Smile Big or Not? Effects of Smile Intensity on Perceptions of Warmth and Competence

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While previous work has focused on the positive impact of smiles on interpersonal perceptions, this research proposes and finds that smile intensity differentially affects two fundamental dimensions of social judgments—warmth and competence. A marketer displaying a broad smile, compared to a slight smile, is more likely to be perceived by consumers as warmer but less competent. Furthermore, the facilitative effect of smile intensity on warmth perceptions is more prominent among promotion-focused consumers and in low-risk consumption contexts, while the detrimental effect of smile intensity on competence perceptions is more likely to occur among prevention-focused consumers and in high-risk consumption situations. Field observations in a crowdfunding context further indicate that the effects of smile intensity on warmth and competence perceptions have downstream consequences on actual consumer behaviors.

Keywords: smile intensity, warmth perceptions, competence perceptions, face-based inferences, social cognition

S miles are widely used as a marketing tool to produce positive impressions among consumers. Service with a smile is an established mantra in customer relationship management (Lee and Lim 2010) and smiling faces are omnipresent in advertisements (Petroshius and Crocker 1989). A substantial amount of research suggests that smiles are powerful social forces that positively influence interpersonal judgments in a myriad of ways. For instance, it has been found that people who express genuine smiles are perceived to be kinder, more sociable, more honest (Thornton 1943), more pleasant (Mueser et al. 1984), more carefree (Deutsch, LeBaron, and Fryer 1987), and more polite (Bugental 1986) than people who do not smile.

The vast amount of evidence supporting the interpersonal benefits of smiles may lead one to believe that smiles always convey positive information—and hence, the bigger the smile, the better. Indeed, research has documented that people sometimes deliberately intensify positive emotional displays to receive favorable social feedback (Pugh 2001). For example, service employees often exaggerate their positive emotional expressions in order to enhance consumers' consumption experiences (Barger and Grandey 2006). In this research, however, we caution that bigger and broader smiles sometimes bring forth undesirable consequences.

Integrating the social-functional perspective on emotion (Fridlund 1992; van Kleef, De Dreu, and Manstead 2004)

with the stereotype content model (SCM) of social judgments (Fiske et al. 2002; Judd et al. 2005), we hypothesize that smile intensity differentially influences two fundamental dimensions of social judgment—warmth and competence. Displaying a full or broad smile, compared to a partial or slight smile, leads a marketer (defined as someone who promotes or sells a product or service) to be perceived as warmer but less competent.

We examine this main thesis in five studies, in which we manipulate or measure smile intensity in photos of marketers. Studies 1a and 1b lend support to our hypothesis that, compared to a slight smile, a broad smile increases warmth perceptions but decreases competence perceptions. Study 2a examines regulatory focus as a boundary condition for these effects, and shows that the facilitative effect of smile intensity on warmth perceptions is more prominent among promotion-focused consumers, whereas the detrimental effect on competence perceptions is more likely among prevention-focused consumers. Study 2b documents perceived consumption risk as another boundary condition: smile intensity is more likely to increase warmth perceptions when consumption risk is low, but decrease competence perceptions when consumption risk is high. In addition, study 2b shows that these changes in warmth and competence perceptions predict consumers' purchase intentions. Study 3 takes the investigation out of the laboratory into a field setting. Using data from a crowdfunding website (i.e., Kickstarter.com), we demonstrate that smile intensity influences different types of consumer behaviors (e.g., money pledged, support in social media).

THEORY AND HYPOTHESES

Fundamental Dimensions of Social Judgments

The stereotype content model (SCM) was originally developed by Fiske and colleagues (2002) to explain differential perceptions of social groups, but has since been applied to judgments of individuals (Judd et al. 2005), brands (Kervyn, Fiske, and Malone 2012), and organizations (Aaker, Vohs, and Mogilner 2010). The SCM proposes that interpersonal judgments are captured along two fundamental dimensions that likely reflect evolutionary pressures. In order to survive and reproduce, social animals must quickly determine others' intentions (e.g., to help or harm) and their ability to act on them. Warmth judgments relate to perceived intentions and typically include evaluations of kindness, friendliness, trustworthiness, and helpfulness (Aaker et al. 2010), whereas competence judgments reflect perceived ability and include perceptions of effectiveness, intelligence, power, and skillfulness (Hoegg and Lewis 2011). Together, these two dimensions "account almost entirely for how people characterize others" (Fiske, Cuddy, and Glick 2007, 77).

Critically, people can make social judgments simply by viewing a photograph of the target. For instance, people perceive individuals with babyish facial configurations (i.e., large round eyes, small nose and chin) as honest and approachable (Berry and Brownlow 1989), which leads them to evaluate a company's negative publicity less critically when the firm's spokesperson has a babyish face (Gorn, Jiang, and Johar 2008). Another line of research finds that when a salesperson's face is blended with features of a celebrity face, consumers perceive the salesperson as more trustworthy and report higher purchase intentions (Tanner and Maeng 2012). Extending this body of research, which focuses on fixed and stable facial configurations, we propose that dynamic and ephemeral facial expressions, such as smiles, also have consequential effects on social perceptions of the target.

Smiles and Social Judgments

The social-functional perspective on emotion asserts that emotions have evolved to help facilitate social interactions by signaling important information about the expresser (Fridlund 1992; Keltner and Haidt 1999). Darwin (1872) was among the first to propose human emotions evolved and adapted over time, resulting in a certain level of universality in facial expressions across age, gender, and culture. Due to such universality, people are able to make quick and spontaneous inferences from facial expressions about the expresser (van Kleef et al. 2004). This view is supported by recent neuroimaging research that shows exposure to facial expressions tends to fire up brain activity in the amygdala, medial prefrontal cortex (mPFC), and superior temporal sulcus (STS), areas that perform primary roles in forming impressions and judgments (Ames, Fiske, and Todorov 2011).

Smiles, in particular, are believed to have evolved to assist group living by facilitating cooperation among unrelated individuals (Owren and Bachorowski 2001). A significant amount of literature substantiates that smiles communicate positive intent, agreement, or assent, and are used to encourage and support social interactions (Abe, Beetham, and Izard 2002). This is true even among nonhuman animals, as evolutionary studies suggest that mammalian species like chimpanzees and rhesus monkeys show bared-teeth display, an expression homologous with human smiles, in affiliative contexts such as grooming or sexual solicitation (Preuschoft and van Hooff 1997). Similarly, in interpersonal communications, people often display smiles when they intend to form cooperative relationships (Mehu and Dunbar 2008) or seek interpersonal rapport (Hennig-Thurau et al. 2006). From an observer's perspective, smiles are thus often interpreted as signaling an intention to build a friendly relationship ("Let's be friends"; Fridlund 1994).

Facial expressions convey not only the expresser's emotions and intentions, but also the intensity of those feelings,

with more intense facial expressions connoting more intense emotions and desires (Ekman, Friesen, and Ancoli 1980). There is some evidence that broad versus slight smiles have different social consequences, though the cause of this difference has yet to be explored. For example, women with the most intense smiles in photographs were more likely to be married by age 27 (Harker and Keltner 2001), and less likely to divorce later in life (Hertenstein et al. 2009). One interpretation of these findings is that broader smiles are associated with greater levels of sociability, which lead to more positive relationship outcomes (Scarr 1992). Thus, compared to slight smiles, broad smiles may deliver stronger signals that the expresser desires to make social connections, which increase the perception that the expresser is friendly and approachable. Hence, we propose that broad (vs. slight) smiles enhance warmth judgments of the expresser.

On the flip side, broad smiles may also signal that the individual is less competent. Research has associated broad smiles with reduced aggression, performance, and dominance—traits that help one achieve status and power (Dabbs 1997; Kraus and Chen 2013). For example, Dabbs (1997, 46) found a negative relationship between smile intensity and dominance, defined as "a quality that helps one win whatever one wants to win." Other research found that professional mixed martial arts fighters who displayed full smiles in prefight photographs were more likely to lose their match than those who smiled less intensely, presumably because "smiles are an unintentional nonverbal sign of reduced physical dominance" (Kraus and Chen 2013, 276). Consistent findings can also be gathered from animal research, which documents that bared-teeth display in chimpanzees is an indicator of submission and acceptance of subordinate status (de Waal and Luttrell 1985).

These findings are in line with the competition hypothesis of smiling and laughter, which proposes that smiles function to implement social hierarchies and signal low motivation to compete for status (Mehu and Dunbar 2008). Thus, a broad smile may suggest that the individual is content with the current situation and unmotivated to change or improve the status quo (Bodenhausen, Kramer, and Süsser 1994). In addition, an individual expressing a broad smile may be perceived as manifesting a carefree, happy-go-lucky attitude (Deutsch et al. 1987). Such an attitude is at odds with traits associated with competence, such as determination, foresightedness, and seriousness (Fiske et al. 2007). Accordingly, we propose that individuals with broad smiles are perceived as less competent than those with slight smiles.

In sum, while broad (vs. slight) smiles convey that the marketer is friendly and sociable, traits that are associated with warmth, they also suggest that the marketer is unaggressive and submissive, traits that are antithetical to competence. Hence, we hypothesize that smile intensity

has opposite effects on consumers' warmth and competence perceptions of the marketer.

