the primes are words. Words can also be used as subliminal primes when they are projected for a few milliseconds in tachistoscopes. Thus, words have been used as supraliminal and subliminal primes.

In addition to the types of primes already described (i.e., words), pictures have also been shown to work effectively as primes (Aarts & Dijksterhuis, 2003; Latham & Piccolo, 2012; Shantz & Latham, 2011). There is evidence that nonverbal primes (e.g., pictures) show, on average, stronger effect sizes than verbal primes on subsequent evaluations of targets (Herring et al., 2013). Priming studies, therefore, have used primes such as words and pictures to activate desired mental representations (or global affective reactions) and passively influence a later

reaction. In laboratory settings, methods like the scrambled word task, or like subliminal projection of pictures, are appropriate and have led to important findings. However, these procedures lack external validity, because they do not occur outside of the laboratory in people's everyday lives (Bargh & Morsella, 2008). But priming is a mechanism that can be an applied to the 'real world'. In the 'real world', contextual stimuli can passively influence a reaction. For instance, the media, such as TV programs and advertisements, are an important source of 'real world' potential primes (Harris et al., 2009). Harris et al. (2009) found that food advertisements during television programs influenced snack consumption. The food advertisements acted as primes and exerted a passive and uncontrolled influence on snacking behaviours; participants were not aware of this influence, and their snacking behaviours were unrelated to their reported hunger levels. Thus, advertisements can act as 'real world' primes and influence individuals' reactions, outside of their awareness. Similarly, advertisements on LinkedIn could be potential 'real world' primes.

To conclude, research about LinkedIn, although growing, remains scarce. LinkedIn is a social network site that is increasingly used by organizations to assess job applicants (Zide et al., 2014); however, the effects of using LinkedIn as an applicant assessment tool are unknown, and potential biases may occur. Thus, more research is needed on using LinkedIn in selection, and especially on potential threats to its validity as a personnel assessment tool. A potential way in which LinkedIn could bias the selection process is through its advertisements. Previous research has shown that advertisements can act as 'real world' primes and bias subsequent responses due to priming (Harris et al., 2009). In priming, a stimulus (in this case, an advertisement) passively influences a later reaction, such as an evaluation. In personnel selection, recruiters evaluate job applicants on several traits, i.e. recruiters make many evaluations. LinkedIn advertisements could

therefore act as stimuli that influence recruiters' evaluations of applicants, either by activating a conceptual category (category accessibility theory), or by triggering an overall affective state (global affective reaction theory). Two experiments were conducted to investigate the priming effects of LinkedIn advertisements on subsequent evaluations of applicants.

STUDY 1

The goal of Study 1 was to examine whether LinkedIn advertisements had an impact on evaluations of applicants, based on their LinkedIn profiles. On LinkedIn, organizations can advertise products or services, and their advertisements may appear on applicants' profiles. These applicants have no control over the advertisements that appear on their profile while recruiters are evaluating them. What if a particularly negative advertisement appeared on an applicant's page as a recruiter was looking at it? Could this particularly negative advertisement impact the recruiter's judgment of the applicant?

Primes used in this study and hypotheses

LinkedIn advertisements are generally a combination of pictures and words. On the left side of the advertisement, there is an image or logo, and on the right side there is a short blurb advertising the product or service. Two advertisements were created for this study.

The first advertisement was selling plus-size clothes, targeting a market of obese individuals. Obesity is defined as having a body mass index greater than or equal to 30 (World Health Organization, 2013). The advertisement's picture portrayed belly fat being pinched and a short blurb about clothing accompanied the picture (see Appendix C). The advertisement was considered negative, because obesity stereotypes are very negative. In fact, there is pervasive discrimination against obese people in many social contexts (Puhl & Brownell, 2001), such as the workplace. For example, Judge and Cable (2011) found that obese people get paid less than

average-sized people and Agerström and Rooth (2011) found that recruiters who are biased

against obese people do not hire them as much as less biased recruiters. Teachman and

colleagues (2003) found that although people report not being prejudiced against obese people,

they demonstrate strong implicit anti-fat biases. Moreover, obesity stereotypes seem to be as

severe for women as for men (Harris, Harris, & Bochner, 1982). Obesity biases could be

attributed to an attractiveness bias, wherein unattractive people are considered to be less

competent than attractive people (Jackson, Hunter, & Hodge, 1995), and obese individuals are

considered unattractive by Western social standards. Thus, obesity-related stereotypes are very

negative and elicit strong biases. According to the global affective reaction theory, a negative

prime could trigger a global negative reaction, which in turn would negatively bias a later

evaluation. The obesity-related advertisement could therefore act as a negative prime and

negatively bias a later evaluation of an applicant's LinkedIn profile.

The second advertisement that was created for this study was advertising athletic

clothing, targeting a market of fit individuals. The advertisement's picture portrayed a fit woman

lifting weights above her head, and a short blurb about athletic clothing accompanied the picture

(see Appendix C). The advertisement was considered positive, because athleticism stereotypes

are generally seen as positive (Czopp, 2008). This advertisement was created to act as the

opposite of the plus-size clothing advertisement, because both advertisements are about clothing,

but one is perceived as negative, and the other, as positive. According to the global affective

reaction theory, the fitness-related advertisement could act as a positive prime and positively bias

a later evaluation of an applicant's LinkedIn profile. Therefore:

H1: A LinkedIn profile containing no advertisement will yield a lower profile rating than a LinkedIn profile containing a positive advertisement, but a higher profile rating than a LinkedIn profile containing a negative advertisement.

Unlike the global affective reaction theory, the category accessibility theory argues that a stimulus can activate a mental representation of a related category, and once this category is made accessible in memory, it then affects a later response. The two advertisements created for this study could therefore activate the mental representations of the two related stereotypes (obesity and fitness) and prime specific traits associated with these stereotypes. Some common beliefs about obese people, as evidenced in a paper on legal aspects of obesity in the workplace, are: "they move slowly and think slowly, they have more illnesses and poorer attendance records, and they are unattractive and poor role models" (Paul & Townsend, 1995, p.136). In contrast, Ogilvie (1968) found that conscientiousness is a trait present in high-level athletes. Self-discipline is a sub-trait of conscientiousness and is defined as the ability to carry tasks through to completion (Costa & McCrae, 1992). Individuals with high self-discipline are able to motivate themselves to finish a task despite distractions, which resembles the athletic stereotype (conscientiousness, self-control, etc.), but differs from the obesity stereotype (laziness, slowness, etc.). Therefore, the athletic prime should yield high self-discipline trait ratings, whereas the obesity prime should predict low self-discipline ratings:

H2a: A LinkedIn profile containing no advertisement will get lower ratings on self-discipline traits than a LinkedIn profile containing an athletic clothing advertisement, but higher self-discipline ratings than a LinkedIn profile containing a plus-size clothing advertisement.