H1: Compared to a slight smile, a broad smile will lead to higher perceptions of the marketer's warmth, but lower perceptions of the marketer's competence.

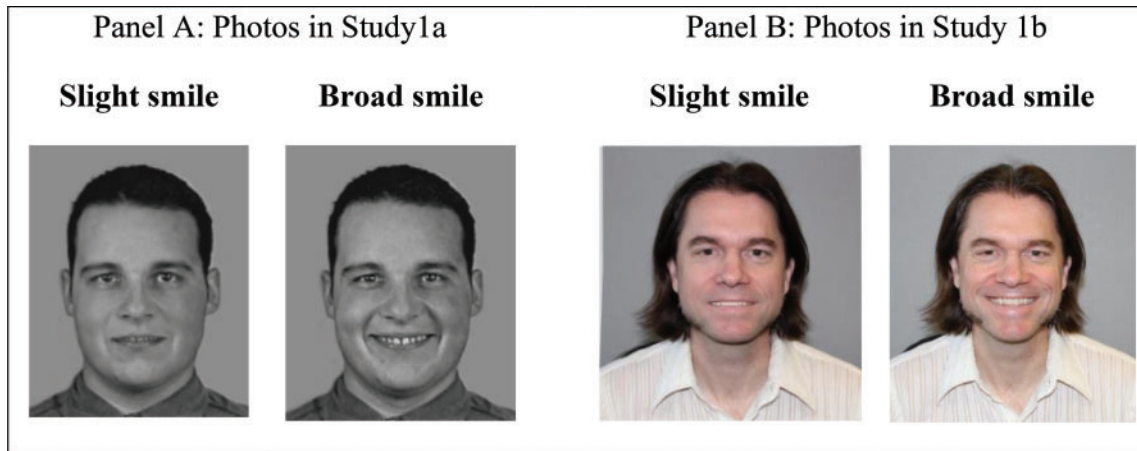## STUDIES 1A AND 1B: THE INITIAL EVIDENCE

Study 1a

Stimulus. To test hypothesis 1, we selected photos of slight and broad smiles from the Montreal Set of Facial Displays of Emotion (MSFDE) created by Beaupré and Hess (2006). The MSFDE consists of digitally morphed photos of facial expressions of different emotions (e.g., happiness, fear, sadness) at five levels of intensity. We selected two photographs from the MSFDE, with level 2 (slight) and level 5 (broad) smiles from the same displayer (see figure 1, panel A). Prior literature has determined that, at a muscular level, smile intensity is indicated by the amplitude of the zygomatic major movement (the muscle group that pulls up the lips) (Ekman 1993). Consistently, smiles in the two selected photos vary on the level of zygomatic major muscle movement, producing more or less intense smiles. The two photos are consistent in other appearance cues, such as head orientation (Farroni, Menon, and Johnson 2006), brow position (Sekunova and Barton 2008), and gaze direction (Adams and Kleck 2003).

Participants and Procedure. We recruited 123 individuals from Amazon's Mechanical Turk (Mturk) to participate in the study ($M_{age} = 31.28$, ranging from 18 to 65; 55 females). Participants were told that the study examines people's first impressions. They were shown one of the two photos and asked to report warmth and competence perceptions of the target on two four-item scales (warmth: warm, kind, friendly, sincere; $1 =$ not at all, $7 =$ very much so; $\alpha = .94$; competence: competent, intelligent, capable, skillful; $1 =$ not at all, $7 =$ very much so; $\alpha = .93$; Aaker et al. 2010; Cuddy, Fiske, and Glick 2007).

Next, we collected data on two confound checks. Prior research suggests that smiles may vary in authenticity—the degree to which the smile is consistent with the expresser's internal feelings (Hennig-Thurau et al. 2006)—and that smiles may affect the perceived attractiveness of the target (Mueser et al. 1984). To ensure our smile intensity manipulation did not inadvertently affect these variables, we asked participants to report how authentic the smile is and how attractive the target is ($1 =$ not at all, $7 =$ very much so; Gorn et al. 2008; Mueser et al. 1984). Finally, participants responded to additional questions, including a manipulation check of smile strength ($1 =$ displays no smile, $7 =$ displays a broad smile; Barger and Grandey 2006), and provided demographic information.

Results. We first conducted analyses on the manipulation and confound checks. Independent sample *t*-tests showed that ratings of smile intensity were significantly higher when the target displayed a broad rather than a slight smile ($M_b = 5.28$, $M_s = 4.61$, $t = 2.60$, $p = .01$). Ratings of perceived authenticity ($M_b = 4.87$, $M_s = 4.53$, $p > .10$) and target attractiveness ($M_b = 3.03$, $M_s = 3.42$, $p > .10$) did not differ across the two conditions.

We next tested hypothesis 1 regarding the differential effect of smile intensity on perceptions of warmth and competence. A 2 (smile intensity: slight, broad) $\times$ 2 (social judgments: warmth, competence) mixed ANOVA revealed a significant interaction effect ($F(1, 121) = 26.90$, $p < .001$; see figure 2, panel A). Planned contrasts showed that judgments of warmth in the broad smile condition were significantly higher than the slight smile condition ($M_b = 5.28$, $M_s = 4.53$; $F(1, 121) = 23.28$, $p < .001$). Competence judgments, however, were significantly lower in the broad smile condition than the slight smile condition ($M_b = 4.43$, $M_s = 4.83$; $F(1, 121) = 6.29$, $p = .01$). The same pattern of results was observed when we included authenticity and perceived attractiveness as covariates ($F(2, 119) = 19.68$, $p < .001$). These findings support hypothesis 1 and rule out authenticity and attractiveness as potential confounds.

Study 1b

Stimulus. To ensure the effects obtained in study 1a were not due to particularities of the expresser, we created a new set of photos of a different target (see figure 1, panel B). Specifically, we took photos of a middle-aged Caucasian male volunteer who was instructed to pose first with a neutral expression and then with a broad smile. Following the
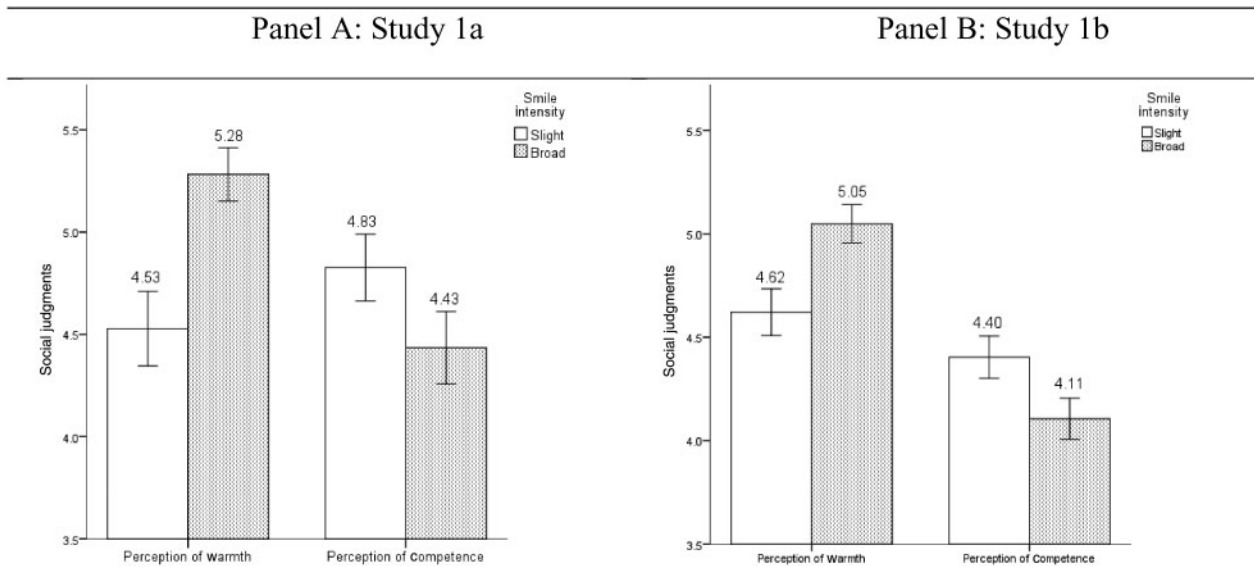
procedure used in the MSFDE (Beaupré and Hess 2006), we created a slight smile photo by digitally blending 40% of the broad smile with the image of the neutral expression, using Morph Age Pro 4.0 software (Creaceed S.P.R.L. 2008). Adobe Photoshop was used to fix blurriness caused by morphing. We also carefully reviewed the photos to ensure they were equivalent in other appearance cues.

A pretest was conducted to test the effectiveness of the smile intensity manipulation. Forty-nine undergraduate students were shown either the slight or broad smile photograph, and rated the expresser's smile intensity, smile authenticity, and attractiveness using the same scales as study 1a. Independent *t*-test results indicate that the broad (vs. slight) smile received higher ratings on perceived smile intensity ($M_b = 5.58$, $M_s = 4.69$, $t = 2.55$, $p = .01$). Yet ratings of perceived authenticity ($M_b = 4.00$, $M_s = 3.83$, $p > .10$) and target attractiveness ($M_b = 2.50$, $M_s = 2.57$, $p > .10$) did not differ across the two smile conditions.