Activity is a sub-trait of extraversion (Costa & McCrae, 1992; Eysenck, Barret, Wilson, & Jackson, 1992), and is defined as "predisposition towards being busy, energetic, talkative, and

a preference for leading a fast paced life" (Rhodes, Courneya, & Jones, 2004). Rhodes and colleagues (2002) demonstrated that the activity trait is one of the most important personality influences on exercise behaviour. Thus, the obesity prime should yield low activity trait ratings, and the athletic prime should yield high activity ratings:

H2b: A LinkedIn profile containing no advertisement will get lower ratings on activity traits than a LinkedIn profile containing an athletic clothing advertisement, but higher activity ratings than a LinkedIn profile containing a plus-size clothing advertisement.

Finally, to ensure that trait-specific priming is effective, another trait will be rated; however, this last trait will not be related to either of the primed stereotypes. Straightforwardness is an agreeableness sub-trait, defined as being frank, honest, and sincere when dealing with others (Costa & McCrae, 1992). To my knowledge, there is no evidence that straightforwardness is associated with either of the primed stereotypes. This exploratory research question will allow differentiating between the two priming hypotheses (category accessibility vs. global affective reaction). If straightforwardness is not related to either stereotype, the category accessibility theory states that straightforwardness ratings should not be influenced by the activated stereotypes. However, straightforwardness ratings could be influenced by global affective reactions, such that a global positive reaction would yield high straightforwardness ratings, and a global negative reaction would yield low straightforwardness ratings.

Methods

Participants

Participants were 104 University of Guelph undergraduate students, recruited from the University of Guelph psychology participant pool. There were no restrictions on recruitment. The sample was 87.7% female, and mean age was 18.3 years (SD = .99). Most participants

(79%) were in their first year of university and almost none (9%) had previous experience with recruitment and selection. In exchange for their participation, students were offered 0.5 bonus point toward their introductory psychology course.

The intended sample size was determined by a power analysis carried out in GPower 3.1, based on average effect sizes ($d = .80$) found in previous priming studies (Epley, & Gilovich, 1999; North et al., 1999). The power analysis suggested a total sample size of 100 participants for a power of .95.

Materials

Job posting. A job posting was created for this study. Job search websites, such as www.monster.ca and www.jobboom.com, as well as O*NET were referred to during the creation of the job posting, to ensure ecological validity and appropriate job characteristics. The job posting is about a (fictitious) company, CellCom, a Toronto-based cellphone provider looking for a customer service representative. The job posting outlines the position's responsibilities as well as required skills. See Appendix A.

LinkedIn profiles. Three LinkedIn profiles were created for this study. Each profile contained a picture of the applicant along with the applicant's, name, education, and previous job experience. Names were created randomly with a random name generator (www.behindthename.com/random/). Pictures were taken from www.freedigitalphotos.net in the 'business people' category. All three profiles depict young Caucasian women with undergraduate degrees, because students and recent graduates are the fastest growing demographic on LinkedIn. It was decided that all applicants' gender and ethnicity would be the same, in order to reduce potential biases (e.g. gender or racial bias). All three have similar previous work experience, all relevant to the job posting (e.g. sales associate, server, volunteer coordinator, etc.). Thirty expert

raters (graduate students) were asked for their input on the similarity of the three LinkedIn

profiles (in terms of suitability for the job posting). Specifically, they were asked to rate the

suitability of each LinkedIn applicant for the job on a Likert-type scale, and asked to provide

explanations for their ratings. Profiles were modified according to the provided feedback, in

order to make the profiles as similar to each other as possible. See Appendix B.

Advertisements. Two LinkedIn advertisements were created for this study by an expert in

graphic design. The negative advertisement contained a picture of a fat belly and a short blurb

for plus-size clothing. The positive advertisement contained a picture of a fit woman lifting a

heavy barbell and a short blurb for athletic clothing. See Appendix C.

These two advertisements were pre-tested on an online sample ($N = 83$) to ensure their

perceived valence. The pre-testing participants were asked to rate each advertisement on a scale

from -5 to +5 on four items (negative/positive, dislikeable/likeable, bad/good,

undesirable/desirable). The items' reliability was high ($\alpha > .90$), thus all four items were treated

as a single outcome variable (perceived valence). There was a significant main effect of

perceived valence, $t(82) = 7.39$, $p < .001$, $d = 1.06$, with the athletic clothing advertisement

receiving higher scores (M = 2.12, SD = 2.24) than the plus-size clothing advertisement (M = -

0.53, SD = 2.72).

Measures.

Demographics questionnaire. A 4-question demographics questionnaire was used to

collect data about the sample. Participants were asked to report their age, gender, school year and

major, and whether they had previous experience with personnel recruitment and selection. The

experience question was used to control whether more experienced participants constituted a

separate sub-group. However, experienced participants (9%) did not differ from unexperienced participants (89%) in their profile ratings.

Applicant profile evaluation scale. The second measure was a rating scale used to evaluate each of the three applicants' LinkedIn profiles. The scale contained three items (How qualified is this applicant for the job? In your opinion, how suitable would this applicant be to CellCom? If you were CellCom, how likely would you be to invite this applicant for an interview?), adapted from Stevens and Kristof (1995) that were answered on a 5-point Likert-type scale. The items' reliabilities for each of the three LinkedIn profiles were good (α =.85, α =.93, α =.92), thus the three items were treated as single outcome variables for each profile (profile 1 rating, profile 2 rating, and profile 3 rating).

Applicant personality evaluation scale. The applicant personality evaluation scale also contained three items (Self-discipline is defined as the ability to carry tasks through to completion. Individuals with high self-discipline are able to motivate themselves to finish a task despite distractions. How self-disciplined is this applicant? Activity is defined as a predisposition towards being busy, energetic, talkative, and a preference for leading a fast paced life. How active is this applicant? Straightforwardness is defined as being frank, honest, and sincere when dealing with others. How straightforward is this applicant?), answered on a 5-point Likert-type scale. The personality traits' definitions were taken from Costa and McCrae (1992).

Debriefing questionnaire. The debriefing questionnaire contained two open-ended questions about the perceived study's purpose and presence of advertisements. The first question was an awareness check (What do you think this study is about?) and was very important, because supraliminal priming studies are based on the assumption that participants are unaware of the study's true purpose. The second question (Did you notice advertisements on the LinkedIn

profiles? If yes, what do you remember about them?) was asked with the intention of understanding whether participants needed to remember the advertisements in order for priming to work.

Procedure

Participants were scheduled to come into the laboratory in groups of four. They were seated around a boardroom table, each in front of a laptop. When all participants had arrived, the researcher explained the study and answered questions, and informed consent was obtained. Participants were told that they had to evaluate three applicants who were applying for a specific job. First, participants filled out the demographics questionnaire. Then, they read the job posting for the customer representative position at CellCom, which was shown on their laptop screen. Next, they viewed the first profile containing either the positive ad, the negative, or no ad, depending on the order of viewing participants were randomly placed in. Profiles were also shown on the laptop screen and were viewed for as long as needed to produce a rating. On average, this took three minutes. After viewing the first profile, they were asked to rate it using the Applicant Profile Evaluation Scale and the Applicant Personality Evaluation Scale. They did the same for the second and third profiles. Finally, they filled out the debriefing questionnaire. When they were done filling out all measures, participants were debriefed and left the laboratory.