Participants and Procedure. Two-hundred nineteen undergraduate students ($M_{age} = 22.10$, ranging from 18 to 38; 119 females, five unreported sex) from a large public university participated in this study. Unlike study 1a, study 1b examined social perceptions in a marketing context. In particular, participants viewed a "profile photo" of a stockbroker with a slight or broad smile, and rated how likely they believed the broker was to engage in certain behaviors (1 = highly unlikely, 7 = highly likely; Judd et al. 2005). Four of these behaviors related to the warmth dimension of social judgments (e.g., "he always smiles at others just to make their day better," "he rarely talks to others in the workplace" [reverse coded]; $\alpha = .74$), and the other four

FIGURE 2

THE INTERACTION EFFECT OF SMILE INTENSITY ON PERCEPTIONS OF WARMTH AND COMPETENCE IN STUDIES 1A AND 1B

behaviors related to the competence dimension (e.g., "he has lots of clients because of his excellent skills," "he is unassertive when making customer-related decisions" [reverse coded]; $\alpha = .77$). At the end of the study, participants responded to additional questions, including those about demographic information.

Results. Replicating the results of study 1a, a 2 (smile intensity) $\times$ 2 (social judgments) mixed ANOVA revealed a significant interaction effect ($F(1, 217) = 21.23$, $p < .001$; see figure 2, panel B). Participants in the broad smile condition, compared to the slight smile condition, generated higher warmth ratings ($M_b = 5.05$, $M_s = 4.62$; $F(1, 217) = 14.75$, $p < .001$), but lower competence ratings ($M_b = 4.11$, $M_s = 4.40$; $F(1, 217) = 7.15$, $p < .01$).

DISCUSSION

Together, studies 1a and 1b show that the impact of smile intensity on consumer perceptions varies along the fundamental dimensions of social judgments. Findings provide consistent support for the hypothesis that individuals displaying broad smiles tend to be judged as warmer but less competent than those displaying slight smiles. These effects are robust across different sets of stimuli and different measurements of warmth and competence.

A potential confound for these results is perceptions of the displayer's persuasive intent.[1] Extant research suggests that consumers are often aware of marketers' attempts to

influence them (Friestad and Wright 1994), and may sometimes view persuasive tactics as inappropriate or unethical (Kirmani and Zhu 2007). Consumers may perceive a marketer's broad (vs. slight) smile as a strong or an inappropriate persuasive attempt, which consequently influences their perceptions of the marketer (Kirmani and Campbell 2009). To assess the possible role of persuasive intent in studies 1a and 1b, we conducted two post-tests (study 1a: $N = 60$; study 1b: $N = 55$). In each post-test, participants were exposed to the experimental stimuli and completed two multi-item scales that capture different aspects of persuasive intent. The first scale, adapted from Campbell (1995), measured participants' knowledge or awareness of the marketer's persuasive intent (e.g., "The person appears to have strong intention to persuade people," $1 = $ strongly disagree, $7 = $ strongly agree, $\alpha = .85$ and $.89$, for studies 1a and 1b, respectively). The second scale, adapted from Kirmani and Zhu (2007), measured perceived inappropriateness of the persuasion attempt (e.g., "Do you think the person tries to persuade people by inappropriate means?" $1 = $ not at all, $7 = $ extremely; $\alpha = .98$ and $.98$, for studies 1a and 1b). Findings indicate that neither persuasion knowledge (study 1a: $M_b = 3.33$, $M_s = 3.04$, $p > .10$; study 1b: $M_b = 3.17$, $M_s = 3.44$, $p > .10$) nor perceived inappropriateness of the persuasion attempt (study 1a: $M_b = 2.85$, $M_s = 2.63$, $p > .10$; study 1b: $M_b = 2.91$, $M_s = 3.34$, $p > .10$) was affected by smile intensity.

In the next two studies, we investigate consumption contexts as boundary conditions for the observed effects of smile intensity on social perception. To the extent that a

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1   We thank the review team for this suggestion.

consumption context highlights either the warmth or the competence dimension in social judgments, the effect of smile intensity on the emphasized dimension is strengthened and the effect on the less emphasized dimension is attenuated. We examine two such consumption contexts— regulatory focus (study 2a) and perceived risk (study 2b).

STUDY 2A: THE BOUNDARY CONDITION—REGULATORY FOCUS

It is well established that regulatory focus impacts consumers' information processing and perception (Higgins 1997). Promotion-focused individuals emphasize advancement and growth and are in a state of eagerness to attain gains. As a result, they are likely to pursue goals related to attainment of positive outcomes and are sensitive to the presence of positive cues. On the other hand, prevention-focused individuals are concerned with protection and safety and are in a state of vigilance to avoid losses. Thus, prevention-focused individuals are motivated to minimize negative outcomes and tend to focus on negative cues (Aaker and Lee 2001; Pham and Higgins 2005). Germane to our research, recent work demonstrates that people may derive different social judgments from the same behavior, in accordance with their promotion or prevention goal. For example, a fast speech rate is associated with confidence among promotion-focused individuals, but is interpreted as a sign of recklessness by prevention-focused people (Cesario and Higgins 2008).

Similarly, we propose that regulatory focus moderates judgments of slight and broad smiles. Promotion-focused consumers are likely to emphasize the positive affordance of a smile, and interpret broad smiles as the marketer's willingness to affiliate or help, leading to higher warmth ratings. At the same time, these consumers' approach tendencies make them less likely to focus on negative signals of a smile, such as decreased competence (Pham and Higgins 2005). In contrast, prevention-focused consumers are wary of potential negative outcomes (Crowe and Higgins 1997), and are more likely to interpret broad smiles as signals of lack of skill or ability, resulting in lower ratings of the marketer's competence. Their focus on negative cues also renders them less likely to make favorable warmth judgments associated with broad smiles.

> **H2:** The effect of smile intensity on social judgments is moderated by consumers' regulatory focus such that (a) a broad (vs. slight) smile is more likely to enhance warmth perceptions when consumers are promotion-focused (vs. prevention-focused); (b) a broad (vs. slight) smile is more likely to undermine competence perceptions when consumers are prevention-focused (vs. promotion-focused).

Stimulus

Following the procedures described in study 1b, we developed a new set of photos featuring broad and slight smiles using a different middle-aged Caucasian male. These photos were presented as part of an advertisement for a lawyer. Regulatory focus was manipulated in the advertising message (see figure 3; Aaker and Lee 2001). While keeping the overall content comparable across the two conditions, the main body of the ad copy accentuated either a promotion or a prevention focus by highlighting messages related to "gains" or "losses." Specifically, to increase participants' motivation to seek personal advancement and gains, the main body of the promotion-focused ad copy stated: "If you want to get full compensation, call me to handle your case." To induce a state of vigilance and increase motivation to mitigate losses, the main body of the prevention-focused ad copy read, "If you are severely injured from an accident, call me to handle your case."

To test the validity of the regulatory focus manipulation, 50 Mturk participants (M_{age} = 32.98, ranging from 19 to 68; 35 females) were randomly exposed to either the promotion-focused or the prevention-focused advertisement. They reported whether the ad made them think about losing versus winning the case (1 = not losing the case, 7 = winning the case) and losing versus gaining financial assets (1 = avoiding financial loss, 7 = gaining financial benefit). To check potential confounds, participates reported how much attention they paid to the ad (1 = not at all, 7 = very much), how involved they were in processing the ad (1 = not at all involved; 7 = very much involved), and perceived difficulty of the advertised legal service (1 = extremely easy, 7 = extremely difficult). Results revealed that participants in the promotion- (vs. prevention-) focus condition thought about winning the case rather than not losing the case (M_{pro} = 5.19, M_{pre} = 4.21; t = 2.24, p < .05), and gaining financial benefit rather than avoiding financial loss (M_{pro} = 5.23, M_{pre} = 4.25; t = 2.13, p < .05). The regulatory focus manipulation did not affect attention (M_{pro} = 5.15, M_{pre} = 4.92, p > .10), involvement (M_{pro} = 5.19, M_{pre} = 5.50, p > .10), or perceived difficulty of the service (M_{pro} = 3.23, M_{pre} = 3.58, p > .10).

Participants and Procedures

Study 2a adopts a 2 (smile intensity: broad, slight) × 2 (regulatory focus: promotion, prevention) × 2 (social judgments: warmth, competence) mixed-factorial design, with smile intensity and regulatory focus as between-subjects variables and social judgments as a within-subjects variable. Three hundred twenty Mturk users (M_{age} = 34.95, ranging from 20 to 75; 185 females) participated in the study. Since prior research suggests that mood states may influence the effect of regulatory focus (Pham and Avnet

FIGURE 3

SAMPLE ADVERTISEMENTS USED IN STUDY 2A

2004), we first subjected participants to a procedure that neutralizes their mood (Velten 1968). Specifically, participants read 30 neutral statements (e.g., "The Mississippi River is the third longest river in North America"), displayed on the computer screen for 10 seconds each. Subsequently, participants viewed one of the four advertisements, varying in regulatory focus and smile intensity. They then reported perceptions of warmth and competence of the lawyer, using two four-item scales (warmth: warm, kind, friendly, approachable, $\alpha = .92$; competence: competent, intelligent, capable, skillful, $\alpha = .95$).