The three profiles were always seen in the same order; however, the order in which the advertisements appeared differed. Thus, a participant might see the positive advertisement on the first profile, then, the negative advertisement on the second profile, and finally, no advertisement on the last profile. Another participant might see no advertisement on the first profile, the positive advertisement on the second profile, and the negative advertisement on the third profile, etc. Participants were randomly assigned to one of all possible orderings (6) prior to study

commencement. Viewing multiple advertisements may have had biasing effects; e.g., seeing a positive advertisement before a negative advertisement may bias the perception of the negative advertisement, if a positive priming effect carries over and influences the perception of the negative advertisement. To diminish potential order effects, the order in which the advertisements were seen by participants was counterbalanced. To further diminish this risk, a between-subjects analysis was conducted on the first profile only. More detailed explanations are provided in the results section.

Results and Discussion

Debriefing questions

The first question in the debriefing questionnaire was an awareness check. The question asked participants to report what they thought the study was about. Not a single participant reported knowing the true purpose of the study. Most participants thought the study was about inferring personality traits from LinkedIn profiles (e.g., "how some traits can be shown through a resume and how that affects an employer's decision", "examining what qualities companies look at when hiring a new employee/why they hire certain people", "to find out about someones (sic) personality through description/words"). In supraliminal priming, it is crucial for participants to be unaware of the true purpose of the study, so as to avoid controlling their later reaction. If participants had known that the study was about biasing effects of LinkedIn advertisements, they could have controlled their later evaluation of the applicant; thus, their evaluation would not have been primed. If participants had reported knowing the true purpose of the study, their data would have been discarded. However, no participant reported knowing the true purpose of the study.

The second question asked participants to report whether they noticed any advertisements on the profiles, and if so, what they remembered. Only 35% reported having seen an advertisement; however, when prompted, almost none correctly described the advertisements. For instance, many participants thought the advertisements were about weight loss or fitness, and not about clothing. Some participants reported seeing the advertisements, but could not remember what they were: "I don't remember what was advertised but I think there were some small ads on the side", "I believe there were small advertisements on the profiles, but I don't recall what they were for, they did not draw my attention directly to them".

Main analyses

The first hypothesis stated that profiles containing no advertisement would get higher ratings than profiles containing a negative advertisement, but lower ratings than profiles containing a positive advertisement. A repeated measures one-way analysis of variance was performed to investigate the effect of the advertisement's valence on profile ratings. The assumption of sphericity was not violated, $\chi^2(2) = 2.61$, $p = .27$. No significant main effect of advertisement valence was found, $F(2,206) = 1.16$, $p = .32$, $\eta^2_p = .01$. Descriptive statistics are shown in Table 1. Thus, contrary to expectations, profiles were not rated differently depending on the advertisement's valence.

Table 1.

Descriptive Statistics for Outcome Variable (Profile Rating) by Ad Valence Condition

Ad Valence	Profile Rating
Positive	3.42 (.88)
None	3.26 (.91)
Negative	3.38 (.92)

Note. $N = 104$

Although the three LinkedIn profiles were carefully designed to be as similar to each other as possible, it is possible that the profiles were perceived differently with regards to their quality, and thus could have biased the ratings (e.g., one applicant seen as more qualified than the others). The repeated measures analysis cannot control for profile effects, because all profiles are merged together in the analysis. To circumvent potential profile effects, between-subjects one-way analyses of variance were performed to investigate the effects of the advertisements' valence on each profile's ratings. This type of analysis allowed looking at profiles separately. Moreover, the between-subject analysis was done only on the first profile so as to reduce the risk of order effects. Because the analysis focused on the first condition, the ratings were not influenced by others conditions. No significant main effect of advertisement valence on profile rating was found for the first profile, $F(2, 101) = .06$, $p = .95$, $\eta^2_p = .00$. Again, profile ratings did not differ based on the advertisement. Descriptive statistics are provided in Table 2. The between-subjects one-way ANOVAs for the other two profiles can be found in Appendix D.

Table 2.

Descriptive Statistics for Outcome Variable (Profile 1 Rating) by Ad Valence Condition

Ad Valence	Profile 1 Rating
Positive	3.52 (.74)
None	3.58 (.81)
Negative	3.56 (.81)

Note. N = 104

The second hypothesis stated that profiles containing no advertisement would get higher ratings on self-discipline (H2a) and activity (H2b) traits than profiles containing a plus-size clothing advertisement, but lower ratings than profiles containing an athletic clothing advertisement. No assumptions were made about straightforwardness ratings. One-way repeated measures analyses of variance were performed to investigate the effect of the advertisement's

type on self-discipline, activity, and straightforwardness ratings. No significant main effects of advertisement type were found on self-discipline ratings, $F(2,206) = 1.23$, $p = .30$, $\eta^2_p = .01$, on activity ratings, $F(2,206) = 2.03$, $p = .13$, $\eta^2_p = .02$, or on straightforwardness ratings, $F(2,206) = 1.72$, $p = .18$, $\eta^2_p = .02$. The assumption of sphericity was not violated in any of the analyses. Descriptive statistics are shown in Table 3. Thus, personality ratings were not influenced by the advertisement type. Hypotheses 2a and 2b were not supported.

Table 3.

Descriptive Statistics for all Outcome Variables by Ad Type Condition

Ad Type	Self-Discipline Rating	Activity Rating	Straightforward. Rating
Athletic	3.90 (.73)	4.11 (.80)	3.51 (.79)
None	3.77 (.73)	3.90 (.91)	3.52 (.84)
Plus-Size	3.80 (.78)	4.10 (.86)	3.67 (.79)

Note. $N_{SD} = 104$, $N_A = 104$, $N_S = 104$

Between-subjects one-way analyses of variance found no significant main effects of advertisement type on self-discipline ratings for profile 1, $F(2, 101) = .27$, $p = .77$, $\eta^2_p = .01$, on activity ratings for profile 1, $F(2, 101) = .04$, $p = .97$, $\eta^2_p = .00$, or on straightforwardness ratings for profile 1, $F(2, 101) = .54$, $p = .59$, $\eta^2_p = .01$. Descriptive statistics are shown in Table 4. The between-subjects one-way ANOVAs for the other two profiles can be found in Appendix D.

Table 4.

Descriptive Statistics for all Outcome Variables in Profile 1 by Ad Type Condition

Ad Type	Self-Discipline Profile 1	Activity Profile 1	Straightforwar. Profile 1
Athletic	3.76 (.65)	4.14 (.82)	3.35 (.74)
None	3.66 (.73)	4.17 (.79)	3.51 (.92)
Plus-Size	3.66 (.73)	4.20 (.87)	3.34 (.64)

Note. $N_{SD} = 104$, $N_A = 104$, $N_S = 104$

Study 1 tested the effects of fitness-related (positive) and obesity-related (negative) LinkedIn advertisements on profile ratings of applicants and on evaluations of applicants' personality traits. The first hypothesis stated that a profile with no advertisement would yield a lower profile rating than a profile with a positive advertisement, but a higher profile rating that a profile with a negative advertisement. This hypothesis was not supported; profiles were not rated differently depending on the advertisements' valence. Therefore, the global affective reaction theory was not supported, because overall negative or positive evaluations were not shown.