In addition, we conducted a manipulation check of smile intensity, and three confound checks for authenticity, target attractiveness, and persuasive intent. The scales for smile intensity and target attractiveness were the same as in study 1a. We measured perceived authenticity with three items adapted from Grandey et al. (2005) ("To what extent does the marketer appear to be putting on an act [reverse coded] / be displaying his true feelings / have actually experienced the expressed emotions," 1 = strongly disagree, 7 = strongly agree, $\alpha = .84$). Similar to the post-tests for studies 1a and 1b, persuasive intent was measured with two scales—persuasion knowledge ($\alpha = .67$) and perceived inappropriateness of the persuasion attempt ($\alpha = .94$). Participants responded to additional questions, including

those about demographic information, at the end of the study.

Results

Manipulation and Confound Checks. We ran a 2 (smile intensity) $\times$ 2 (regulatory focus) ANOVA on participants' perceptions of smile strength. As expected, results showed only a significant main effect of smile intensity ($M_b = 6.09$, $M_s = 4.85$; $F(1, 316) = 103.87$, $p < .001$). The same ANOVA performed on the confound checks—authenticity ($M_b = 3.78$, $M_s = 3.81$; $p > .10$), target attractiveness ($M_b = 3.18$, $M_s = 3.37$; $p > .10$), persuasion knowledge ($M_b = 4.07$, $M_s = 3.84$; $p > .10$), and perceived inappropriateness of the persuasion attempt ($M_b = 3.02$, $M_s = 2.84$; $p > .10$)—revealed no significant main effects or interactions.

Perceptions of Warmth and Competence. We ran a 2 (smile intensity) $\times$ 2 (regulatory focus) $\times$ 2 (social judgments) mixed ANOVA. Consistent with the findings in studies 1a and 1b, the two-way interaction between smile intensity and social judgments was significant ($F(1, 316) = 20.63$, $p < .001$). The predicted three-way interaction was also significant ($F(1, 316) = 3.80$, $p = .05$) (see figure 4).

We decomposed this three-way interaction by performing separate 2 (smile intensity) $\times$ 2 (social judgments) analyses for promotion-focused and prevention-focused participants. Among promotion-focused participants, there was a marginally significant interaction between smile intensity and social judgments ($F(1, 316) = 3.50$, $p = .06$). Contrast analyses revealed that judgments of warmth were greater in the broad smile condition than the slight smile condition ($M_b = 4.93$, $M_s = 4.48$; $F(1, 316) = 16.85$, $p < .001$). However, smile intensity did not affect judgments of competence ($M_b = 4.65$, $M_s = 4.49$; $p > .10$). For participants with a salient prevention focus, the interaction between smile intensity and social judgments was also significant ($F(1, 316) = 20.28$, $p < .001$). Smile intensity did not impact warmth perceptions ($M_b = 4.62$, $M_s = 4.42$; $p > .10$), but judgments of competence were lower in the broad smile condition than the slight smile condition ($M_b = 4.14$, $M_s = 4.67$; $F(1, 316) = 21.26$, $p < .001$). In addition, the same pattern of results persisted when we included smile authenticity, perceived attractiveness, perceived persuasive intent, and perceived appropriateness of the persuasive attempt, as covariates ($F(1, 312) = 4.02$, $p < .05$).
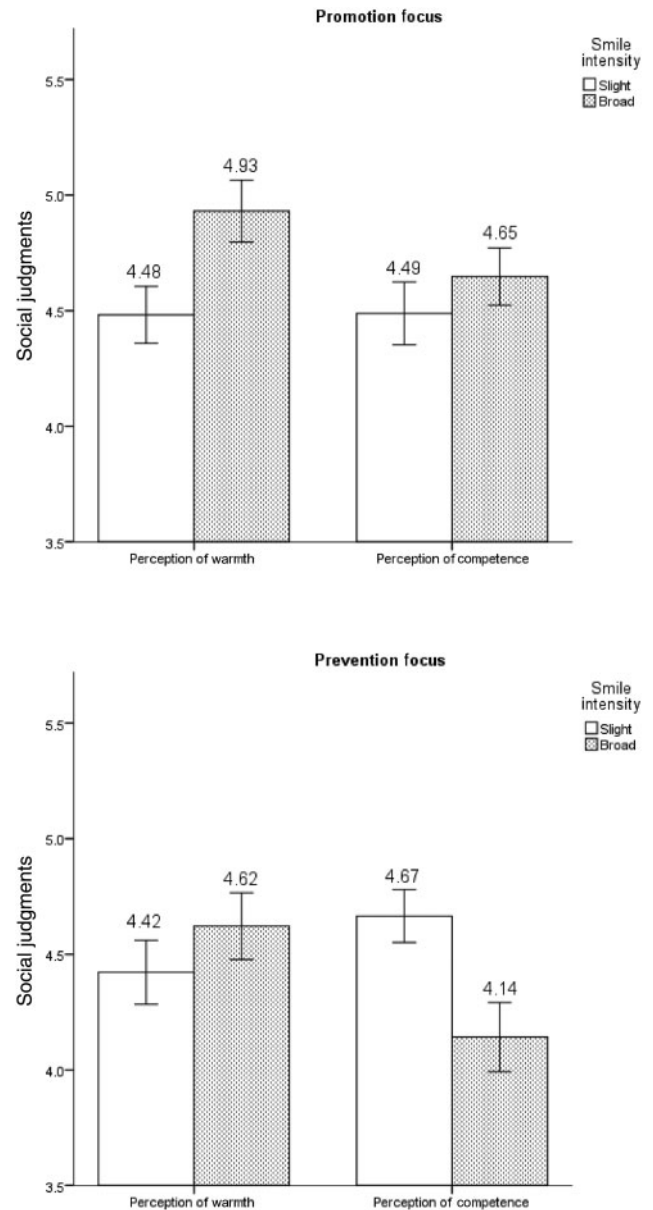
Discussion

Study 2a finds support for hypothesis 2; the enhancement effect of smile intensity on warmth perceptions occurs only for consumers who are promotion-focused, and the reduction effect of smile intensity on competence perceptions ensues only for consumers who are prevention-focused. Furthermore, findings in this study empirically rule out persuasive intent as an alternative explanation for our results.

In study 2b, we explore a different boundary condition for the effect of smile intensity on social perceptions: risk levels associated with consumption. In addition, study 2b goes beyond perceptions of the marketer to measure consumers' purchase intentions as a downstream effect of smile intensity.

STUDY 2B: THE BOUNDARY CONDITION—CONSUMPTION RISK

Perceived consumption risk—the probability and/or magnitude of experiencing adverse consequences after purchasing a product or service (Campbell and Goodstein 2001; Oglethorpe and Monroe 1987)—is an important characteristic inherent in various marketing contexts (Herzenstein, Posavac, and Brakus 2007). Prior research shows that when perceived risk is high, consumers are motivated to adopt strategies that help reduce the risk to a manageable level (Dowling and Staelin 1994), such as relying on familiar or well-known brands (Erdem 1998) or corporate reputations that signal product functionality and performance (Gürhan-Canli and Batra 2004). Similarly, we

FIGURE 4

THE INTERACTION EFFECT OF SMILE INTENSITY AND REGULATORY FOCUS ON WARMTH AND COMPETENCE JUDGMENTS IN STUDY 2A

propose that when perceived risk is high, consumers focus more on perceptions of competence, because this trait helps increase consumer confidence that the marketer can successfully deliver the outcome. As a result, the negative relationship between smile intensity and competence judgments should be more prominent when perceived risk is high. Meanwhile, smile intensity is less likely to

influence warmth perceptions, which are less relevant in reducing risk.

On the other hand, when perceived risk is low, the chance of experiencing negative consequences is low (Oglethorpe and Monroe 1987) and consumers are less concerned about product or service failure (Gürhan-Canli and Batra 2004). Instead, they focus on having a positive and satisfying consumption experience, which to a large extent depends on employee helpfulness and friendliness (Tsai and Huang 2002). Since judgments of warmth rather than those of competence are highlighted in a low-risk marketing context, we expect a broad (vs. slight) smile to enhance warmth perceptions but have no influence on competence perceptions. Formally, we hypothesize:

> **H3:** The effect of smile intensity on social judgments is moderated by the risk level of the consumption context, such that (a) a broad (vs. slight) smile is more likely to enhance warmth perceptions when consumption risk is low (vs. high); (b) a broad (vs. slight) smile is more likely to undermine competence perceptions when consumption risk is high (vs. low).

Research suggests warmth and competence perceptions are important predictors of consumers' behavioral responses (Aaker et al. 2010; Cuddy et al. 2007). As discussed above, consumers are likely to focus on the marketer's competence when perceived risk is high. Thus, compared to a slight smile, a broad smile is expected to decrease consumers' intentions to purchase the product or use the service in a high-risk context. In contrast, low perceived risk is predicted to shift consumers' focus to warmth. Thus, a broad (vs. slight) smile should increase consumers' purchase intentions through enhanced warmth perceptions in a low-risk context.

> **H4:** Compared to a slight smile, a broad smile will lead to higher purchase intentions through warmth perceptions when consumption risk is low, but lower purchase intentions through competence perceptions when consumption risk is high.