Hypotheses 2a and 2b were about personality traits (self-discipline and activity) and stated that applicants' profiles would be rated differently on these two personality traits depending on the advertisements' stereotypes (obesity or fitness). Again, the hypotheses were not supported by the results; applicants were not rated differently on self-discipline and activity traits.

The last research question was exploratory in nature and asked whether straightforwardness could be primed by the obesity-related and athleticism-related advertisements. No significant differences in straightforwardness ratings were found between profiles with different advertisements. Although straightforwardness ratings did not differ, this last finding would be more diagnostic if activity and self-discipline ratings had differed, because it would have shown that stereotypical traits (self-discipline and activity) were primed and influenced subsequent personality ratings, while non-specific traits (straightforwardness) were not primed. In other words, it would have supported the category accessibility of priming, because it would have shown that specific stereotypical categories had been activated.

All that can be inferred from these findings across all rating scales is that the variation among advertisements (negative and positive, or obesity-related and athleticism-related) did not

prime the evaluations of applicants' LinkedIn profiles or personality traits. Neither priming theory (category accessibility or global affective reaction) was supported.

Several factors could explain the very small effect sizes that were found. First, the advertisements that were used may have been too 'weak' to induce a positive or negative evaluation. The advertisements' pre-test, although significant, showed that participants did not rate the advertisements as extremely positive (M = 2.12, SD = 2.24) or extremely negative (M = -0.53, SD = 2.72). Perhaps more extremely valenced advertisements would have influenced the ratings. Second, in the debriefing questionnaire, most participants reported not having seen the advertisements. Of the participants who reported having seen advertisements, many did not describe the advertisements correctly. Most thought advertisements were about weight loss or fitness and described the pictures (e.g. "I remember a body building one with a female doing a dead lift", "Something about a weight loss ad. There was a woman with a large belly and a measuring tape around it"). No participant described the advertisements' words. These results suggest participants did not focus their attention on advertisements for prolonged amounts of time. If they had looked carefully at advertisements, ratings may have been influenced to a larger extent.

The manipulations may have been too weak to elicit priming. Daniel Kahneman, a Princeton University psychologist and Nobel prize winner, said of priming studies that "you must tweak the situation just so, to make the manipulation strong enough to work, but not salient enough to attract even a little attention" (Yong, 2012, p. 299). Therefore, it is possible that manipulations were not strong enough to elicit priming. Study 2 was designed to explore priming effects of LinkedIn advertisements on ratings of applicants under stronger priming

manipulations, and see whether the very small effect sizes found in Study 1 could be attributed to weak manipulations.

STUDY 2

The goal of study 2 was to test the priming effects of LinkedIn advertisements on subsequent profile ratings of applicants' LinkedIn profiles. However, in Study 2, manipulations were strengthened, and a different, very large online sample was used. Moreover, the personality trait evaluations were taken out to focus solely on the overall evaluation of applicants.

Stronger manipulations and hypotheses

Number of advertisements. To strengthen the effect of advertisements, two advertisements were used, instead of one. Thus, on each profile, there were either two negative or two positive advertisements, or none:

H1: A LinkedIn profile containing no advertisement will yield a lower profile rating than a LinkedIn profile containing positive advertisements, but a higher profile rating than a LinkedIn profile containing negative advertisements.

Advertisement placement. On social media websites (e.g. Facebook, LinkedIn), advertisements are often placed on the right side of the page. Jessen and Rodway (2010) showed that, when engaged in a difficult task, advertisements are easier to ignore if the advertisements' location is predictable. Because advertisements are located in the right margin on LinkedIn, advertisements might be more effective if placed in an unexpected location. In other words, advertisements might have stronger effects when placed on top of the page than when placed on the right side:

H2a: For positive advertisements, advertisements on top of the profile will yield a higher profile rating than will advertisements on the side of the profile.

H2b: For negative advertisements, advertisements on top of the profile will yield a lower profile rating than will advertisements on the side of the profile.

Profile quality. In study 1, all three profiles had similar education and previous experience. The applicants were considered equally qualified for the job posting. It was thus impossible to determine the effect that a positive or negative prime would have on differently qualified profiles. A perceptual contrast effect dictates that when two stimuli are closely perceived in space, they are more easily contrasted (Sherif, Taub, & Hovland, 1958). In other words, when two stimuli are side by side, the perception of one stimulus can be influenced by the other stimulus, because of a contrast effect. Thus, it is possible that a positive advertisement would have more positive impact on a bad profile than on a good profile, because of the contrast between the positive advertisement and the bad profile:

H3a: For the bad profile, the difference in ratings between positive and no advertisement conditions will be greater than the difference in ratings between negative and no advertisement conditions.

H3b: For the good profile, the difference in ratings between negative and no advertisement conditions will be greater than the difference in ratings between positive and no advertisement conditions.

Methods

Participants

Participants were recruited on Amazon Mechanical Turk. Mechanical Turk is the most popular online labour market (Rand, 2012). An online labour market is an internet platform that 1) connects workers with employers and 2) facilitates the transfer of payments (Horton, Rand, & Zeckhauser, 2011). Most jobs posted on Mechanical Turk are short ones (less than 5 minutes)

and pay less than \$1. Mechanical Turk is a tool that researchers can use to easily recruit participants (Rand, 2012).

Participants were 510 Amazon Mechanical Turk users located in the United States. The sample was 60% male and mean age was 32 years (SD = 10.29). Almost all (90%) specified English as their mother tongue. Many participants (63%) self-identified as West European. Almost a third (27%) reported having had previous experience with recruitment and selection. The experienced participants did not differ from the rest of the sample with regards to their ratings. In exchange for their participation, Mechanical Turk users were offered \$.50 for a maximum of 15 minutes of participation. On average, participants completed the study in 4 minutes and 25 seconds.

The intended sample size was determined by a power analysis carried out in GPower 3.1, based on smaller effect sizes ($d = .50$) than previously reported, for a conservative analysis. The power analysis suggested a total sample size of 386 participants for a power of .95.

Materials

Job posting. The same job posting as in Study 1 was used.

LinkedIn profiles. Two types of LinkedIn profiles were used for this study, a 'good' and a 'bad' profile. The good profile was one of the three profiles used in study 1. The bad profile was created for this study. It was identical to the good profile, with the same picture and name used (they were the same applicants); however, they differed on education and on previous experience. The good profile had more desirable education (bachelor's degree) and previous experience related to the job description (sales associate, camp counsellor, cashier). The bad profile had lower education (high school diploma) and experience that was irrelevant for the job posting (office cleaning). See Appendix E.

The profiles were pre-tested on a sample of 30 graduate students who rated the two applicants' profiles on suitability for the specific job using a 7-point Likert-type scale. A significant main effect of profile quality was found, $t(28) = 19.21$, $p < .001$, $d = 3.36$, with the good profile receiving higher ratings (M = 5.24, SD = 1.01) than the bad profile (M = 2.10, SD = .85).

Advertisements. Two additional LinkedIn advertisements were created for this study. A new negative advertisement and a new positive advertisement were created by the same expert in graphic design. These two new advertisements were used in addition to the ones used in study 1, resulting in two advertisements per LinkedIn profile instead of one. Thus, on a profile, two negative advertisements (the one from study 1 and the new one), or two positive advertisements would be shown. The new negative advertisement contained an image of a hand next to a syringe, and a short blurb about getting help for drug problems. The new positive advertisement contained a picture of a puppy and a short blurb for puppy adoption. See Appendix F.

These two new advertisements were pre-tested on an online sample ($N = 76$) to ensure their perceived valence. Participants were asked to rate each advertisement on a scale from -5 to +5, where -5 is the most negative, dislikeable, bad, and undesirable, and +5 is the most positive, likeable, good, and desirable. There was a significant main effect of perceived valence, $t(75) = 15.18$, $p < .001$, $d = 2.49$, with the puppy advertisement receiving higher scores (M = 3.69, SD = 1.73) than the drug addiction therapy advertisement (M = -2.10, SD = 2.79).

Measures

Demographics questionnaire. A 5-question demographics questionnaire was used to collect data about the sample. Participants were asked to report their age, gender, first language, ethnicity, and whether they had previous experience with personnel recruitment and selection.

Applicant overall evaluation scale. The same rating scale as in study 1 was used to evaluate the LinkedIn profiles; however, items were answered on a 7-point Likert-type scale instead of a 5-point one. The three items (How qualified is this applicant for the job? In your opinion, how suitable would this applicant be to CellCom? If you were CellCom, how likely would you be to invite this applicant for an interview?) were highly inter-correlated. The items' reliability was excellent (α =.96), thus were treated as a single outcome variable (Profile Rating).

Inattention check. Because this study used an online sample, it was difficult to know whether participants were attentive to the study. A factual question was asked to check for careless responding (How many advertisements are on the LinkedIn profile?). Not only did this question force participants to engage with the advertisements, thus strengthening the manipulation, it also served as an inattention check. Participants who provided an incorrect answer were not included in the data.

Procedure

This online study was posted on the Mechanical Turk website (www.mturk.com). A description of the study was made available to Mechanical Turk workers. If they wished to participate, they clicked on the link, which opened the study. Ten conditions were posted (2 (ad valence: positive, negative) X 2 (ad placement: top, side) X 2 (profile quality: good, bad) + 2 control conditions). See Table 5 for a list of all conditions. Participants were able to participate more than once, although there were instructions discouraging them from doing so. When participants had participated more than once (165 participants did so), only data from their first participation were kept. The other data were discarded.

Table 5.

Study 2 Conditions.

GOOD PROFILE

Ad Valence	Ad placement	
	Top	*Side*
Positive Ad	Good profile, + ads on top	Good profile, + ads on the side
Negative Ad	Good profile, - ads on top	Good profile, - ads on the side
No Ad (control)	Good profile, 0 ad	

BAD PROFILE

Ad Valence	Ad Placement	
	Top	*Side*
Positive Ad	Bad profile, + ads on top	Bad profile, + ads on the side
Negative Ad	Bad profile, - ads on top	Bad profile, - ads on the side
No Ad (control)	Bad profile, 0 ad	

First, participants read a consent form explaining the study. Then, they filled out a short demographics questionnaire. Next, they read the job description. Then, they viewed a profile (good or bad, depending on the condition) containing two positive ads, two negative ads, or no ad, again depending on the condition. After viewing the profile, participants were asked to report how many advertisements were on the profile (inattention check). They then rated the profile with the rating scale. Finally, they read a debriefing form. All these steps were performed in four minutes and 25 seconds, on average.

Results and Discussion

Inattention check

To check for careless study participation, participants were asked to report the number of advertisements seen on the LinkedIn profile. It was assumed that if participants answered

correctly, their level of attention was sufficient to carry out the study. If, however, they answered incorrectly, their data were discarded, because it was assumed that they did not pay attention to the rest of the study. A total of 121 participants provided an inaccurate answer.

Main analyses

A between-subjects two-way analysis of variance was conducted to test all main effects and interactions. Although no hypothesis focused on profile quality, a significant main effect of profile quality was found, $F(1, 500) = 616.44$, $p = .00$, $\eta^2_p = .55$. Profile ratings were higher for the good profile (M = 5.01, SD = 1.26) than for the bad profile (M= 2.29, SD = 1.20).

The first hypothesis stated that advertisement valence would have an effect on the profile rating, such that a profile with no advertisements would yield a higher rating than a profile with negative advertisements, but would yield a lower rating than a profile with positive advertisements. Two one-way analyses of variance were employed to evaluate the main effect of the advertisement valence (positive, negative, or none) on profile ratings; the first ANOVA was performed on the 'good' profile, and the second was performed on the 'bad' profile. No significant main effect was found for the good profile, $F(2, 250) = .79$, $p = .46$, $\eta^2_p = .01$, nor for the bad profile, $F(2, 254) = .11$, $p = .89$, $\eta^2_p = .00$. In other words, profiles were not rated differently based on the advertisements' valence (see Table 6 for descriptive statistics).

Table 6.

Descriptive Statistics for Outcome Variable (Profile Rating) in Ad Valence Condition for Good and Bad Profiles

Ad Valence	Good Profile	Bad Profile
Positive	4.99 (1.30)	2.33 (1.18)
None	5.14 (1.23)	2.29 (1.24)
Negative	4.90 (1.24)	2.24 (1.18)

Note. N = 510

The second hypothesis stated that there would be a significant interaction between advertisement placement and advertisement valence in predicting profile ratings, such that, for positive advertisements, advertisements on top of the profile would yield a higher profile rating than advertisements on the side of the profile (H2a), and such that, for negative advertisements, advertisements on top of the profile would yield a lower profile rating than advertisements on the side (H2b). The good and bad profiles were analyzed separately. Two-way analyses of variance were used to explore the interaction effect between advertisement valence and advertisement placement. No interaction effect was found for the good profile, $F(1, 248) = .52$, $p = .47$, $\eta^2_p = .00$, nor for the bad profile, $F(1, 252) = .86$, $p = .35$, $\eta^2_p = .01$. Descriptive statistics can be found in Tables 7 and 8. Moreover, no main effect of advertisement placement was found, $F(1, 500) = .15$, $p = 70$, $\eta^2_p = .00$.

Table 7.

Descriptive Statistics for Outcome Variable (Profile Rating) for Ad Valence x Ad Placement in Good Profile

	Ad Valence		
Ad Placement	Positive	None	Negative
Top	4.95 (1.36)	-	4.99 (1.36)
Side	5.04 (1.24)	-	4.80 (1.12)
No Ad	-	5.14 (1.23)	-

Note. N = 253

Table 8.