Stimulus

To test hypotheses 3 and 4, we created two advertisements of a nutritionist, featuring either a slight or broad smile (see figure 5). Since prior research has suggested that morphing facial images may change facial symmetry or perceived attractiveness of the face (Langlois and Roggman 1990), we used two undoctored photos with different levels of smile intensity in this study to curb potential problems associated with comparison between doctored photos (slight smiles) and undoctored photos (broad smiles). In addition, we used a female marketer to examine whether our effect generalizes across genders.

Specifically, we purchased and downloaded two stock photos from istock.com, an online photograph provider. The two photos show the same woman displaying either a slight or a broad smile. We examined the zygomatic major movement in the two photos to ensure that the two smiles differed on intensity levels and were comparable to the level 2 (slight) and level 5 (broad) smiles in the MSFDE. In addition, we assessed and ensured the two photos were equivalent on other facial cues (e.g., head orientation, brow position, and gaze direction).

Consumption risk was manipulated in an introductory paragraph about nutrition coaching services, which participants were instructed to read before viewing the advertisement. In the high-risk condition, the paragraph ended with a statement that misleading advice or inappropriate dietary adjustment from a nutritionist could lead to serious health-related issues. To maintain consumption risk at a relatively low level, this statement was omitted in the low risk condition.

We tested the validity of the consumption risk manipulation in a pretest by assigning 67 Mturk participants (M_{age} = 36.07, ranging from 20 to 66; 48 females) to read either the high-risk or low-risk message and complete a two-item scale on risk perceptions ("how much risk is involved with nutrition coaching?" 1 = very little risk, 7 = a great deal of risk; "how much risk is involved with purchasing a nutrition coaching service?" 1 = very low-risk purchase, 7 = very high-risk purchase; r = .84; Gürhan-Canli and Batra 2004). In addition, we collected a confound check of perceived importance of the nutrition coaching service ("to what extent is nutrition coaching important to you?" and "how important is nutrition coaching to consumers?" 1 = not at all important, 7 = very important, r = .65). Results revealed that participants in the high- (vs. low-) risk condition perceived the nutrition coaching service to be signif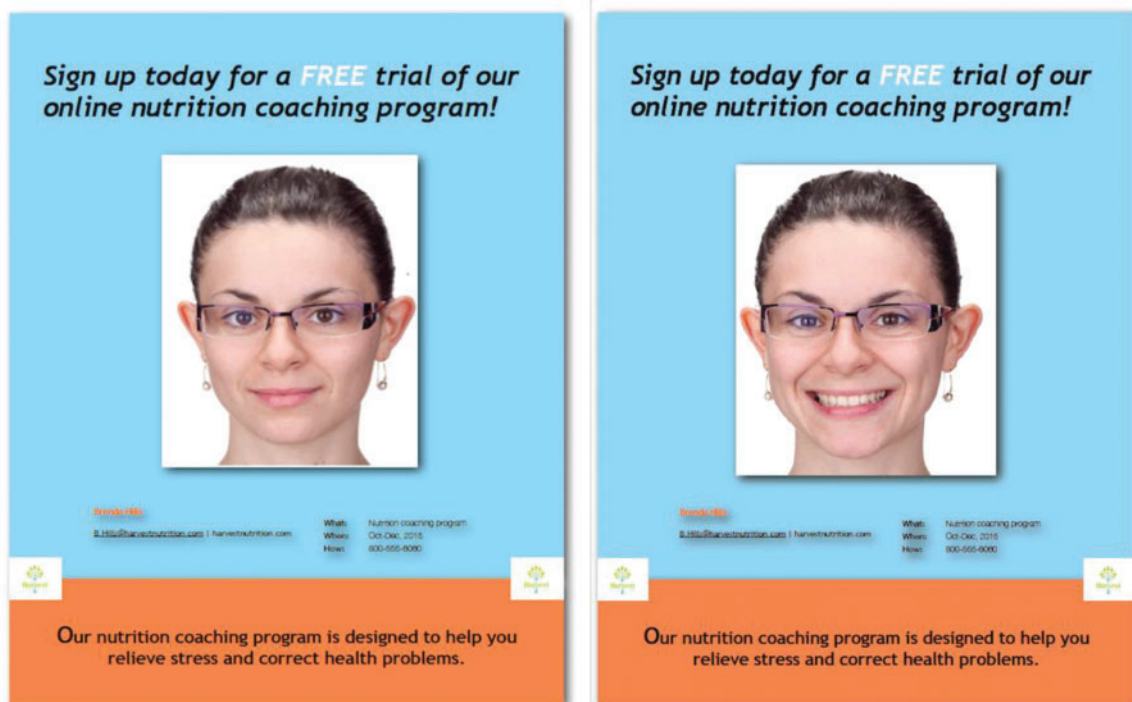icantly riskier (M_h = 4.80, M_l = 3.72; t = 3.11, p < .01), but not more important (M_h = 4.70, M_l = 4.60, p > .10).

Participants and Procedures

Study 2b employs a 2 (smile intensity: broad, slight) × 2 (consumption risk: high, low) × 2 (social judgments: warmth, competence) mixed-factorial design, with smile intensity and risk level as between-subjects variables and social judgments as a within-subjects variable. Two hundred eighty-one participants (M_{age} = 36.29, ranging from 18 to 78; 155 females) were recruited from Mturk for this study.

Participants first read the high- or low-risk version of the nutrition coaching introduction. Subsequently, to enhance experimental realism, we told participants that after providing their zip codes they would be matched with a local nutritionist. Next, participants were informed that a nutritionist in their area is expanding her business online, and presented with an ad for her online nutrition coaching service (see figure 5).

FIGURE 5

SAMPLE ADVERTISEMENTS USED IN STUDY 2B

Participants then reported perceived warmth and competence of the nutritionist, on the same scales as study 2a (warmth: $\alpha = .94$; competence: $\alpha = .96$). They also reported purchase intention on a four-item scale (e.g., "I am interested in the coaching program by this nutritionist," "I am likely to pay for the coaching program offered by this nutritionist"; 1 = strongly disagree, 7 = strongly agree; $\alpha = .96$; Dodds, Monroe, and Grewal 1991). As another attempt to measure purchase intention, we also asked participants if they would like to sign up to receive a promotional package, which includes a free trial session, from the nutritionist. Whether participants chose to sign up constitutes a behavioral measure of purchase likelihood. Afterward, we collected a manipulation check of smile intensity, and confound checks on persuasion knowledge ($\alpha = .76$) and perceived inappropriateness of the persuasion attempt ($\alpha = .96$) using the same measures as in studies 2a, and on smile authenticity and target attractiveness using the same measures as in study 1a. We also collected additional measures, including participants' demographics, at the end of the study.

Results

Manipulation and Confound Checks. We ran a 2 (smile intensity) × 2 (consumption risk) ANOVA on perceptions of smile intensity. As expected, results showed only a significant main effect of smile intensity ($M_b = 6.29$, $M_s = 4.13$; $F(1, 277) = 258.19$, $p < .001$). The same analyses on the confound checks revealed no significant main effects or interactions on participants' ratings of persuasion knowledge ($M_b = 3.53$, $M_s = 3.50$; $p > .10$), perceived inappropriateness of the persuasion attempt ($M_b = 2.80$, $M_s = 2.79$; $p > .10$), perceived smile authenticity ($M_b = 4.52$, $M_s = 4.44$; $p > .10$), or target attractiveness ($M_b = 4.30$, $M_s = 4.43$; $p > .10$).

Perceptions of Warmth and Competence. A 2 (smile intensity) × 2 (consumption risk) × 2 (social judgments) mixed ANOVA revealed a significant two-way interaction between smile intensity and social judgments ($F(1, 277) = 29.07$, $p < .01$). There was also a three-way interaction between smile intensity, risk level, and social judgments ($F(1, 277) = 3.93$, $p < .05$) (see figure 6). To interpret the three-way interaction, we examined the effect of smile intensity on perceptions of warmth and competence separately across low- and high-risk consumption contexts.

In the low-consumption-risk conditions, the interaction between smile intensity and social judgments was significant ($F(1, 277) = 6.29$, $p = .01$). Specifically, judgments of warmth were greater in the broad smile condition than in the slight smile condition ($M_b = 5.35$, $M_s = 4.70$; $F(1,$
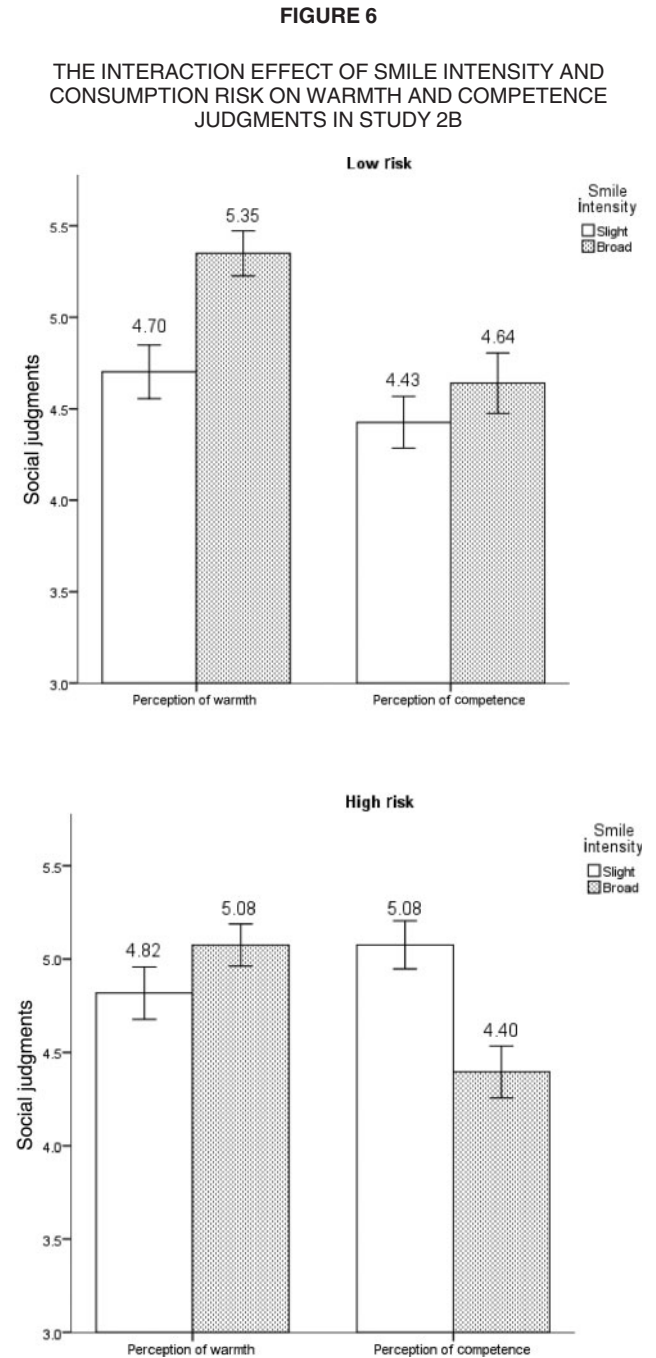
277) $= 28.06$, $p < .001$). However, smile intensity did not impact perceptions of competence ($M_b = 4.64$, $M_s = 4.43$; $p > .10$). The interaction between smile intensity and social judgments was also significant in the high-consumption-risk condition ($F(1, 277) = 25.32$, $p < .001$); however, the pattern was reversed. Perceptions of competence were lower in the broad smile condition than in the slight smile condition ($M_b = 4.40$, $M_s = 5.08$; $F(1, 277) = 26.66$, $p < .001$), but smile intensity had no effect on warmth ($M_b = 5.08$, $M_s = 4.82$; $p > .10$). In addition, the same three-way interaction effect held when potential confounds (smile authenticity, perceived attractiveness, perceived persuasive intent, and perceived appropriateness of the persuasive attempt) were included as covariates ($F(1, 273) = 4.00$, $p < .05$).

Consumers' Purchase Intentions. We ran a 2 (smile intensity) $\times$ 2 (risk level) between-subjects ANOVA on participants' self-reported purchase intention. The two-way interaction between smile intensity and risk level was significant ($F(1, 277) = 15.01$, $p < .001$) (see figure 7). Contrast analyses revealed that in the low-risk condition, participants reported higher purchase intentions in the broad versus slight smile condition ($M_b = 3.75$, $M_s = 3.28$; $F(1, 277) = 3.28$, $p = .07$). The opposite was true for the high-risk condition: broad smiles led to lower purchase intentions than slight smiles ($M_b = 3.35$, $M_s = 4.37$; $F(1, 277) = 12.99$, $p < .001$).

Next, we analyzed participants' sign-up behavior. A binary logistic regression was conducted that included smile intensity, risk, and their interaction as independent variables. The smile intensity $\times$ risk interaction was significant ($\chi^2 (1) = 6.84$, $p = .01$). Simple effects tests revealed that participants in the low-risk condition were more likely to sign up if the service provider displayed a broad smile versus a slight smile ($M_b = 32.9\%$, $M_s = 19.2\%$; $\chi^2 (1) = 3.60$, $p < .06$); in the high-risk condition, participants were more likely to sign up if the service provider displayed a slight versus a broad smile ($M_b = 17.9\%$, $M_s = 31.8\%$; $\chi^2 (1) = 3.28$, $p = .07$).

In additional analyses, we found that when persuasion knowledge, inappropriateness of persuasive intent, authenticity, and attractiveness were included as covariates, the interaction effects between smile intensity and risk level remain significant for both self-reported purchase intention ($F(1, 273) = 12.07$, $p < .001$) and sign-up behavior ($\chi^2 (1) = 4.79$, $p = .03$).
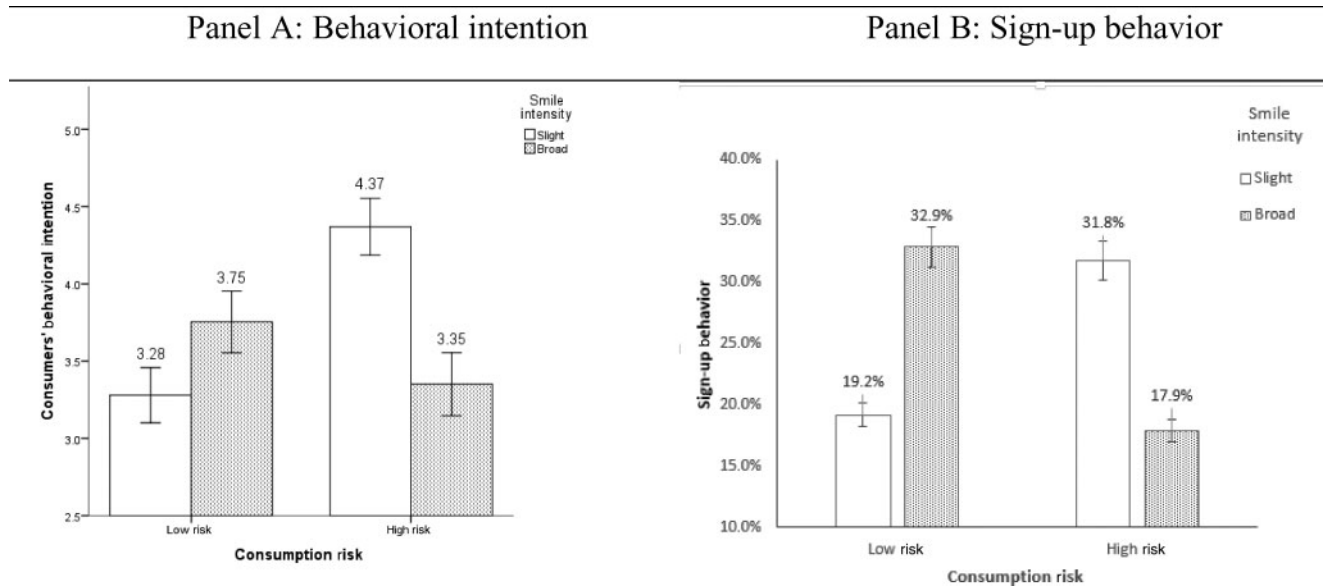
Mediation Analysis. We examined whether warmth and competence perceptions mediate the effect of the interaction between smile intensity and risk level on purchase intention. We conducted moderated mediation analyses using the bootstrapping procedure (5,000 resamples) (Hayes 2013). Findings indicate that in the low-risk condition, the indirect effect of the two-way interaction on self-reported purchase intention through warmth perceptions was significant ($a \times b = .20$, 95% CI: .07, .42), but the

indirect effect through competence perceptions was not significant ($a \times b = .08$, 95% CI: $-.02$, .22). In the high-risk condition, the indirect effect of the interaction on self-reported purchase intentions through competence perceptions was significant ($a \times b = -.48$, 95% CI: $-.80$, $-.22$), but the indirect effect though warmth perceptions was not significant ($a \times b = .15$, 95% CI $= -.14$, .50).

THE INTERACTION EFFECT OF SMILE INTENSITY AND CONSUMPTION RISK ON CONSUMER BEHAVIORAL INTENTIONS IN STUDY 2B

Similarly, in the low-risk condition, the indirect effect of the interaction on sign-up behaviors through warmth perceptions was significant ($a \times b = .18$, 95% CI: .00, .52), while the indirect effect through competence perceptions was not ($a \times b = .07$, 95% CI: −.05, .34). In the high-risk condition, the indirect effect of the interaction on sign-up behaviors through competence perceptions was significant ($a \times b = -.24$, 95% CI: −.57, −.04), but the indirect effect though warmth perceptions was not ($a \times b = .07$, 95% CI = −.01, .29).

Collectively, these results support hypothesis 4. The effect of smile intensity on consumers' purchase intentions is driven by warmth perceptions in low-risk consumption contexts but mediated through competence perceptions in high-risk consumption contexts.

Discussion

Study 2b documents how consumption risk moderates the effect of smile intensity on social judgments and purchase intentions. In low-risk contexts, warmth dominates consumer perceptions; a broad (vs. slight) smile enhances judgments of warmth but has no effect on judgments of competence. In high-risk contexts, however, competence trumps warmth; a broad (vs. slight) smile reduces competence perceptions but has no effect on warmth perceptions. In addition, warmth and competence perceptions bear downstream consequences on consumers' intentions to purchase the product or service provided by the marketer. By increasing warmth perceptions, a broad (vs. slight) smile leads to higher purchase intentions in a low-risk context. In a high-risk context, however, a broad (vs. slight) smile decreases behavioral intensions via less favorable competence perceptions. Having established the impact of smile intensity in four experiments, the next study extends our investigation to a field setting to enhance the external validity of this research.

STUDY 3: IMPACT OF SMILE INTENSITY IN A CROWDFUNDING CONTEXT

We collected data from Kickstarter.com, one of the world's largest crowdfunding platforms for creative projects. Entrepreneurs (called "creators" in Kickstarter) tap this platform to raise the capital needed in 15 different project categories (e.g., technology, design, music, photography). Project creators choose a minimum funding goal and set up various pledge categories for backers to contribute. In return for their financial support, backers receive rewards such as the product or service under development.

A large percentage of project creators on Kickstarter.com provide profile photos of themselves, which allows us to code the smile intensity level displayed in these photos. As a profile photo is readily available on the home page of a project, social judgments based on

creators' smile intensity are likely to influence backers' behavior.

In this study, we collected publicly available panel data on projects in the Technology and Design categories, the two categories with the largest and second-largest number of projects featuring project creators' photos at the time of data collection in November 2014. Since data for Technology and Design showed the same pattern of results, we combined the two categories in reporting our findings. After we excluded projects with photos that featured multiple faces, partial views of the face, or facial expressions other than smiles, as well as projects that had no backers, 324 projects across the two categories remained in the final dataset. Besides the profile photo, we recorded the following information for each project: title of the project, the funding goal, the entrepreneurial experience of the project creator (i.e., whether the creator has other projects on Kickstarter.com), whether the project received a "staff pick" promotion from Kickstarter, whether the project provided a video demonstration on the web page, number of backers, total amount of money pledged, number of Facebook shares, number of funding categories, the pledge amount, and the number of backers in each funding category.

Measurements

Smile Intensity. For each profile photo of the project creator, two coders independently classified the facial expression into one of three categories: 0 = no smile, 1 = slight smile, and 2 = broad smile (Cupchik and Poulos 1984). Coders were informed of the definition of each category following the extant literature, with 0 being absence of positive expression, 1 being slightly upturned mouth with no cheek elevation, and 2 being smiling expressions with mouth open and/or cheeks elevated (Repacholi et al. 2014). As part of the training process, coders were presented with sample photos from the MSFDE (Beaupré and Hess 2006) to familiarize them with smiles of different intensity levels. The intercoder reliability was .82 and differences in coding were resolved by a third coder. Based on the coding results, 158 project creators were classified as featuring slight smiles, and 166 were categorized as featuring broad smiles. Illustrative photos are provided in figure 8.

Backer Behavior Driven by Competence Perceptions: Total Amount Pledged and Pledged Amount per Backer. Kickstarter creators often promise tangible rewards for those who fund their projects, such as a sample of the product or service being developed (Mollick 2014). Indeed, 95.4% of the projects in our dataset offered tangible rewards for backers. Recent research on crowdsourcing identifies the desire to collect rewards as one of the primary motivations of backers (Cholakova and Clarysse 2015; Gerber and Hui 2013). Since backers are interested in "receiving a reward in exchange for giving money," it is suggested that to some extent backers "exhibit consumer behavior" (Gerber and Hui 2013, 13).

Research in the consumer behavior literature has associated consumers' willingness to pay with the skills, expertise, and reliability of the product or service provider (Berry and Parasuraman 2004). When convinced that the marketer is capable of successfully delivering quality offerings, consumers are more likely to pay premium prices in exchange for the product or service (Morales 2005). Researchers suggest this is because consumers perceive products or services offered by skillful and capable marketers to be more valuable than those from less competent ones, and are willing to pay at a level they believe is commensurate with the value of the offering (Homburg, Koschate, and Hoyer 2005).

Accordingly, we anticipate that a slight (vs. broad) smile, which enhances competence perceptions, will lead backers to contribute more money to the project, hence increasing total amount pledged to the project and average amount pledged per backer.

Backer Behavior Driven by Warmth Perceptions: Number of Facebook Shares. Desire to help others is another important motivation for backers in supporting crowdfunding projects (Gerber and Hui 2013). People's intention to provide help or social support to others is determined by a variety of factors (Becker and Asbrock 2012), including perceived warmth of the receiver (Cuddy et al. 2007). People tend to like and feel positive emotions toward individuals who are warm and friendly (Fiske et al. 2002), and are more likely to extend help or assistance to these individuals (Cuddy et al. 2007).

In addition, consumers balance the desire to help others with the desire to protect self-interest, and helping behavior is more likely when the cost associated with helping is relatively low (Wagner and Wheeler 1969). In Kickstarter, visitors can support a project by sharing the project page on Facebook, which is a low-cost way of helping the creator. Such acts involve no financial contribution, and competence perceptions of the creator should be less relevant in predicting such behavior. Consequently, we expect a broad (vs. slight) smile, which increases warmth perceptions, to be positively related to the number of Facebook shares a project receives.

Backer Behavior Driven by Both Competence and Warmth Perceptions: Large-Scale and Small-Scale Contributions. Project creators on Kickstarter can set multiple reward levels, and provide greater rewards for backers pledging more money. In our sample, 95% of creators set their first reward level as an amount lower than $25, with an average required contribution of $9.12. The average required contribution for the second, third, and fourth levels is $26.92, $80.53, and $180, respectively. Based on these

FIGURE 8

SAMPLE PHOTOS FROM KICKSTARTER.COM IN STUDY 3

Results

statistics, we classified pledges lower than $25 as small contributions, pledges between $25 and $100 as medium contributions, and pledges higher than $100 as large contributions. As discussed earlier, a broad (vs. slight) smile is more likely to elicit low-cost forms of helping behavior, and thus project creators with a broad (vs. slight) smile should receive a greater number of small-scale contributions as an indicator of social support. In contrast, compared to a slight smile, a broad smile may undermine the perceived competence of the project creator, which may lead to fewer large-scale contributions, which are likely viewed as investments on promising projects.

Results

Backer Behavior Driven by Competence Perceptions. As predicted, smile intensity was negatively related to both total contribution and average contribution per backer. When the creator displayed a broad (vs. slight) smile in the photo, the total amount pledged plunged by more than 50% ($M_b = \$10{,}179.26$, $M_s = \$21{,}560.12$; $t = -2.48$, $p = .01$), and average contributions per backer were reduced by more than 30% ($M_b = \$93.05$, $M_s = \$143.11$; $t = -2.84$, $p < .01$).

Backer Behavior Driven by Warmth Perceptions. On the other hand, smile intensity positively predicts the number of Facebook shares. A project page with a profile photo featuring a broad (vs. slight) smile received

more than twice as many Facebook shares ($M_b = 475.36$, $M_s = 224.54$, $t = 2.44$, $p = .02$).

Backer Behavior Driven by Both Competence and Warmth Perceptions. To test whether smile intensity has different effects on the number of large-scale and small-scale contributions, we conducted a 2 (smile intensity: slight, broad) $\times$ 2 (contribution level: small-scale vs. large-scale) mixed ANOVA, with smile intensity as a between-subjects variable and contribution level as a within-subjects variable. A significant two-way interaction supported our prediction ($F(1, 322) = 9.92$, $p < .01$). The number of small-scale contributions was significantly greater in the broad smile condition than in the slight smile condition ($M_b = 66.77$, $M_s = 33.81$; $F(1, 322) = 5.20$, $p = .02$). The opposite pattern was found for the number of large-scale contributions—broad smiles led to significantly fewer large contributions than slight smiles ($M_b = 15.40$, $M_s = 46.82$; $F(1, 322) = 4.73$, $p = .03$).

Control Variables. Given the correlational nature of the data in this study, it is possible that the observed effects might be caused by factors other than smile intensity. To examine this possibility, we recorded the following information to use as control variables: the gender of the project creator, the total funding goal of the project, the project creator's entrepreneurial experience, whether the project was promoted by Kickstarter as a "staff pick," and whether the project had a video demonstration. See table 1 for summary statistics.

Before including these control variables as covariates in further analyses, we first examined possible multicollinearity effects. All correlations between control variables and smile intensity were below .17, representing weak or small associations (Cohen 1988) (see table 1). We also calculated variance inflation factors (VIF) to examine the extent to which nonorthogonality among independent and covariate variables inflated the standard errors. All VIF values ranged between 1.00 and 1.06, well below the standard cut-off values of 5 (Hair et al. 2006) and 10 (Neter, Wasserman, and Kutner 1989). Therefore, multicollinearity is unlikely a threat to the interpretation of our results.

We thus included each control variable in the analyses of backer behavior. Results revealed that the total amount pledged is positively influenced by the creator's entrepreneurial experience ($F(1, 317) = 6.15$, $p = .01$) and the inclusion of a video demonstration ($F(1, 317) = 4.18$, $p = .04$). The amount pledged per backer was positively affected by the presence of a video demonstration ($F(1, 317) = 4.91$, $p = .03$). Small-scale contribution was positively influenced by the creator's entrepreneurial experience ($F(1, 317) = 6.32$, $p = .01$). Most importantly, the relationship between smile intensity and backer behavior remained unchanged after we controlled for these potential confounds.

DISCUSSION

We examined the effect of smile intensity on various consumer behaviors on Kickstarter.com. In line with our predictions, broad (vs. slight) smiles increased social support and low-cost helping behaviors, such as Facebook shares and small-scale donations. On the other hand, broad (vs. slight) smiles decreased backer investment as reflected in total amount pledged, average amount pledged per backer, and number of large-scale donations. These results are consistent with our hypothesis that, compared to slight smiles, broad smiles enhance warmth perceptions but reduce competence perceptions.

GENERAL DISCUSSION

Marketers routinely use facial expressions as a persuasion tool to engage customers, but little is known about how varying intensity levels of the same emotional expression can lead to differences in social judgments. Five studies revealed that brief exposures to emotional expressions in still images are sufficient for consumers to form a preliminary impression of the marketer, and that, contrary to intuition, broader smiles do not always lead to more positive interpersonal judgments. Specifically, greater smile intensity enhances perceptions of warmth, but undermines perceptions of competence. This effect is bounded by consumers' regulatory focus and level of consumption risk. While promotion-focused consumers perceive marketers with broad (vs. slight) smiles as warmer, prevention-focused consumers view marketers with broad (vs. slight) smiles as less competent. Correspondingly, broad smiles lead to greater perceptions of the marketer's warmth and stronger purchase intentions in a low-risk consumption context, but result in lower perceptions of the marketer's competence and weaker purchase intentions in a high-risk consumption context. Finally, we extend our findings to a field setting and show that smile intensity has important implications in predicting different types of behavior in a crowdfunding context. Creators on Kickstarter.com who display slight smiles are more likely to receive large contributions, in total and per backer, whereas creators with broad smiles are more likely to receive Facebook shares and small-scale donations.

The present work contributes to research on facial emotional expressions in still images (Harker and Keltner 2001; Hertenstein et al. 2009; Small and Verrochi 2009) and extends prior work, which has focused on valence

TABLE 1

SUMMARY STATISTICS FOR 324 KICKSTARTER PROJECTS IN STUDY 3

Variable	Mean	SD	1	2	3	4	5	6	7	8	9
1. Smile type (1 = slight, 2 = broad)	1.51	.50	...								
2. Total amount pledged ($)[a]	15729.18	41595.20	−.14[c]	...							
3. Average amount pledged per backer($)[a]	117.46	200.46	−.13[c]	.34[c]	...						
4. Total number of Facebook shares	353.05	1009.77	.12[c]	.14[c]	.17[c]	...					
5. Project creator's gender (1 = male, 2 = female)	1.13	.34	.16[c]	−.09	−.07	−.03	...				
6. The total funding goal ($)[a]	42174.98	126530.53	−.05	.04	.16[c]	.07	−.01	...			
7. Project creator's entrepreneurial experience (0 = first-time creator, 1 = experienced creator)	.20	.40	−.14[c]	.16[c]	−.01	−.08	−.06	−.12[c]	...		
8. Staff pick (0 = no, 1 = yes)[b]	.15	.35	−.04	.07	.02	.06	.02	.04	.08	...	
9. Video on the project web page (0 = no, 1 = yes)	.91	.28	.07	.11[c]	.12[c]	.10	−.01	.04	−.01	.13[c]	...

[a]Projects funded in other currencies were converted to US dollars.
[b]"Staff pick" refers to whether the project was recommended by Kickstarter staff, marked by a green sticker on the project home page.
[c]$p < .05$.

contrasts (positive, neutral, negative), by examining different intensity levels of positive affective display. Investigating the effect of smile intensity reveals a more nuanced picture of smiling and moves beyond the general notion that all smiles have positive interpersonal effects. More broadly, our research contributes to the literature on emotions and decision making, where recent work has documented how arousal or intensity of an emotional state may shape people's judgments of objects and events (Di Muro and Murray 2012; Fedorikhin and Patrick 2010; Gorn, Pham, and Sin 2001; Vosgerau 2010). Complementing this stream of work focusing on felt emotional intensity, our research shows that displayed emotional intensity impacts how people may be perceived and judged by others.

Implications for Marketers and Consumers

Human faces are omnipresent in marketing communications. Companies and universities, for example, routinely display employee or faculty pictures on their websites. Billboards, print ads, and direct mail also frequently feature faces with smiles. Our research indicates that, based on the displayed smile, potential customers make inferences about the pictured individual's warmth and competence, which may influence their intentions to interact or transact with that individual. It is important to understand that the interpersonal effects of smiles are not always positive, and smile intensity may need to be finely tailored to the specific impression that the marketer wishes to make—a broad smile for warmth, and a slight smile for competence. We also show that marketing context can moderate these effects. Consumers with a promotion goal or in a low-risk context are more likely to perceive warmth in broad (vs. slight) smiles, while consumers with a prevention goal or in a high-risk context are more concerned with competence as smile intensity increases. By understanding the boundary conditions that moderate the impact of smiles on consumer perceptions, marketers can adapt their affective displays and avoid situations when a well-intended positive display goes unrequited or even backfires.

Our investigation is also relevant to consumers. Facial expressions are critically important for coordinating social interactions (Keltner and Haidt 1999). The emergence of social media fosters the prominent usage of human faces as a communicative tool and impression management tactic. Facebook and LinkedIn users often start their connections with a profile picture. Our research suggests that facial cues can impact judgments of warmth and competence, traits that consumers often wish to convey through such sites. Consumers may benefit from our findings by using the appropriate facial expression as a strategic tactic to facilitate social connections or build personal brands. A broad smile might benefit the displayer when warmth or friendliness is the focus (e.g., on Facebook), but

moderation is recommended when signals of competence are the primary goal (e.g., on LinkedIn).

Future Research Avenues and Caveats

Our research is not without limitations. For one, we used static images instead of dynamic interactions. Research suggests that perceivers can use nonverbal behaviors, such as arm gestures and body position, to make judgments about warmth and competence (Ambady, Krabbenhoft, and Hogan 2006; Tsai and Huang 2002). To keep our manipulations as clean as possible, we chose to focus on photographs. We encourage future research to test whether our findings can be replicated in interaction contexts.

In this research, we found consistent empirical evidence that smile intensity does not influence the perceived persuasive intent of the marketer. We speculate this is because broad smiles are omnipresent in marketing communications and consistent with consumers' expectations in these contexts. However, it is important for future research to further explore when persuasive intent may influence consumers' perception of marketers' smiles. For instance, when the smile displayed by marketers is perceived as forced or fake (Grandey 2003), customers may perceive broad smiles as more likely to be driven by persuasive intent compared to slight smiles. Or, a broad smile that is inconsistent with the customer's emotional receptivity—that is, the preferred level of emotional intensity displayed by others (Lee and Lim 2010)—may elicit more suspicion about the expresser's persuasive intent. It may be fruitful for future research to develop a new scale to measure perceived persuasive intent specifically in the context of smile-induced perceptions, which is sufficiently sensitive to capture nuances in consumers' inferences about marketers' intentions.

In addition, this research focused on positive expressions or smiles because of their ubiquity in marketing communications and social interactions. Future research may examine whether intensity levels of negative emotions benefit or hurt social judgments. For instance, anger is associated with dominance or power (Tiedens 2001). However, intense expression of anger may result in negative inferences about the individual's ability to regulate emotions (Lewis 2000).

Another promising direction for future research is testing whether inferences based on smile intensity are correctable. Trait inferences drawn from facial cues are often spontaneous, but can be corrected in the presence of additional evidence about the expresser (Gorn et al. 2008). It is conceivable that the effects of slight and broad smiles on impressions may be altered when other information is available to evaluate the marketer. Research in this direction could benefit marketers by identifying ways to increase perceptions of both warmth and competence. Previous research on organizations found that nonprofits

are typically seen as warm but incompetent, but a nonprofit can attain a "golden quadrant" by providing compelling evidence that it is a competent organization (Aaker et al. 2010). Future research may investigate whether a similar effect may be achieved in social perceptions, when competence-related cues (e.g., speaking eloquently) are presented for marketers with a broad smile, or warmth-related cues (e.g., friendly body gestures) are presented for marketers with a slight smile.

Conclusion

A growing body of literature supports the notion that people make inferences about others based on their emotional expressions. The consensus is that positive affective displays, such as smiles, lead to positive interpersonal judgments (Deutsch et al. 1987; Mueser et al. 1984; Thornton 1943). The current research shows that this is not always the case. The intensity of a smile affects perceptions of warmth and competence, such that targets with broad smiles are judged to be warmer but less competent than those with slight smiles. This effect is moderated by the perceiver's regulatory focus and level of consumption risk. Importantly, these inferences affect downstream behaviors, such as purchase or investment decisions, that carry significant consequences to the marketer. Taken together, the results of this research demonstrate that when it comes to smiles, bigger isn't always better.

DATA COLLECTION INFORMATION

The first author and the fourth author collected data for studies 1a, 2a, and 2b on Amazon's Mechanical Turk between March 2013 and November 2015. The first author conducted study 1b at the University of Central Florida's behavioral lab in October 2015. The first author supervised the collection of data for study 3 by research assistants on Kickstarter.com in November 2014. The first author and the fourth author jointly analyzed these data. All four authors reviewed and discussed the results for each study.

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