Descriptive Statistics for Outcome Variable (Profile Rating) for Ad Valence x Ad Placement in Bad Profile

	Ad Valence		
Ad Placement	Positive	None	Negative
Top	2.16 (1.18)	-	2.25 (1.00)
Side	2.48 (1.17)	-	2.23 (1.34)
No Ad	-	2.29 (1.24)	-

Note. N = 257

The third hypothesis stated that there would be a significant interaction between advertisement valence and profile quality in predicting ratings, such that, for the 'bad profile' condition, the difference in ratings between positive and no advertisement conditions would be greater than the difference between negative and no advertisement conditions (H3a). Similarly, H3b stated that in the 'good profile' condition, the difference in ratings between negative and no advertisement conditions would be greater than the difference in ratings between positive and no advertisement conditions. To investigate the interaction between advertisement valence and profile quality, a two-way analysis of variance was performed. No interaction effect was found, $F(2, 504) = .33$, $p = .72$, $\eta^2_p = .00$. Means and standard deviations can be found in Table 6.

Study 2 tested the effects of positive and negative LinkedIn advertisements on profile ratings of applicants. The first hypothesis stated that a profile with no advertisements would yield a lower profile rating than a profile with positive advertisements, but a higher profile rating than a profile with negative advertisements. This hypothesis was not supported; profiles were not rated significantly differently depending on the advertisements. These results are similar to those reported in study 1.

Hypotheses 2a and 2b were about advertisement placement (top or side) and stated that advertisements placed on top of the page would have a stronger impact than advertisements placed on the side. Again, the hypotheses were not supported by the results; ratings did not differ based on advertisements' placement. These findings mirror those of Simola et al., (2011), who showed that there is no difference between top margin and side margin when it comes to paying attention to advertisements.

Hypotheses 3a and 3b were about profile quality, and stated that due to a contrast effect, positive advertisements would have a stronger impact than negative advertisements on a bad

profile, and negative advertisements would have a stronger impact than positive advertisements on a good profile. These hypotheses were not supported, and no contrast effect was found.

The goal of Study 2 was to explore priming effects of LinkedIn advertisements on evaluations of applicants with stronger priming manipulations than in Study 1. It seems stronger manipulations did not make a difference in terms of detecting priming effects. Therefore, it is possible that LinkedIn advertisements do not have biasing effects on subsequent ratings of applicants' LinkedIn profiles. However, alternative explanations should be considered before these results can be generalized.

Overall Discussion and Conclusion

Organizations are increasingly using LinkedIn to support their recruitment and selection functions (Zide et al., 2014), but the effects of using LinkedIn for selection purposes remain unclear. The present two-study research adds to the scarce research on social media used in personnel selection. Specifically, the two studies presented here tested priming effects of LinkedIn advertisements on evaluations of applicants' suitability for a specific job (studies 1 and 2) and on evaluations of applicants' personality traits (study 1) based on the applicants' LinkedIn profiles. Contrary to what was hypothesized, LinkedIn advertisements did not influence subsequent ratings, even when stronger priming manipulations were used. None of the hypotheses were supported by the results. The results suggest that advertisements on applicants' LinkedIn profiles do not negatively or positively influence subsequent evaluations of these applicants' suitability or traits.

The biasing effects of advertisements were conceptualized within a priming framework. Two priming theories were used to develop the studies: the category accessibility theory and the global affective reaction theory. The former states that a mental category is activated by the

prime, and because the category is accessible in memory, it then influences a reaction. In Study 1, the categories were athletic and obesity stereotypes. According to the category accessibility theory, the athletic and obesity stereotypes should have biased evaluations of applicants' traits that were related to these stereotypes (self-discipline and activity). However, the different advertisements did not bias evaluations of applicants' traits. Thus, the category accessibility theory was not supported in Study 1.

Study 2 focused on the other priming theory, the global affective reaction theory. This theory states that a prime can trigger an affective reaction, which influences a later reaction. Study 1 and Study 2 used positive and negative advertisements to study the affective influence of advertisements on evaluations of applicants' overall suitability for a job. Again, no effects were found, and like for the category accessibility theory, the global affective reaction theory was not supported.

Possible reasons for small effect sizes

The present findings are surprising when compared to other findings in the priming literature, because previous studies have used similar methods and have reported large effect sizes. However, upon closer examination, there are factors that may explain the small effect sizes reported here. Previous research has shown that television advertisements can be primes (Harris et al., 2009). However, the ubiquity of advertisements on websites (e.g. social media websites) might make online advertisements different, because Internet users may disregard them. Stenfors, Morén, and Balkenius (2003) argued that experienced Internet users developed avoidance strategies, in order to avoid online advertisements that might distract them from the task at hand. This would even be true for highly salient visual cues in advertisements. Moreover, Internet users disregard online advertisements more when they have a goal in mind than when

they do not. Simola and her colleagues (2011) designed experiments in which participants' eye movements were recorded by an eye tracking device as they were reading web pages. They found that participants had paid less attention to advertisements (fewer fixations and fewer regressions) when they were asked to read a web page for comprehension than when asked to browse the web freely. It is possible that in the two studies presented here, participants disregarded the advertisements on the LinkedIn profiles because they were preoccupied with the selection task. Because they were focused on rating the applicants' profiles, it is possible that participants disregarded the advertisements altogether. Nonetheless, certain participants in the first study did recall some aspects of the advertisements; thus, the small effect sizes cannot be fully explained by an avoidance of advertisements. An eye-tracking device would have been a useful way of finding out whether participants looked at the advertisements or not. Alternatively, using a study design in which participants are forced to read the advertisements could have prevented a potential avoidance of advertisements. However, the purpose of this thesis was to explore a personnel selection issue in a specific context; therefore, a more ecologically valid design was preferred.

Another potential explanation for the small effects sizes is found in replication issues. The field of priming is especially concerned with replication issues. For example, one of Bargh et al's (1996) famous stereotype priming studies was replicated in a study by Doyen, Klein, Pichon, and Cleeremans (2012). However, the latter group did not obtain the same results as the former, which sparked a debate that highlighted potential replication issues. Conceptual replications can also be problematic. Conceptual replications are different from exact replications, for researchers use their own manipulations to replicate a psychological concept instead of exactly replicating a study's methodology (Yong, 2012). The two studies presented

here are conceptual replications, because instead of replicating a study's methodology, they are replicating the *concept of priming* in a specific context (using LinkedIn for selection). There have been opposing views on conceptual replications (Yong, 2012). On the one hand, some believe that conceptual replications are stronger than exact replications, because concepts are important in psychology, and because they show better evidence of generalizability across contexts. On the other hand, others argue that concepts cannot be replicated, because manipulations become too subjective -- how can one decide which methodology is right? How similar do manipulations have to be? How much can the methodology be stretched and still count as conceptual replication? The two studies reported here are conceptual replications of priming studies, but in a personnel selection context. It is possible that replicating the concept of priming in this context is too different from exact replications of previous priming studies; therefore, the same results should not be expected.

Moreover, there may be a 'file drawer' problem, where studies with non-significant or negative results go unpublished, and only interest-grabbing studies with strong effect sizes are published. This problem skews the literature, and wastes time and resources as researchers keep failing to replicate studies. At first, it might seem puzzling that the two studies presented here produced such small effect sizes, when very large effect sizes are reported in the priming literature. But there are many factors that could explain a failed replication. For instance, it could be that the original researchers were careless or simply made an error. If the original researchers made an error, it will be very difficult for subsequent researchers to replicate their results. Any subsequent failed attempt to replicate results will most likely go unpublished, and only the original effect sizes will be published. It is also possible that subsequent, replicating researchers did something wrong, which caused the replication failure. Again, a replication that appears not

to work will likely go unpublished and will lead to the 'file drawer' problem, or may spark debates (Doyen et al., 2012). Another explanation for replication failures comes from measurement error. Stanley and Spence (2014) used computer simulations to show that even under ideal conditions, a large range of correlations (or effect sizes) can be found in replications due to measurement error. Therefore, it is possible that measurement error and sampling error caused much smaller effect sizes than what is reported in the priming literature. Moreover, it may be the case that other studies that have found small effect sizes have gone unpublished. Thus, the large effect sizes reported in the priming literature might not reflect a 'true' priming effect size. The effect sizes may have been inflated by the 'drawer file' problem. These large effect sizes were used to determine appropriate sample sizes for the two studies presented here. However, the expected effect sizes may have been too large.

Strengths and limitations

The two studies presented here have strengths and limitations. In regards to the samples used in each study, power analyses were conducted prior to both studies to determine appropriate sample size. Large sample sizes were used in both cases and a main effect of profile quality was found in Study 2, indicating that there was sufficient power to detect effects. However, as was already mentioned, 'true' priming effects may be smaller than the large effect sizes reported in the literature.

A strength of the studies presented here is the time and resources devoted to pre-testing the materials. The profiles and advertisements were all carefully pre-tested to ensure they were appropriate for the studies. However, a limitation of Study 1 is that only the perceived valence of advertisements was pre-tested, and not the perceived stereotypes. According to the category accessibility theory, a prime activates a category, which then influences a reaction. Based on

theory and previous research, it was hypothesized that the athletic and obesity stereotypes would influence the related traits of self-discipline and activity. However, the perceived stereotypes (athletic and obese) in these advertisements were never pre-tested; therefore, it is possible that the advertisements did not activate these stereotypical categories.

Another limitation is the absence of manipulation checks. Because supraliminal priming is a sensitive mechanism that requires participants to be unaware of the study's true purpose, it would be difficult to check whether the manipulation was effective without hinting at the study's true purpose. However, conducting a pilot study on a smaller sample prior to conducting Study 1 could have been useful. In this pilot study, participants could have looked at one profile and then answered a short questionnaire on affect, to ensure they were positively or negatively primed (global affective reaction theory) and a questionnaire on athletic and obesity stereotypes, to ensure the corresponding stereotypes were primed (category accessibility theory).

Because it would be harder to make a hiring decision based on an ambiguous resume, the priming effect of advertisements may have been stronger on an ambiguous resume than on a clearly good or clearly bad resume. A limitation of Study 2 is the lack of an 'ambiguous resume' condition. It could have been interesting to have an 'ambiguous resume' condition in which participants would see a resume with few details on the applicant's education and experience. The 'ambiguous resume' variable would have been a nice addition to Study 2 'profile quality' condition, which already contained a good and a bad profile.

Implications

The two studies reported here have several practical and theoretical implications. First, these studies contribute to the scarce personnel selection research exploring the use of social media. The results presented here suggest that using LinkedIn for personnel selection purposes

might not be problematic with respect to priming effect of advertisements. Few studies have explored the effects of using social media for personnel selection; however, new academic trends are pushing researchers to study social media (Caers and Castelyns, 2011; Roulin & Bangerter, 2013). The two studies presented here add to the scarce research of social media (specifically, LinkedIn) used in personnel selection, and show that, at least in regards to the advertisements, using LinkedIn might not induce selection biases.

A second theoretical contribution is made to the field of priming. The studies presented here are important from a meta-analytical point of view, because the results will add to other priming studies. It is difficult to know a true effect size from a single study, which is why meta-analyses are extremely useful (Stanley & Spence, 2014). Although the results reported here are different from published priming studies in terms of effect sizes, aggregating all effect sizes from priming studies might help in finding a more 'true' effect size for priming.

Practically, the findings reported here might be reassuring to LinkedIn users, because they suggest that, at least in regards to the advertisements, using LinkedIn as an assessment tool is not biasing the selection process. Thus, LinkedIn users should be glad to hear that advertisements might not influence their chances of getting a job offer.

A second, less appealing implication is that LinkedIn advertisements might not be as effective as they should be for marketing purposes. In Study 1, most participants (65% of the sample) reported not having seen the advertisements, or if they did notice them, they did not pay much attention to them (e.g. "I don't remember what was advertised, but I think there were some small ads on the side"). This could be due to avoidance strategies developed by experienced Internet users (Stenfors et al., 2003). Advertisement campaigns can be costly; therefore, marketers and organizations should be aware that advertising on LinkedIn might not be efficient.

Future directions

The studies presented here are a first attempt at exploring one potential effect of using LinkedIn for selection purposes. Although researchers are starting to study social network sites, the effects of using these media for selection purposes are still unclear. Future research should try to deepen the knowledge of the ways in which websites such as LinkedIn are used by organizations. How is LinkedIn used for selection? Is it used for recruitment, as a pre-screening tool, or is it used for selection? Qualitative research might help clarify the ways in which these network sites are used.

Future research might also focus on the effects of using social media in other organizational functions, such as teamwork and corporate communication. Social network sites have great potential for workplace-related studies, and industrial-organizational psychology should take interest in these websites and their effects in various processes.

Conclusion

To conclude, the two studies presented here found no evidence of priming effects of LinkedIn advertisements on ratings of applicants' suitability for a job, or on ratings of applicants' personality traits. This is surprising considering the large effect sizes reported in previous priming studies; however, some factors could explain the small effect sizes found. The research on social network sites used for selection purposes remains scarce. The present research is a preliminary effort to understand the uses of social network sites such as LinkedIn as part of the personnel selection process. Nonetheless, further academic attention is warranted.

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Appendix A

CellCom Inc.

Customer Service Representative

CellCom is a small Toronto-based cellphone company founded in 2005. At CellCom, we are committed to providing superior cellphone services. We have a loyal client base in the Greater Toronto Area, and we are known for our customer service – for us, customers are a priority. We are looking for a new customer service representative with great interpersonal skills. We are looking for a **disciplined** employee who can perform in a **fast-paced** environment.

Position responsibilities:

- Confer with customers by telephone or in person to provide information about products or services, take or enter orders, cancel accounts, or obtain details of complaints.

- Keep records of customer interactions or transactions, recording details of inquiries, complaints, or comments, as well as actions taken.

- Check to ensure that appropriate changes were made to resolve customers' problems.

- Determine charges for services requested and arrange for billing.

- Resolve customers' service or billing complaints by performing activities such as exchanging merchandise, refunding money, or adjusting bills.

Required skills:

- Active Listening
- Communication skills
- Service Orientation
- Persuasion

Appendix B

Profile 1:

Lillie Hayden
Undergraduate Student at University of Toronto
Canada

| Previous | Parma, Brookes, Starbucks |
| Education | University of Toronto |

46
connections

Background

 Experience

Server
Parma
June 2012 – July 2013 (1 year 2 months) | Toronto, Canada Area

- Interacted with customers to provide a pleasant experience.
- Took orders from customers and gave them to kitchen staff.

Sales Associate
Brookes
April 2011 – August 2012 (1 year 5 months) | Toronto, Canada Area

- Greeted store customers.
- Provided assistance and gave fashion advice to customers.

Barrista
Starbucks
May 2010 – May 2011 (1 year 1 month) | Toronto, Canada Area

- Prepared specialty coffees and drinks.
- Handled payments using the cash register.

 Education

University of Toronto
Bachelor of Arts (BA), Communication Studies
2010 – 2014 (expected)

Profile 2:

Jenna Magee
Undergraduate Student at Western University
Canada

Previous   Sears, Champions Day Camp, Market Fresh
Education   Western University

46
connections

Background

Experience

Sales Associate
Sears
April 2012 – August 2013 (1 year 5 months) | London, Canada Area

- Responded to customer concerns.
- Completed timely and appropriate down-stocking of product.

Cousellor
Champions Day Camp
June 2011 – August 2011 (3 months) | London, Canada Area

- Took care of groups of 6-year-old children and ensured their safety and entertainment.
- Gave information to parents and responded to concerns.

Cashier
Market Fresh
May 2010 – May 2011 (1 year 1 month) | London, Canada Area

- Greeted customers and scanned grocery items.
- Handled payments using the cash register.

Education

Western University
Bachelor of Arts (BA), Sociology
2010 – 2014 (expected)

Profile 3:

Eva Broganos
Undergraduate Student at Queen's University
Canada

Previous   College Pro, Subway, The Wellness Clinic
Education   Queen's University

46
connections

Background

Experience

Painter
College Pro
April 2013 – August 2013 (5 months) | Kingston, Canada Area

- Painted interior and exterior walls and fences.
- Met with clients to understand their needs.

Sandwich artist
Subway
April 2011 – August 2012 (1 year 5 months) | Kingston, Canada Area

- Greeted and served customers.
- Prepared food and maintained food safety standards.

Volunteer Coordinator
The Wellness Clinic
January 2010 – August 2011 (1 year 8 months) | Kingston, Canada Area

- Arranged schedules for volunteers.
- Trained new volunteers and implemented weekly feedback meetings.

Education

Queen's University
Bachelor of Arts (BA), Psychology
2010 – 2014 (expected)

Appendix C

Plus-size clothing/negative advertisement:

ADS YOU MAY BE INTERESTED IN

Clothes don't fit?

The world may not be built for
you. But we have the clothes
you'll need to navigate it.

Athletic clothing/positive advertisement:

ADS YOU MAY BE INTERESTED IN

**Greatness should
look good too**

Sylish, affordable athletic apparel.
Now look as good as you'll feel!

Appendix D

Between-subjects one-way ANOVAs:

H1: No significant main effects of advertisement valence on profile ratings were found for the second profile, $F(2, 101) = .94$, $p = .39$, $\eta^2_p = .02$, or the third profile, $F(2, 101) = 2.07$, $p = .13$, $\eta^2_p = .04$. Descriptive statistics for each profile are shown in Table D1.

Table D1.

Descriptive Statistics for Outcome Variable (Profile Rating) by Ad Valence Condition

Ad Valence	Profile 2	Profile 3
Positive	3.56 (.86)	2.77 (.83)
None	3.42 (.94)	2.89 (.90)
Negative	3.71 (.91)	3.18 (.87)

Note. $N_2 = 104$, $N_3 = 104$

H2: No significant main effects of advertisement valence on self-discipline ratings were found for profile 2, $F(2, 101) = .95$, $p = .39$, $\eta^2_p = .02$, or profile 3, $F(2, 101) = .30$, $p = .74$, $\eta^2_p = .01$. Descriptive statistics are provided in Table D2. No significant main effects of advertisement valence on activity ratings were found for profile 2, $F(2, 101) = 1.18$, $p = .31$, $\eta^2_p = .02$, or profile 3, $F(2, 101) = 2.16$, $p = .12$, $\eta^2_p = .04$. Descriptive statistics are shown in Table D3. Finally, no significant main effects of advertisement valence on straightforwardness ratings were found for profile 2, $F(2, 101) = 1.18$, $p = .31$, $\eta^2_p = .02$, or profile 3, $F(2, 101) = 2.16$, $p = .12$, $\eta^2_p = .04$. See Table D4 for descriptive statistics.

Table D2.

Descriptive Statistics for Outcome Variable (Self-Discipline) by Ad Valence Condition

Ad Valence	Profile 2	Profile 3
Positive	3.97 (.71)	3.74 (.82)
None	3.81 (.67)	3.86 (.87)
Negative	4.03 (.75)	3.89 (.80)

Note. $N_2 = 104$, $N_3 = 104$

Table D3.

Descriptive Statistics for Outcome Variable (Activity) by Ad Valence Condition

Ad Valence	Profile 2	Profile 3
Positive	4.31 (.76)	3.49 (.92)
None	4.37 (.81)	4.72 (.70)
Negative	4.08 (.94)	3.89 (.80)

Note. $N_2 = 104$, $N_3 = 104$

Table D4.

Descriptive Statistics for Outcome Variable (Straightforwardness) by Ad Valence Condition

Ad Valence	Profile 2	Profile 3
Positive	3.40 (.77)	3.46 (.78)
None	3.36 (.64)	3.50 (.86)
Negative	3.51 (.92)	3.66 (.80)

Note. $N_2 = 104$, $N_3 = 104$

Appendix E

Bad profile:

Jenna Magee
Unemployed
Canada

Previous   Staff Plus
Education   Centennial High School

46
connections

Background

Experience

Office Cleaner
Staff Plus
October 2012 – September 2013 (1 year) | Toronto, Canada Area

- Dusted furniture and cleaned floors.
- Emptied trash and re-installed liners.

Education

Centennial High School
High School Diploma

Good profile:

Jenna Magee
Undergraduate Student at Western University
Canada

Previous	Sears, Champions Day Camp, Market Fresh
Education	Western University

46
connections

Background

Experience

Sales Associate
Sears
April 2012 – August 2013 (1 year 5 months) | London, Canada Area

- Responded to customer concerns.
- Completed timely and appropriate down-stocking of product.

Cousellor
Champions Day Camp
June 2011 – August 2011 (3 months) | London, Canada Area

- Took care of groups of 6-year-old children and ensured their safety and entertainment.
- Gave information to parents and responded to concerns.

Cashier
Market Fresh
May 2010 – May 2011 (1 year 1 month) | London, Canada Area

- Greeted customers and scanned grocery items.
- Handled payments using the cash register.

Education

Western University
Bachelor of Arts (BA), Sociology
2010 – 2014 (expected)

Appendix F

Negative advertisement:

Positive advertisement: