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The Effects of Facial Cues on Consumer Judgment and Decision-Making

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THE EFFECTS OF FACIAL CUES ON CONSUMER JUDGMENT AND DECISION-MAKING

by

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ABSTRACT

This dissertation investigates the roles of facial cues in consumer behavior. Specifically, the research examines the effect of facial structural resemblance, facial expressions, and other perceptual cues—in both individual and group settings—on consumer judgment and decision-making. Essay 1 examines the influence of facial resemblance on consumers' product purchase likelihood. This effect is moderated by consumers' mental construal, such that the effect of increased facial resemblance on product purchase likelihood occurs among consumers with high-level construals but not among those with low-level construals. Results of three experimental studies show that increased facial resemblance among team members enhances the perceived entitativity of the group, which in turn leads to more favorable intention of purchasing the product offered by the group. Essay 2 investigates the differential effects of recipients' group entitativity on two types of donation (time vs. money). Through three studies, the research demonstrates that high (versus low) group entitativity among the recipients increases donation of time but decreases donation of money. Such differential effects on donation of time versus money are driven by consumers' emotional or cognitive well-being associated with time or money donations. In essay 3, the effect of smile intensity on customer behavior is shown to be moderated by power and salience of ulterior motive. When employees' ulterior motive is not salient to customers, low-power customers evaluate the employee with intensified smiles more favorably compared to high-power customers. In contrast, when ulterior motive is made salient, high-power rather than low-power customers react more positively to smile intensity. Results show that the interactive effects between smile, power, and ulterior motive are driven by customers' warmth and competence perceptions. Collectively, this dissertation focuses on consumers' face-based judgments of individuals and teams, and investigates how such facial cues might influence consumers' attitude, purchase intention, and prosocial behavior.

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CHAPTER ONE: INTRODUCTION

The objective of this dissertation is to study the role of individual and collective facial appearance in shaping consumers' social judgment and decision-making. This research, consisting of three essays, focuses on how facial structures and facial expressions as important types of facial cues, in both individual-level and group-level settings, influence consumer behavior. For instance, facial resemblance has increasingly attracted attention in the fields of psychology (Zebrowitz, Kikuchi, and Fellous 2010) and consumer research (e.g. Tanner and Maeng 2012). Human facial resemblance—the extent to which a person's facial features resemble another's (Verosky and Todorov 2010)—has an impact on a variety of domains, including mate choice (Hinsz 1989), kin selection (DeBruine 2004), politics (Zebrowitz and Montepare 2005), and business (Gorn, Jiang, and Johar 2008). Furthermore, findings in psychological research indicate that a brief exposure to facial cues such as emotional expressions is found to be sufficient to influence individuals' perceptions and impression formation (Todorov, Pakrashi, and Oosterhof 2009).

1.1 Summary of Research Findings on Face Research

To identify a possible gap in the literature and understand potential theoretical and practical contributions, the current chapter first summarizes empirical findings that exist or are explored in this research within the domain of facial resemblance. Figure 1 depicts two levels of perceptions, individual and group. There is adequate research that focuses on individual-level face perception. Facial resemblance refers to how a person perceives a target face when his/her face resembles the self (Moreland and Zajonc 1982), the faces of the significant others (Kraus and Chen 2010), other familiar faces (e.g. celebrity; Tanner and Maeng 2012), and stereotypical faces such as a baby face (Gorn et al. 2008). Another stream of research not included in Figure 1 compares individual

perceptions of static facial structures to dynamic emotion expressions (e.g. Said, Sebe, and Todorov 2009; Zebrowitz et al. 2010). Existing literature on individual-level perceptions demonstrates that facial resemblance to the self has a conflicting effect on self-evaluation (e.g., comparison to models may lead to assimilation or contrast in perceivers' athletic ability varied by the type of ad headlines; Häfner 2004) as well as a positive general effect on attitudes and behaviors towards the target (e.g., people are more inclined to adopt children who appear similar to themselves; DeBruine 2004). Facial resemblance to familiar others is associated with conflicting results in both evaluation of the target and evaluation of the company. For example, a target face resembles that of Tiger Woods is consistently judged as having identical positive or negative traits possessed by that celebrity (Tanner and Maeng 2012). For a would-be politician, having a baby face has been shown to negatively impact the likelihood of voters supporting the afflicted candidate (Zebrowitz and Montepare 2005); a baby face also generates contradictory general effects on the evaluations of the associated target as well as the company (Gorn et al. 2008).

As indicated in Figure 1, different mediators drive the effects of facial resemblance on judgments and behaviors. Facial resemblance to the self mainly increases perception of attractiveness (e.g., DeBruine 2004). On the other hand, perceived traits of familiar others or even of transitory others are transferred to evaluation on the target face (e.g., Lewichi 1985). Stereotypical traits of infants are similarly associated with adult faces that retain a "babyish" appearance, interpreted as naiveness, trustworthiness, or incompetence, subsequently; these traits inhibit voting for political candidates with baby faces (Zebrowitz and Montepare 2005) and enhance likelihood to trust CEOs (Gorn et al. 2008). Methodologically, prior studies have displayed a trend away from using original photos (e.g., Moreland and Zajonc 1982) or real people (e.g., Lewichi 1985) to incorporating morphology (e.g., Debruine 2004).

Although the scholarly literature has extensively investigated the impact of facial resemblance at the individual level, little research exists about the influence of facial resemblance on group-level perception. Literature on group-level perception merely shows a positive relationship between engaged/married couples and perception of facial resemblance (Hinsz 1989), but ignores how facial resemblance within couples or groups affects perceivers' evaluations and behaviors. Taking a step further to fill in this gap, the researcher attempts to extend and examine the effects of facial resemblance among group members on group-level social cognition and subsequent decision-making.

In addition to structural facial cues, emotional expressions, despite their transitory nature, divulge clues about a displayer's enduring dispositions. For instance, a single happy expression leads to perceivers' perceptual ratings on the displayer's broader dispositions such as likability, friendliness, trustworthiness, and satisfaction with life (Harker and Keltner 2001; Mueser, Grau, Sussman, and Rosen 1984). Prior research on the effects of facial expressions on impression formation suggests a halo effect of positive expressions—smiling individuals tend to generate a positive impression in general (e.g. Hess, Beaupré, and Cheung 2002).

A caveat in extant literature though, is that most studies predominantly make the broad distinction between positive and negative expressions (Knutson 1996; Montepare and Dobish 2003) and treat positive expression as a unitary phenomenon (Hess et al. 2002). Therefore, there remain inadequately-answered questions about the impact of positive expressions on perceptions. Will a stronger smile always lead to more favorable judgments? What are the boundary conditions or factors that may undermine the smiling effect?

Thus, this dissertation examines the effects of group facial resemblance and individual facial expressions on customer behavior in two different domains: purchase behavior, and prosocial behavior. Each essay puts forth evidence supporting when and how facial cues, in a group or

individual setting, influence consumers' perceptions and behaviors. As a whole, the dissertation sheds new light on facial cues at group level and individual level and the conditions under which these facial perceptual cues impact consumer behavior.

1.2 Dissertation Overview

Essay 1 examines the influence of facial resemblance on consumers' product purchase likelihood. Results of three experimental studies show that increased facial resemblance among team members enhances the perceived entitativity of the group, which in turn leads to more favorable intention of purchasing the product offered by the group. This effect is moderated by consumers' mental construal, such that the effect of facial resemblance occurs among consumers at high level of construal but not among those at low level of construal.

Essay 2 shows the differential effects of recipients' facial resemblance on two types of donation (time vs. money). It posits that facial resemblance among the recipients increases donation of time but decreases donation of money. Such differential effects on donation of time versus money are driven by consumers' own well-being associated with time or money donation.

Essay 3 investigates the effect of smile intensity on customer behavioral intention, depending on power and salience of ulterior motive. The results demonstrate that intensified smile enhances behavioral intent among low-power customers when employees' ulterior motive is not accessible to customers, whereas the positive effect of smile intensity on behavior occurs among high-power customers when ulterior motive is made salient. Moreover, such effects are driven by warmth and competence perceptions deriving from customer power.

Collectively in three essays, this dissertation gives emphasis to perceptions of individuals and teams, and explores how such facial cues at individual and group levels might influence consumers' purchase behavior and charitable behavior.

1.3 Essay 1 Overview

Streams of research on face-based trait inferences, explored across different domains, include mate choice (e.g. Hinsz 1989), politics (Hall et al. 2009), law (Blair, Judd, and Chapleau 2004), and business (Naylor 2007). People make inferences about others according to how they appear; however, there are substantial studies investigating the inferences drawn from individual faces, while few studies focus on the faces of groups (of individuals). Specifically, the paper aims to address three research questions: does collective facial appearance of a group matter? Will facial resemblance among team members bias consumers' group-level perception and subsequent decision-making? Which type of consumers may be susceptible to face-based biases in judging groups?

To extend the literature on facial resemblance perception at group level, this paper examines the impact of perceivers' mental inferences about group facial resemblance on their evaluation of the presented groups along with co-presented products. This effect depends on the perceivers' construal level such that increased facial resemblance leads to greater purchase likelihood only for individuals with high-level construals. Based on Schwarz and Bless (1992, 2007) and Förster, Liberman, and Kuschel (2008), individuals with high-level construals are more inclusive, allowing themselves to group the objects in the same category. By contrast, individuals with low-level construals are more exclusive, categorizing stimuli in different subgroups. Accordingly, consumers at a high level of construal show a grouping propensity to group faces presented together and make stronger inferences about the increased facial resemblance among group members. Such group formation, drawing inferences about facial resemblance, results in greater purchase likelihood. By comparison, consumers at low-level construals tend to focus on individual faces separately and compromise the influence of facial resemblance.

Built on the data from three experiments, this paper suggests that subtly increased group facial resemblance has an impact on how the group, and its associated product, are evaluated and this effect is moderated by perceivers' construal level. In addition, this paper explores the mediating role of perceived group entitativity, as face-based inferences are drawn (not drawn) associated with high-level (low-level) construals.

Experiment 1 examined whether high facial resemblance leads to greater product purchase likelihood among consumers with high-level versus low-level construals. I adopted morphology as an emerging technique in consumer research and generated the faces of two people who resembled each other more (30% blended with each other) or less (10% blended with each other). One hundred and seventy three undergraduate students first read a cover story about two young artists who were raising funds for art education in exchange of their artwork. Next, participants were exposed to one of the two snapshots featuring either high-resemblance or low-resemblance faces, accompanied with a piece of artwork. They then rated how likely they would be to purchase the artwork. Next, participants were asked to respond to Behavior Identification Form (BIF) (Vallacher and Wegner 1989) that assesses individuals' chronic tendency to construe information at high or low levels. Results provided initial support for the hypothesis that increased facial resemblance among group members enhances product purchase likelihood for consumers with high-level construals, whereas there is no effect of facial resemblance on consumers with low-level construals.

To overcome a limitation of experiment 1 that included construal level as an individual difference variable, experiment 2 primed two construal levels in the advertising message. The stimuli and cover story are identical to those in the previous study. High-level construal focuses on the end outcomes of participation in the fundraising event, while low-level construal emphasizes the means to achieve the end goals. The experiment has a 2 (facial resemblance: high versus low) × 2 (construal level: abstract versus concrete) between-subjects design. Instead of student participants,

163 Amazon's mechanical users were recruited and paid 50 cents each for their participation. These non-student respondents were later assigned to one of the four experimental conditions and asked to report purchase likelihood. Findings consistently support the notion that increased facial resemblance leads to greater purchase likelihood only when individuals are primed with high-level construals.

Experiment 3 had two main purposes. One was to operationalize construal level as the desirability or feasibility of the product. The other was to test the underlying mechanism that explains the effect. A new set of stimuli was created, consisting of two furniture designers and two pieces of furniture, and pretested to feature desirability or feasibility in the main study. In a 2 (facial resemblance: low vs. high) × 2 (construal level: feasibility vs. desirability) study design, I assigned 170 student respondents randomly in one of the four conditions. They first reported product purchase likelihood and then assessed perceived group entitativity. Results replicated the main proposition and confirmed the mediating role of group entitativity.

To sum up, these findings offer theoretical and practical implications for the effect of facial resemblance among group members. I combine two independent lines of research, construal level theory and face perception, and provide new insights into the role of construal level theory in face-based group perception.

1.4 Essay 2 Overview

Most marketing literature on manipulation of audience emotion demonstrates a stronger effect of featuring, in visual advertisements, an identifiable single victim over a large number of muted victims (e.g. Kogut and Ritov 2005). That said, there is a limited number of recent studies proposing entitativity as an important criterion to increase donation in the group setting (Smith, Faro, and Burson 2013). Smith et al. (2013) indicate that group entitativity of multiple victims leads

to favorable (unfavorable) judgments of victims with positive (negative) traits and greater (fewer) donations. Based on the theories of entitativity (Campbell 1958), a more entitative group of victims is judged similarly as a single individual victim (Hamilton and Sherman 1996). Following Smith et al.'s (2013) work, the current study aims at representing victims in high or low entitativity but investigating differential effects of group entitativity on different types of donations (time versus money). This study proposes that increased group entitativity among a large number of victims has a differential impact on two types of donations; specifically that high group entitativity, compared with low group entitativity, is more effective in soliciting donation of time whereas low versus high group entitativity is more effective in attracting donation of money.

This proposition is drawn from theoretical differences between time and money. Time activates emotional attachments and money activates rational economic utility (Liu and Aaker 2008). It follows that donors' mindsets associated with donation of time increase tendency to contribute to a group of victims who need emotional support for improving their well-being. Spending the whole time with one entitative group of individuals rather than incrementally with different groups of individuals would generate greater emotional well-being for donors. In the high group entitativity condition, donors evoke more emotional concerns, achieve stronger emotional well-being, and elicit greater donations of time. Utilitarian mindsets activated by donation of money lead donors to maximize monetary donation efforts toward a variety of different victims over a single unit of victims. Hence, high-entitiative groups of victims would reduce donors' utilitarian values, weaken their cognitive well-being, and result in fewer monetary donations.

These propositions were examined in three studies. To prime group entitativity, I adopt a conceptual manipulation of social associations (same versus different neighborhood) in study 1, a perceptual manipulation (uniform) in study 2, and measures of physical similarities such as body

gesture and facial expressions in study 3. Findings of the first study provided initial support for the effects of group entitativity on two different donation types such that increased group entitativity among victims enhances donation of time but reduces donation of money. Study 2 confirmed the findings of study 1 and tested the mediating role of donors' emotional versus cognitive well-being associated with time or money. Furthermore, study 3 extended the results to an online field setting which examines the effect of group entitativity on actual donations.

This paper contributes to the literature on donation where the dominating single-victim effect starts to receive criticism and sheds light on the effect of multiple victims on donation. Group entitativity is proposed to have differential effects on prosocial behavior depending on different donation types.

1.5 Essay 3 Overview

Human face is a primary channel for emotion communication (Ekman, Friesen, and Ellsworth 1972) and most prior research on emotion displays contrasts positive displays with negative or neutral displays (Knutson 1996). Smiles are generally inferred as happy, polite, kind, honest, agreeable and sociable (Deutsch, LeBaron, and Fryer 1987; Harker and Keltner 2001; Mueser et al. 1984; Thorton 1943). This paper focuses on two levels of positive expressions and in order to manipulate smile intensity, both natural photos and morphed photos are used. Moreover, this research investigates how the effect of smiling intensity on customer behavior is moderated by other factors such as customer power and employees' ulterior motive.

On one hand, when customers are not aware of employees' ulterior motive in a natural service scenario, high-power customers tend not to interpret any visual, cognitive, and affective cues or judge others' emotions (Galinsky, Magee, Inesi, and Gruenfeld 2006). In contrast, low-power customers pay attention to information that allows them to form impressions about others

(Russell and Fiske 2010). According to the communal-orientation trait associated with low power (Rucker, Galinsky, and Dubois 2012), individuals with low power search for social relations and are likely to make warmth inference about the displayer who increases smiles. The stronger smiles displayed by an employee, the warmer the employee is perceived by low-power individuals, and in turn the more favorably the displayer is evaluated.

Contrarily, when customers are informed of employees' ulterior motive, high-power individuals become motivated to perceive people and think about others but they are still self-focused (Galinsky et al. 2006). Based on the agentic-orientation trait of high-power individuals (Rucker et al. 2012), they judge another person through an agentic lens and focus on how others serve them well. This seeking for capability or competence drives high-power customers to infer intensified smiles as employees' competence of performing the job, thus leading to more positive customer evaluation and behavioral intent.

To manipulate power in a series of studies, I use episodic recall task in studies 1a and 3, physical posture in study 1b, and imagined hierarchical roles in study 2. In studies 1a and 1b, 122 undergraduate students and 108 other students were recruited to participate in the study, revealing that participants primed with low-power compared to those with high-power reacted more positively to intensified smiles, only in the condition when ulterior motive is not salient. 167 non-student mTurk participants took part in study 2 that has a 2 (smile intensity) X 2 (power) X 2 (salience of ulterior motive) study design. Findings not only replicated results of the first study, but also showed that when ulterior motive is made salient to customers, high-power rather than low-power role players had more favorable attitude toward, and likelihood of, choosing the employee with stronger smiles. In study 3, 162 student participants completed the survey that investigates the underlying processes of the interactive effects between smile, power, and ulterior motive. Perceptions of warmth and competence were found to mediate such effects.

This essay offers theoretical contributions to social psychology research that focus on a halo effect of positive emotion expressions, power literature that discusses customer empowerment, and persuasion knowledge that seems to reveal the negative impact of ulterior motive.

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CHAPTER TWO: THE EFFECT OF FACIAL RESEMBLANCE ON PRODUCT PURCHASE: THE MODERATING ROLE OF MENTAL CONSTRUAL

Abstract

To date, consumer research has shown that individuals' facial appearance can bias consumers' social perceptions and consequent decision-making. This research investigates how collective facial appearance of a team influences consumers' product purchase likelihood. Results of three experimental studies show that increased facial resemblance among team members enhances the perceived entitativity of the group, which in turn leads to more favorable intention of purchasing the product offered by the group. This effect is moderated by consumers' mental construal, such that the effect of increased facial resemblance only occurs among consumers with high-level construals. These findings extend prior literature on consumers' face-based judgments of individuals to their perceptions of teams.

Keywords: facial resemblance, construal level theory, group entitativity, face-based inferences

2.1 Introduction

The significance of human facial resemblance has emerged as an important driver of both psychology theories (Zebrowitz, Kikuchi, and Fellous 2010) and consumer research (e.g. Tanner and Maeng 2012). For example, people are more likely to marry partners, judge strangers more favorably, and adopt children who resemble themselves (DeBruine 2004; Hinsz 1989; Kraus and Chen 2010; Platek et al. 2003, 2004). According to recent studies, even a face that resembles a familiar person, such as a celebrity, is consistently judged as having the same positive or negative traits of the familiar one (Tanner and Maeng 2012). Although it is well established that people draw inferences about others based on the way they look (e.g. facial morphology), the current literature has mostly focused on perception of, and behavior towards, individual faces that resemble oneself or one's familiar others. There is a dearth of research that explores the inferences derived from the faces of groups (of individuals) presented together. In this paper, groups formed by pairs of individual faces were shown to resemble each other. In particular, I aim to address three research questions in the paper: does collective facial appearance of a group matter? Will facial resemblance among team members bias consumers' group-level perception and subsequent decision-making? Which type of consumers may be susceptible to face-based biases in judging groups?

Adding to the literature related to facial resemblance and group perception, this paper examines the impact of participants' heightened recognition of group facial resemblance on participants' evaluation of the presented groups along with their co-presented products. This relationship depends on the perceivers' construal level and springs from inferences made based on a group's faces. Drawing on the exclusion/inclusion model (Schwarz and Bless 1992, 2007) and global/local model (Förster, Liberman, and Kuschel 2008), individuals with global high-level construals tend to be more inclusive, allowing themselves to include the objects in the same category. Conversely, perceivers with local low-level construals exhibit more exclusive tendencies,

and are more likely to separate stimuli into different categories. Following these models, consumers at a high level of construal display inclusiveness in relation to the facial stimuli and make stronger inferences about the increased facial resemblance among group members. This enhancing effect of facial resemblance will later lead to greater purchase likelihood. By comparison, consumers at a low-level construal experience low levels of inclusiveness in relation to facial stimuli, isolating the faces of a group member away from each other, and reduce the influence of increased facial resemblance. That being said, the exclusiveness effect experienced by consumers with low-level construals will ultimately lead to equivalent purchase likelihood regardless of facial resemblance.

In the following sections of this paper, the researcher will present an overview of the research on facial resemblance and will then develop hypotheses based on construal level theory and a process of grouping. Next, data gathered from three experiments will be used to support the idea that subtly changing the facial features of group members is sufficient to impact how the group, and its associated product, are evaluated and that this effect is moderated by participant's construal levels. In addition, this paper will explore how the effect between facial resemblance and construal level is mediated by perceived group entitativity, as the face-based inferences are enhanced (attenuated) associated with high-level (low-level) construals. Finally, the paper will conclude with theoretical contributions and managerial implications based on the results.

2.2. Theoretical Background

2.2.1 Facial Resemblance Literature

Human facial resemblance, defined as the extent to which a person's facial features resemble another's (Verosky and Todorov 2010), is an effective criterion used to evaluate interactions between persons. In terms of first impression formation, how a person evaluates someone who is unfamiliar to him or her is greatly influenced by the degree to which the new face resembles a familiar one (Lewichi 1985; Tanner and Maeng 2012; Verosky and Todorov 2010; von Helversen, Herzog, and Rieskamp 2013). From an evolutionary standpoint, facial resemblance fits into three of Darwin's four main tenets: survival, reproduction, and kin selection (Saad 2013). In general, a person is more likely to approach or affiliate with someone who appears similar to a familiar face. Hence, investigation of facial resemblance may have important consequences, given that facial morphology serves as means to survival, choice of mate, kinship, "good gene" selection, emotional reading, and social interactions (e.g., Häfner 2004; Said et al. 2009; Tanner and Maeng 2012).

At this stage, it is helpful to summarize the empirical findings that are relevant to the research domain of facial resemblance. There are two levels of perceptions, individual and group, of facial resemblance. There is ample research in the literature on individual-level face perception, including how a person perceives a new (target) face when his/her face resembles the target (Moreland and Zajonc 1982), the faces of their significant others (Kraus and Chen 2010), and their other familiar faces (Lewichi 1985). Another line of inquiry compares individual perceptions of static facial structures versus dynamic emotion expressions (Said et al. 2009; Zebrowitz et al. 2010). Previous research regarding individual-level perceptions has found that facial resemblance to the self or to a significant other can have a conflicting effect on self-evaluation (for instance, comparison to models may lead to assimilation or contrast in perceivers' athletic ability varied by

the type of ad headlines; Häfner 2004) as well as a positive general effect on attitudes and behaviors towards the target (for example, adults, especially males, tend to adopt children who appear similar to the self; DeBruine 2004). Contradictory general effects exist when evaluating responses to the target, varying as a function of his/her facial resemblance to the familiar others such as a celebrity or individuals with whom perceivers have a brief interaction.

However, limited research is available about the impact of facial resemblance on group-level perception with the exception of a few papers that only confirm perceived facial similarity among couples (e.g. Hinsz 1989). The limited available literature on group-level perception merely shows a positive relationship between engaged/married couples and perception of facial resemblance (Hinsz 1989), ultimately avoiding the question of how facial resemblance within couples or groups affects relevant evaluative or behavioral variables. Because group-level investigation of facial resemblance is rather scarce, this study aims to extend and examine the effects of facial resemblance among group members on group-level perceptions and consequently on product purchase. In line with existing findings that draw individual face-based inferences about people's characteristics (e.g. likability and trustworthiness; Moreland and Zajonc 1982; Verosky and Todorov 2010; DeBruine 2002; Farmer, McKay, and Tsakiris 2014), I propose that people consistently judge groups (of individuals) when pure face features are provided, such that facial resemblance increases inferences about group entitativity as a positive group feature. Furthermore, whereas previous research compares differentiated effects of individual faces resembling familiar others that have positive or negative personalities (Lewichi 1985; Tanner and Maeng 2012), construal level theory is introduced as a moderator of the facial resemblance effect in this paper. As a result of the addition of this new variable, and depending on perceivers' construal level, facial resemblance has an effect on perception of group entitativity, which in turn impacts product purchase likelihood.

2.2.2 The Moderating Role of Construal Level

In summary, individual-level trait inferences about facial resemblance generate bias in perceivers' self-evaluation, perception of the target, and behaviors towards the company or products. Aligning with such inference-making process, facial resemblance between group members enhances perceptual similarity that serves as a cue to perception of group features (e.g. entitativity; Dasgupta, Banaji, and Abelson 1999). Group entitativity refers to shared properties including similarity, interdependence, and common movement among a group of individuals (Campbell 1958; Lickel et al. 2010; Smith, Faro, and Burson 2013). For example, similar physical (i.e., skin color) and even behavioral (i.e., movement) cues within a group generate judgments about perceptual-inferential biases of entitativity perception (Ip, Chiu, and Wan 2006). Highly entitative compared to low entitative groups have tendency to generate more extreme judgments by perceivers (Smith et al. 2013). According to Gestalt principles or "bias for the whole", entitative groups are more aesthetically pleasing and associated with goodness, beauty, optimalty, and social norms (Geier et al. 2006; Katz 1950; Mishra 2009; Mishra, Mishra, and Nayakankuppam 2006). Perception of facial resemblance is found in partners who are engaged or married and have developed an enduring cooperative team (Hinsz 1989). Similarly, members of working teams have closer social attachment to those whom they perceive to be similar to themselves (Harrison et al. 2002). Taken together, facial resemblance among group members generally results in the perception of an entitative, homogeneous and cohesive group. Moreover, the design of this study uses construal level theory to understand the role of facial resemblance in perceptions within groups; the effect of facial resemblance on product purchase intent is moderated by construal level.

As construal level theory illustrates, when perceiving several objects within a big picture, perceivers can either have a focus more intently on higher-order goals or on contextualized, lower-order details (Liberman, Trope, and Wakslak 2007; Trope and Liberman 2003). Meanwhile, over

the years, effects of stimuli inclusiveness and exclusiveness have been introduced to these scenarios, indicating that perceivers may categorize the stimulus objects together or separate objects away from each other (Parducci, Perrett, and Marsh 1969). Recent research attempts to link construal level with the effect of forest versus tree. According to Schwarz and Bless's (1992, 2007) model of exclusion/inclusion and Förster et al.'s (2008) global local model of social judgment (GLOMO), high-level construals in a global processing are more inclusive than in a local processing; such perceivers tend to group the stimulus objects in the same category. In contrast, low-level, local-processing construals are more likely to place stimuli in different categories (see also Trope and Liberman 2010 for a review). Förster (2009) is able to explain how a global processing results in a single focus whereas a local processing reflects a multiple focus. In Förster's (2009) description, the perceiver in a global approach decreases the distance among objects and enhances their groupness as one; on the contrary, the perceiver in a local processing increases the distance of objects and alleviates their groupness. A recent paper on mental construals follows this line of research and finds that consumers at high-level construals view options in a large assortment of objects as more similar, thus reduces choice difficulty (Xu, Jiang, and Dhar 2013).

On the basis of this conceptual framework and the associated empirical results, I argue that the effects of facial resemblance among group members are moderated by perceivers' construal level such that high-level construal enhances groupness and low-level construal reduces groupness. When a high-level construal is induced (participants are exposed to a website headline that highlights the ultimate goal of a fundraising event or other focal stimuli), participants have a tendency to form a team between the presented pair of group members. Such involved group formation would result in the effect of increased facial resemblance that leads to greater mental inferences about perceived group entitativity (i.e. groupness, homogeneity, cohesiveness). Despite contradictory findings that investigate the relation between group cohesion and group performance

(Beal et al. 2003), there is extensive evidence demonstrating that entitative and cohesive groups benefit from positive team traits that lead to better team performance (Hollingshead 1998, 2000; Mathieu et al. 2000; Mulvey and Klein 1998). Consumers then consistently transfer perceptual group entitativity, inferred from the evaluation of represented groups of faces, to the associated presented products (Beckwith and Lehmann 1975; Wirtz and Bateson 1995). Therefore, perceivers with high-level construals are more likely to experience group formation in relation to the presented group and to purchase the associated product provided by the group with increased facial resemblance to each other. Conversely, when a low-level construal is activated (participants are viewing a headline that emphasizes how to achieve a fundraising event along with the focal stimuli), perceivers tend to view separately the faces of group members. This disrupts the process of grouping and compromises the effect of facial resemblance so that mental inference about group features would not be generated. As a result, I expect no difference to be found in product purchase intent among perceivers with low-level construals, regardless of increased facial resemblance. The hypothesis is as follows:

H1: Construal level moderates the effect of facial resemblance on product purchase likelihood, such that facial resemblance enhances purchase likelihood only among consumers with high-level construals.

In addition, this study hypothesizes that perception of group entitativity mediates the effects of facial resemblance on product purchase likelihood, dependent on construal level.

H2: The interactive effect of facial resemblance and construal level is mediated by perceived group entitativity. Specifically, a) high compared to low facial resemblance is more likely to result in greater perception of group entitativity for consumers with high-level (versus low-level) construals; b) perceived group entitativity leads to increased purchase likelihood, regardless of construal level.

The above hypotheses were tested in a series of three experiments. In experiments 1 and 2, evidence was provided indicating that subtle changes in facial resemblance among team members influence product purchase likelihood, depending on construal level; participants' chronic construal level was measured (experiment 1) and participants' situational construal level was activated (experiment 2). In experiment 3, I replicated the findings with construal level primed as with desirability- and feasibility-featured products and tested the underlying mechanism of perceived group entitativity through the mediation analysis.

Methodologically, I adopted digital morphing to manipulate facial resemblance and this morphing process was applied to the more recent individual-perception studies (e.g., Verosky and Todorov 2010). Additional research, including group-perception studies, uses either original photos or real people as experimental stimuli. As an emerging methodology in consumer research (e.g., Gorn, Jiang and Johar 2008; Tanner and Maeng 2012), this technique digitally combines the facial photographs of two (or more) different individuals to produce a composite face that represents a weighted average of the features of all the input faces. By controlling how much each input face contributes to the morph output (anywhere from 0% to 100% of the total contribution) I am able to precisely (and objectively) vary the degree of facial resemblance among team members in this study's stimuli samples, while holding other extraneous variables (e.g., gaze direction, facial expression) constant.

2.3 Experiment 1

Experiment 1 was designed to test H1 that high facial resemblance leads to greater product purchase likelihood among consumers with high-level construals compared to those with low-level construals. To generate an initial set of results, the construal level was operationalized as using the

25-item Behavior Identification Form (BIF) to assess participants' chronic level of construals (Vallacher and Wegner 1989).

2.3.1 Method

Stimuli. The cover story is about Brian and Mason, two distinguished young artists who are trying to raise funds for art education in exchange of their artwork. In order to develop the facial stimuli of the two young artists, I recruited lay persons from a university orchestra and shot a set of photos of them; each person who sat for photos was paid $10 for his/her participation. Participants in the photo shoot were instructed to look directly at the camera, with their head position, gaze direction and facial expressions carefully controlled (i.e., Adams and Kleck 2003; Beaupré and Hess 2006). To develop the group facial stimuli required for the experiment, I first selected two models of the same gender and similar age from the developed photographs. Previous researchers have confirmed that the digital morphing of facial expressions and structural configurations to create varying stimuli is a valid procedure (e.g., Etcoff and Magee 1992; Calder et al. 1996). Next, to create the morphological facial composites within two members, the prototype photographs of Face A and Face B were blended into composite images on each continuum using the software application Morph Age (Sebbe 2008). Following Calder et al.'s (1996) three-stage guideline, the researcher carefully outlined each individual's internal face features (e.g., eyes, eyebrows, pupil, nose, and mouth) and external features (e.g., hairline, face shape, chin shape, and hair) to start the morphing. The Face A-Face B continuum involves 10 equal increments, which allowed for the production of blended faces moving from Face A to Face B. For instance, Face 1 (90% member A, 10% member B) was shifted one-tenth towards the prototype of Face B. Thus, by selecting corresponding slider positions and saving each composite image, Face 1 (90% member A, 10% member B) and Face 9 (10% member A, 90% member B) were created as an experimental stimulus

in the low resemblance condition, whereas Face 3 (70% member A, 30% member B) and Face 7 (30% member A, 70% member B) were generated for the high resemblance condition (see Figure 2). In addition, Photoshop software was used to fix blurry hair or other photographic issues caused by the morphing procedure.

Participants, Design, and Procedure. One hundred and seventy-three undergraduate students (46% female; M_{age}=22 years old, *SD*=4.95, ranging from 18 to 35) from a large southeastern university took part in this study in exchange for course credit. Student participants were randomly exposed to either the low-resemblance condition group (10% morphing) or the high-resemblance condition group (30% morphing), supporting the development of a between-subjects research design. After reading the cover story and being exposed to a snapshot of a website including the two young artists and one sample painting, participants were asked to report (i) how interested they were in purchasing the painting; and (ii) how likely they were going to buy the painting. Each item was measured on a seven-point Likert scale, ranging from 1 (not interested at all/very unlikely) to 7 (very much interested/very likely). The two items were combined to form an index representing purchase likelihood (r= .78).

Following the completion of the main study, participants continued to fill out the BIF which is a 25-item questionnaire measuring their chronic construal level (Vallacher and Wegner 1989). Each item allows participants to interpret a behavior (e.g., reading) by selecting a description of such an action at either an abstract and high level (e.g., gaining knowledge) or at a concrete and low level (e.g., following lines of print). The option of a high-level identification was coded as one and the option of a low-level identification was coded as zero. The individual scores of 25 items were added up to reach a total BIF score, in which a higher (lower) score indicates a greater (less great) tendency toward construing information at a more abstract (concrete) level. Additional ancillary measures (e.g., demographics) were collected in the end.

2.3.2 Results

Purchase Likelihood. To examine the interactive effects of facial resemblance and construal level (BIF score) on purchase likelihood, I followed Preacher and Hayes's (2008) procedure and conducted the regression analysis including spotlight analysis. Regression analysis was performed with construal level being a continuous variable. Following what Fitzsimons (2008) recommends, I performed spotlight analyses using one standard deviation below the mean of the index (e.g., low-level construal) and one standard deviation above the mean of the index (e.g., high-level construal).

Among participants with abstract and high-level construals, the spotlight analysis revealed a significant and positive effect on purchase likelihood ($b_{abstract}$= .68, t= 2.53, p= .01), suggesting that high (versus low) facial resemblance between young artists enhanced product purchase likelihood (Figure 3). However, for participants with concrete and low-level construals, there is no significant effect of facial resemblance on purchase likelihood ($b_{concrete}$= -.06, t= -.24, *ns*). These findings support H1.

2.3.3 Discussion

Experiment 1 has provided initial support for this study's hypothesis that the effects of high versus low facial resemblance are moderated by respondents' construal level. Increasing facial resemblance among group members results in greater product purchase likelihood for consumers with high-level construals, whereas there is no effect of facial resemblance among consumers with low-level construals.

A limitation of experiment 1 was that I included construal level as an individual difference variable in the testing. In seeking additional evidence based on a preliminary demonstration using construal level as a measured variable, I manipulated construal level by priming the advertising context in experiment 2. In the next experiment, prior to uncovering the underlying mechanism of

the cover story, I plan to first rule out potential explanations including perceived facial similarity and attention. In particular, the argument will be made that the mental interpretation of facial resemblance based upon construal level has three layers: 1) perceivers with both high- and low-level construals pay equal attention to face stimuli; 2) there is no difference in perception of facial similarity between two types of perceivers, meaning the manipulation check of facial resemblance is successful and only has a main effect; and 3) the enhancing effect of facial resemblance caused by high-level construal priming is actually attributed to mental inferences about group traits such as group entitativity, which is to be examined in experiment 3.

2.4 Experiment 2

The purpose of experiment 2 is three-fold. The first objective is to further strengthen the hypothesis that the effect of facial resemblance on product purchase likelihood only holds for consumers with high-level construals. In addition, this effect could be accounted for in the attention literature; when evaluating a product, people with high-level construals pay more attention to the holistic picture, including both the focal product and the peripheral cues (e.g., faces in the advertisements), whereas those with low-level construals focus only on the central product (Liberman et al. 2007). To rule out attention as a potential confounding variable, I compared the ratings of attention on faces and product across four conditions. Finally, I recruited Amazon's Mechanical Turk (mTurk) users as a non-student sample to enlarge the generalizability of the findings.

2.4.1 Method

Stimuli. As with experiment 1, the snapshot of the website featured two representative pictures of young artists who are holding a fundraising event for art education. The pictures were the same as those used in experiment 1 with one exception: the headline was changed to prime the construal levels. Specifically, the faces of the two artists resembled each other more (30% blended with each other) or less (10% blended with each other). In the abstract construal level conditions, the headline emphasized the end outcomes of participation: "Participate in building a better community with young artists! Support art education with enthusiasm and generosity!" In the concrete construal level conditions, the headline pinpointed the means to achieve the end results: "Participate in the fundraising event with young artists! Support art education through enjoying arts and purchasing artwork!" The rest of the advertisement was identical across the four conditions (see Figure 4).

Participants, Design, and Procedure. The study has a 2 (facial resemblance: high versus low) × 2 (construal level: abstract versus concrete) between-subjects design. One hundred thirty-three participants from mTurk crowdsourcing services were recruited and paid 50 cents each for their participation (46% female; *Mage*=35 years old, *SD*=13.2, ranging from 18 to 72). Participants were randomly assigned to one of the four conditions in the between-subjects design. Immediately after exposure to a snapshot of the website, including highlighted headlines, the pictures of two young artists, and a painting as the product, participants were asked to click on the regions that attracted their attention. Next, on a 7-point scale, they reported their interest in purchasing the painting and their likelihood of buying the painting, which were later combined into the overall purchase likelihood score (r= .78). To ensure the manipulation of construal level, participants rated the abstract level of the advertisement claim on two items that assess whether the message "emphasizes abstract information" and "focuses on an abstract level", which were averaged as perceived abstract

level (r= .89; Yang et al. 2011). Similarly, the index of perceived concrete level was formed from the items measuring concrete information and concrete level (r=.91). These answers were on a 7-point Likert scale ranging from 1 (strongly disagree) to 7 (strongly agree). Furthermore, as a manipulation check of facial resemblance, participants were asked to respond to a one-item measure of perceived similarity ("How similar are the young artists?") on a 7-point Likert scale (1=very dissimilar; 7=very similar). Finally, participants were probed regarding their perception of the purpose of the study. They revealed no suspicion about the stimuli or the prediction of the study's hypotheses.

2.4.2 Results

Manipulation Checks. Two separate 2 (facial resemblance) x 2 (construal level) ANOVAs were conducted on respondents' perception of abstract level and perception of concrete level. As expected, results showed only a significant main effect of construal level on perceived abstract level ($M_{abstract}$= 4.21, $M_{concrete}$= 3.47; $F(1,129) = 7.47$, $p < .01$) and on perceived concrete level ($M_{abstract}$= 3.99, $M_{concrete}$= 5.17; $F(1,129) = 18.60$, $p < .001$). The main effects of facial resemblance and the interaction effects remained insignificant (*p's*> 1.0). Hence, the manipulation of construal level is supported. Moreover, I performed the same two-way ANOVA on data related to perceived similarity. Results demonstrated that perceived similarity differed significantly between the high resemblance and the low resemblance conditions (M_{low}= 4.63, M_{high}= 5.89; $F(1,129) = 28.08$, $p < .001$), suggesting that the manipulation of facial resemblance was successful. There was no significant difference in perceived similarity between construal levels (F=1.15, *ns*) and neither was the interaction effect (F<1).

Purchase Likelihood. A two-way ANOVA conducted on purchase likelihood indicated a significant interaction effect ($F(1, 130) = 4.26$, $p< .05$). As Figure 5 illustrates, planned contrasts

analyses showed that consumers at an abstract level tended to buy the product presented by the high-resemblance versus low-resemblance artists (M_{low}= 2.30, M_{high}= 3.08; F(1, 130) = 4.97, p<.05). In contrast, among consumers at a concrete level there was no significant difference in purchase likelihood between the facial resemblance conditions (F<1).

Attention. Findings could have been driven by participants' attention. For instance, respondents at a more concrete level could be less likely to pay attention to faces of the artists and thus tend not to be influenced by face resemblance. In this experiment, I attempted to rule out this plausible alternative account by evaluating click-through rates on computer screens across conditions. The total number of click-through rates on faces was calculated as a proxy of attention and a one-way ANOVA of construal level on attention showed that participants did not differ significantly at the abstract level or at the concrete level (F = 1.40, *ns*). As an additional step to rule out this alternative explanation, I included attention as a covariate in the original model and the interactive effects of facial resemblance and construal level on purchase likelihood remained significant (F(1, 129) = 4.25, p< .05).

2.4.3 Discussion

The first two laboratory experiments provided consistent support for the main prediction that increased group facial resemblance results in greater product purchase likelihood only for individuals with high-level construals. While ruling out alternative accounts, experiment 2 did not identify the underlying mechanism. This paper predicted H2 according to grouping versus separating tendencies triggered by high- versus low-level construals. When high-level construal level is activated, perceivers are more likely to link presented objects closely, thus making a stronger inference about the facial resemblance among group members as a more entitative cohesive team that produces a product that attracts higher levels of purchase intent. On the contrary, when

low-level construal is primed, perceivers have the tendency to disconnect the objects with each other and to diminish the mental processing of the facial resemblance effect. Therefore, in experiment 3, this study seeks to examine the mediating role of perceived group entitativity.

2.5 Experiment 3

Experiment 3 aimed to extend the proceeding results in two ways. First, as Trope and Liberman (2010) noted, desirability involves an end state that reflects a high-level construal, while feasibility highlights the means to reach an end state that is similar to a low-level construal. Hence, I operationalized construal level as the desirability or feasibility of the product and replicated the findings of experiments 1 and 2. Second, I examined the mediating role of perceived group entitativity in the interactive effects of facial resemblance and construal level.

2.5.1 Method

Stimuli. The cover story is about Eric and Ryan who are furniture designers working as a team for a furniture company. In experiment 3, the premise was that consumers evaluating the high-resemblance designers compared with the low-resemblance designers will be more likely to purchase desirability-featured furniture but no difference will be found when buying feasibility-featured furniture. I took photos of employees from a local firm who volunteered to participate in this study and applied the facial morphing techniques used in experiment 1 to generating a new set of stimuli (Figure 6). In the high resemblance condition, each designer's facial features contained 30% of the other's face. By contrast, in the low resemblance condition, 10% of the other's face was blended in that of the first person.

To manipulate construal level and identify product features, I ran a pretest (N= 25) in which participants responded to an open-ended question aimed at revealing the desirable and feasible

product attributes (adapted from Liu 2008): "What are your main determinants when purchasing furniture?" Words such as "trendy" and "stylish" were selected as desirability attributes. Concepts of durability and affordability were chosen as feasibility attributes. In a separate pretest (N= 95), two pictures of desks were downloaded from Google Images (see Figure 7) and their desirability (trendy, stylish, desirable; α= .90) and feasibility (durable, affordable, feasible; α= .72) ratings were measured. A 2 (construal level: desirability vs. feasibility) ×2 (perceived product attributes: desirability vs. feasibility) repeated-measure ANOVA in a mixed-factorial design revealed a significant interaction effect (F (1, 93) = 106.69, p< .001). In particular, participants gave higher ratings on desirability attributes ($M_{desirability}$=4.40, $M_{feasibility}$=2.67, F(1, 93)=28.50, p< .001) in the desirability condition and higher ratings on feasibility attributes ($M_{desirability}$=3.34, $M_{feasibility}$ =4.76, F(1, 93)=37.51, p<.001) in the feasibility condition. Hence, the construal level manipulation was successful.

Participants, Design, and Procedure. The study utilized a 2 (facial resemblance: low vs. high) × 2 (construal level: feasibility vs. desirability) between-subjects design. One hundred and seventy participants (39% female; *Mage*=22 years old, *SD*= 4.42, ranging from 18 to 48) were randomly assigned to one of the four conditions. Exposed to the picture of the product along with a team of designers, participants were first asked to estimate purchase likelihood by answering "How interested are you in purchasing the desk?" and "How likely are you going to buy the desk?" (r=.75), anchored at 1 (not at all interested/very unlikely) and 7 (very much interested/very likely). They then assessed to what extent they thought that "the designers constitute a homogeneous group", "the designers constitute a cohesive group", and "the designers seem united", with each item anchoring between 1 (not at all) and 7 (very much so) (adapted from Crump et al. 2010; Dasgupta et al. 1999). The three scales were averaged to comprise an index of perceived group entitativity (α= .83) that would be used in the mediation analysis. Additionally, participants responded to the item of

perceived similarity ("How similar are the young artists?") on a 7-point scale ranging from 1 (very dissimilar) to 7 (very similar) to check the success of facial resemblance manipulation.

2.5.2 Results

Manipulation Check. I ran a 2 (facial resemblance) x 2 (construal level) ANOVA on perceived similarity. Results indicated that perceived similarity differed significantly between the high resemblance and the low resemblance conditions (M_{low}= 4.97, M_{high}= 5.83; F(1,166) = 22.41, p < .001), suggesting the manipulation of facial resemblance was successful. There was no significant difference in perceived similarity between construal levels (F<1) or neither was an interaction effect on perceived similarity (F(1, 166) =3.04, *ns*).

Purchase Likelihood. Consistent with the previous results, a 2 × 2 ANOVA analysis on purchase likelihood (see Figure 8) was performed to show a significant interaction effect (F(1, 166) = 4.17, p< .05). Specifically, the desirability-featured product designed by the team resulted in significantly higher ratings on purchase likelihood in the high-resemblance versus the low-resemblance condition (M_{low}= 2.31, M_{high}= 3.06; F(1, 166) = 7.62, p< .01). By contrast, the feasibility-featured product received no difference in purchase likelihood across the facial resemblance conditions (F< 1).

Mediated Moderation. To test the mediated moderation model proposed by H2, I followed Preacher and Hayes's (2008) bootstrapping procedures (see Figure 9). First, the IV (facial resemblance), the moderator (construal level), and the interaction term on the DV (purchase likelihood) were regressed in the model. In line with H1 and findings of the first two experiments, a significant two-way interaction was found (b = .78, t = 2.04, p < .05). To be specific, when choosing a desirable product, high versus low facial resemblance led to greater purchase likelihood (M_{low}=2.31, M_{high} =3.06; t(83) = -2.56, p=.01); however, when selecting a feasible product, high and

low facial resemblance had an equivalent effect on purchase likelihood (M_{low}=2.42, M_{high} =2.39; $t(83)$= .14, *ns*). Second, the IV, the moderator, and their interaction were regressed on the mediator (perceived group entitativity). Facial resemblance was shown to interact with construal level on perceived group entitativity (b = .72, t = 2.19, p < .05), which in turn led to increased purchase likelihood (b = .18, t = 2.02, p < .05). Finally, perceived group entitativity was added to the final regression in which the IV, the moderator, the interaction of IV and moderator, and the mediator were regressed on the DV. The effect of facial resemblance on purchase likelihood moderated by construal level was reduced to non-significance (b = .65, t = 1.69, p = .09). Moreover, a significant indirect effect through perceived group entitativity emerged in the results (95% confidence interval: .001, .380). Taken together, these results supported H2; perceived group entitativity fully mediated the interactive effects of facial resemblance and construal level on purchase likelihood.

2.5.3 Discussion

Replicating findings in the first two studies and in support of H1, experiment 3 demonstrates that the high-resemblance compared with the low-resemblance team results in higher ratings on purchase likelihood only in the desirability condition. In the feasibility condition, the effect of facial resemblance disappears. Experiment 3 has also provided evidence for H2, which highlights the mediating role of perceived group entitativity. Presented with desirability-featured products, consumers are more likely to seek information in a highly-related manner that enhances mental processing of facial resemblance that represents a cohesive team and therefore boosts purchase likelihood of the product. Given feasibility-featured products, heuristic cues such as facial resemblance attributes are perceived to be further away from each other; hence, the face of one member is independent of another's and increasing facial resemblance does not enhance perceivers' inferences about group entitativity. Consequently, this study suggests that the interactive effect

between facial resemblance and construal level on purchase likelihood can only be explained by consumers' mental perception of group entitativity.

2.6 General Discussion

This study contributes to the literature on facial resemblance and, by and large, to face-based inference research. In addition, facial resemblance has a fundamental link to Darwinian's modules, promoting a broader stream of research on face-based trait inferences that are repeatedly demonstrated across various domains, including mate choice (e.g. Hinsz 1989), politics (see Hall et al. 2009 for a review), law (e.g., Blair, Judd, and Chapleau 2004), and business (Gorn et al. 2008; Naylor 2007). While it is well established that how individuals appear to be (e.g., facial morphology) can affect how they are judged by others, little research concerns perception of groups (of individuals) purely based on facial cues. This study extends the scope of this line of research from individual-level perception to group-level perception in the context of facial resemblance. Consistently, I demonstrate, via three experiments, that increasing facial resemblance only enhances product purchase likelihood for consumers with high-level construals. These findings are robust across different operationalizations on construal level (self-measured vs. message-framed vs. desirability/feasibility featured), contexts (fundraising event vs. shopping for furniture), and sample characteristics (undergraduate students vs. non-student sample from mTurk). Mediation analysis in experiment 3 provides additional support for the underlying mental process through perceived group entitativity; among perceivers with high-level construals, facial resemblance increases perception of group entitativity, which subsequently leads to higher product purchase likelihood. Built on research that studies facial resemblance to familiar others or learned faces (e.g., Veroksy and Todorov 2010), the findings of this study provide theoretical and practical support for the effect

of unfamiliar faces. Perceivers' evaluations and impressions of unfamiliar others, without any facial cues of the self or the familiar one, are influenced by physical similarity among the unfamiliar faces.

In addition to the group-perception and unfamiliarity-similarity extension, this study offers an enrichment of facial resemblance research by bringing the process of group formation through mental face-based inferences. In this paper, I used the concepts of groupness induced by perceivers' construal level to understand the way perceivers make face-based inferences about group traits. When perceiving a set of objects or stimuli, consumers with high-level versus low-level construals are more likely to group the stimuli collectively, as one, or separate the stimuli away from each other as different individual objects. As far as physical facial features among group members resemble to those of each other, perceptual groupness, or group entitativity, can only be mentally processed among individuals with high-level construals. For perceivers with low-level construals, even if they subconsciously detect physical resemblance, the disability to view stimuli in a holistic picture would hinder making any inference about such similarity. This, therefore, provides new insights into the role of construal level theory or the grouping effect in group perception based on facial resemblance.

Given the widespread usage of team photos or multi-face imageries in visual media, the findings of this study have managerial implications for a wide range of audiences. Teamwork plays a significant role in firm advertising, collaborative consumption, political campaign and academic collaboration. For example, university websites include portraits of students as a group; donation brochures feature pictures of children in need of help; and a team of real estate agents or lawyers is often shown on billboards. It is important to understand the impact of ubiquitously presented faces on consumers' intentions and behaviors towards products or services collectively offered by the group. This study pinpoints facial resemblance as a significant factor that increases purchase intent

and how to achieve such an effect strategically. Marketers can improve purchase behavior by morphing facial features of a group of salespeople and altering the advertising message at an abstract high-level framing. Highlighting either the product's ultimate benefits or its desirability-related features is one way to induce high-level construal. To sum up, this paper highlights the role of construal level in the face-based inference generated by resemblance within group members. Further studies may explore the effects of more than two faces in a group at a more fine-grained, resemblance level.

CHAPTER THREE: IS ENTITATIVITY ALWAYS BENEFICIAL? THE DIFFERENTIAL IMPACT OF FACIAL RESEMBLANCE ON DONATION OF TIME VERSUS MONEY

Abstract

Although charity advertisements often display images of multiple victims, the single-victim effect remains a dominating role in literature and little is known concerning giving to multiple victims. In this research, I investigate the differential effects of group entitativity (e.g., unity, coherence, cohesiveness) on two types of donation (time vs. money). In three studies, I find that presenting multiple victims high (versus low) in entitativity increases donation of time but decreases donation of money. Entitativity is manipulated and measured as conceptual (neighborhood) and perceptual (uniform, body gesture, and facial expression) determinants. Furthermore, I argue that such differential effects on donation of time versus money are driven by consumers' psychological wellbeing associated with time or money. In particular, donating time to a highly entitative group evokes donor's emotional well-being, and thus leads to greater donation of time. By contrast, donating money to multiple victims high in entitativity alleviates cognitive well-being, which results in less donation of money.

Keywords: group entitativity, donation, charitable giving, time versus money

3.1 Introduction

The charitable organizations and charity-related products have expanded dramatically in the United States. With growing concerns about the domain of charitable giving (Strahilevitz and Myers 1998; Shang, Reed, and Croson 2008; Winterich and Barone 2011), research findings on charity accentuate the factors that impact the donation behaviors, such as persuasion tactics (Ferraro, Shiv, and Bettman 2005) and facial cues (Small and Verrochi 2009). Compared to pallid information, vivid identifiable images of victims are found to be a more influential factor in charitable giving (Nisbett and Ross 1980; Small and Verrochi 2009). Thus, literature on manipulation of audience emotion demonstrates a stronger effect of featuring, in visual advertisements, an identifiable single victim over a large number of muted victims on charitable giving (e.g. Kogut and Ritov 2005). The identifiable single-victim effect derives from greater emotional responses to donation behaviors (Small and Loewenstein 2003; Kogut and Ritov 2005). Criticism from academic researchers focusing on victims' welfare emerges, as more can benefit when donation outcomes can be distributed to multiple victims versus a single victim (Galak, Small, and Stephen 2011).

A more recent study focuses on multiple victims rather than a single victim and proposes group entitativity as an effective factor in increasing donations in a group setting (Smith, Faro, and Burson 2013). Entitativity is defined as the degree to which a group of individuals collectively forms a single coherent entity (Campbell 1958; Ip, Chiu, and Wan 2006). In particular, Smith and his colleagues (2013) show that a more entitative number of victims comprising a more coherent unit receives more favorable evaluations of victims with positive characteristics and thus leads to higher donations. They also found that entitativity has a negative effect on victims with descriptively negative traits. Nevertheless, it remains unclear if entitativity can only be explained by the dominating single-victim effect as the highly entitative and coherent group is perceived as

more like a single victim. For example, if a donor has 50 dollars to give, will s/he donate the money to five victims from one family or five victims from different families? How about donating time to these victims? Is s/he more likely to spend one hour with victims from the same family or different families? In this research, I attempt to investigate the effect of entitativity on different types of donations and aim to answer these research questions, (1) is entitativity always beneficial for multiple victims? (2) How does entitativity influences donation of time versus money? And (3) what might be the underlying mechanisms that explain the effects?

To prime entitativity, I use both conceptual and perceptual manipulations that trigger donors' affective and cognitive information processing. Inferential bases of entitativity perception are usually induced by similar physical (e.g., skin color; Dasgupta, Banaji, and Abelson 1999) and behavioral cues (e.g., common movement or body gestures; Ip et al. 2006). Consequently, I propose the differential effects of victims' entitativity on two types of donation (time and money). It is posited that entitativity among multiple victims increases donation of time but decreases donation of money. Furthermore, I argue that such differential effects on donation of time versus money are driven by donors' mindsets associated with time or money donation.

3.2 Conceptual Background

3.2.1 Group Entitativity in Prosocial Behavior

Groups are perceived by others in a holistic manner (Bruner 1956; Hamilton, Sherman, and Maddox 1999). However, not all aggregates of individuals are considered as groups. For instance, people waiting at a bus stop or rushing in the airport are less likely to be viewed as a group (Spencer-Rodgers, Hamilton, and Sherman 2007). During the past several decades, research has discussed when aggregates of individuals are perceived as groups, the nature of "groupness" or

group entitativity, and different types of groups (Campbell 1958; Hamilton, Sherman, and Rodgers 2004; Lickel et al. 2000).

Campbell (1958, p17) introduced "entitativity" as "the degree of being entitative, the degree of having the nature of an entity, of having real existence," and indicated that a collection of individuals qualifies as a group if they are in close proximity, share similar characteristics, or move together in the same direction. Lickel et al. (2000) in their study divided groups into four categories with respect to levels of entitativity: intimacy groups (e.g., family, sports team; highest level of entitativity), task groups (e.g., jury, committee; less entitative than intimacy groups), social categories (e.g., women, blacks; less entitative than task groups), and loose associations (e.g., students from a university, residents living in the same neighborhood; lowest level of entitativity).

While Psychology literature on entitativity has focused on its influence in stereotyping, group typology, and psychological judgment (Dasgupta et al. 1999; Lickel et al. 2000; Spencer-Rodgers et al. 2007), one study in the discipline of Marketing also suggests the role of entitativity in boosting donations to large numbers of victims compared with single victims (Smith et al. 2013). Particularly, group entitativity can lead to a group-victim effect that is identical to that generated by a single-victim effect (Smith et al. 2013). In other words, a more entitatively coherent group of victims is judged similarly as a single individual victim, whereas a non-entitative group is evaluated differently from an entitative unit (Hamilton and Sherman 1996). Built on prior work proposing entitativity as a process variable with a donation context (Dickert 2008), Smith et al. (2013) emphasize only group donations and manipulate entitativity through common movement and membership of social units (family).

Along the same line, I argue that increasing level of entitativity among multiple victims leads to perception of a unified coherent group, thus affecting donation behaviors. Existing research

has examined the effect of group entitativity on monetary donation (Smith et al. 2013). However, it remains unclear how entitativity among multiple victims influences nonmonetary donation. I expect to show when and how entitativity may increase or decrease donation behaviors, depending on consumers' distinct mindsets associated with donation types.

3.2.2 Donating Time versus Money

Time and money are two substantial dimensions in our lives as well as in the donation context. Research shows that the concept of time activates one's emotional meanings whereas the concept of money activates the rational, economic utility (Liu and Aaker 2008). I draw theoretical direction from inherent differences between time and money, and argue that donation types (time vs. money) should activate people's mindsets associated with donation of time or money. Some research shows that when people are exposed to an entitative group of victims similar to a single victim, they use an integrative, elaborative processing to make inferences about group traits (Hamilton, Sherman, and Maddox 1999; Rydell and McConnell 2005; Smith et al. 2013), whereas some studies find that an affective processing occurs in the charitable behaviors (e.g., Small and Verrochi 2009). Other literature has proposed a framework of two mental processes but failed to conduct empirical tests in different donation types (Liu and Aaker 2008; Loewenstein and Small 2007; Small, Loewenstein, and Slovic 2007). Built on consumers' differential mindsets accompanied with time and money (Liu and Aaker 2008), I predict that people process information of an entitative group in both affective and deliberative ways in which time tends to elicit emotional well-being and money tends to infer cognitive well-being.

When asked to donate time, donors are more inclined to imagine and experience feelings and emotions derived from volunteering time as an experience (Schwarz and Clore 1996; Van Boven and Gilovich 2003). Specifically, volunteering is linked with one's happiness (McGowan

2006). Aligning with the entitativity literature, highly (versus low) entitative groups are more likely to elicit stronger judgments toward the target groups (Dasgupta et al. 1999; Geier, Rozin and Doros 2006; Smith et al. 2013). Following this reasoning, donating time to multiple victims high in entitativity (similar to the single-victim effect; Smith et al. 2013) versus those low in entitativity makes people feel happier as if they have greater emotion reactions toward a single victim. Increased perception of one's own emotional well-being from voluntary donation results in greater time contribution. Consequently, when attracting donation of time, victims in the highly (versus low) entitative group evoke greater emotional responses, and thus elicit greater donations. Take the example of spending time with five victims from one family compared to those from five different families. It is often the case that people are more likely to build emotional bonding and feel happy with one family instead of five families.

By contrast, donors have the tendency to contribute financially to victims from different families versus one family. People are found to donate more to save a larger proportion of lives (Erlandsson, Björklund, and Bäckström 2014; Small and Loewenstein 2003; Small et al. 2007). For example, ten out of 100 death rates raise greater social concerns than ten out of one million, and such a "drop-in-the-bucket thinking" effect is more salient among targets in group unity (Bartels and Burnett 2011). Another effect of "unit asking" suggests that by merely presenting donors to the number of recipients, they increase their willingness to donate (Hsee, Zhang, Lu, and Xu 2013). Following and extending the same logic, donors are likely to weigh and calculate the cognitive well-being of their donation when asked to give to victims in one unit or in *N* units. Specifically, because money activates value-maximizing goal (Vohs, Mead, and Goode 2006) and perceived utility (benefits and costs; Erlandsson et al. 2014), donors are more likely to believe that donating money to victims from five families (low entitative group) rather than to those from one family (highly entitative group) can maximize donating outcomes and benefit more victims. Such

perceived cognitive well-being in turn leads to increased donation (Sharma and Morwitz 2012). To sum up, regarding monetary donation, a highly (versus low) entitative group of victims reduces perceived utility and cognitive well-being of donating and therefore decreases donation of money.

No previous studies have explicitly tested these two possible mediators, emotional and cognitive well-being, in two types of donation simultaneously. Little empirical evidence demonstrates the mediating role of donors' own welfare in donating behavior, except that one study proposes happiness of giving (Liu and Aaker 2008) and another includes effectiveness in the measurements (Smith et al. 2013). Thereby, in Study 2, I run mediation models of two donation types separately, and include emotional and cognitive well-being as possible mediators in each model. A third alternative mediator that I include in the models is sympathy, as prior research on charitable behaviors has identified sympathy as a critical attribute for donors' cause. For example, donating more is linked to feeling more sympathetic to a sad-faced victim (Small and Verrochi 2009). Greater emotional concerns toward the gazelles are reported among entity theorists rather than incremental theorists (Smith et al. 2013). Nevertheless, emotions derived from victims (i.e., sympathy toward victims) are distinguishable from self-oriented emotions (i.e., personal emotions) in the helping context (Erlandsson et al. 2014).

I argue that when placed in these two types of donation contexts, the perception of donors' own emotional or cognitive well-being, not sympathy toward victims, relies on how donors believe they can maximize the efforts of such emotional or economic donation. In summary, it is predicted that increasing level of group entitativity among multiple victims has differential impacts on two types of donation such that highly entitative groups, compared with low entitative groups, are more salient in soliciting donations of time, whereas low (versus high) group entitativity becomes more salient in attracting donation of money. More formally, I propose that:

H1: High compared to low group entitativity among multiple recipients increases donation of time but decreases donation of money.

H2: The differentiated effects of group entitativity on donation types are driven by consumers' mindsets associated with donation of time versus money: a) high (versus low) entitativity enhances donors' emotional well-being which leads to greater donation of time; and b) high (versus low) entitativity reduces donors' cognitive well-being which results in less donation of money.

I test the above hypotheses in three studies. In Study 1, I use a conceptual manipulation of social associations (people from the same neighborhood) and examine whether group entitativity among victims leads to greater donation of time but reduces donation of money. Study 2 uses a perceptual manipulation (in uniform) and replicates the finding in the first study. Moreover, in Study 2 I test the mediating role of consumers' mindsets in the effects of group entitativity on donation types. Study 3 tests the main hypothesis by directly measuring victims' physical similarity as well as common fate (body gesture and facial expression) and investigating the downstream effects of entitativity on time- and money-related behaviors in a real charity context.

3.3 Study 1: Entitativity Increasing Donation of Time but Decreasing Donation of Money

Study 1 is designed to test H1, demonstrating that high versus low group entitativity among victims leads to greater donation of time but less donation of money. In this study, I manipulate entitativity by assigning a group of children to a group of loose associations. Among the list of 40 groups studied by Lickel et al. (2000), loose association social groups refer to people living in the same neighborhood or people who like the same type of music. Although this type of group is not as

high in groupness as intimacy groups (e.g., family), the manipulation adequately distinguishes levels of group entitativity.

3.3.1 Method

Stimuli. The donation appeal features a group of children as either a high or low entitative group. The photo was downloaded from GoFundMe.com. The children were presented with their group name and a group picture (Kogut and Ritov 2005; Smith, Faro, and Burson 2013). Adapted from previous literature (Lickel et al. 2000), in the high-entitativity condition, the children were referred to a group from one neighborhood. In the low-entitativity condition, the children presented in the same picture were referred to individuals from ten neighborhoods (for details, see Figure 10).

Study Design, Participants, and Procedure. The study has a 2 (group entitativity: low versus high) X 2 (donation types: time versus money) mixed factorial design, with entitativity as a between-subjects variable and donation types as a within-subjects variable. One hundred and six undergraduate students (M_{age} = 21.80, ranging from 18 to 41; 49 females) from a large southeast public university participated in exchange for course credit. After reading the cover story and donation appeal, participants responded to a series of quantitative measures of donations. Adapted from Liu and Aaker (2008), time pledged was assessed by the question, "How many times in the next six months would you volunteer your time?" on a scale between 0 and 6. Similarly, amount donated was measured by indicating the amount participants were willing to donate, anchoring at 0 to 100 dollars. To minimize the time-ask and money-ask effect (Liu and Aaker 2008), the measures of donating time and donating money were assigned in a counterbalanced order. As a manipulation check of group entitativity, participants evaluated the degree to which the group of children seemed to be individuals with distinct identities (1) or a tight group with a single identity (7) (Bartels and

Burnett 2011; Smith et al. 2013). Additional ancillary measures (e.g., demographics) were collected at the end of the study.

3.3.2 Results

Manipulation Check. I conducted a t-test to confirm the success of the entitativity manipulation. Compared with those in the low entitative group, the children in the highly entitative group were perceived as more entitative (M_{high}= 3.98, M_{low}= 2.14, t = -6.48, p< .001, η^2 = .29).

Donation of Time and Money. One-way ANOVAs were performed on the time participants pledged to volunteer, and the amount of money they pledged to donate. The main effects of entitativity on donating time (F (1, 104)= 4.14, p< .05, η^2 = .04) and donating money (F (1, 104)= 4.65, p< .05, η^2 = .04) were significant. As Figure 11 illustrates, participants in the high-entitativity condition donate more time (M_{high}= 3.80, M_{low}= 3.10) but less money (M_{high}= 27.96, M_{low}= 39.43) than those in the low-entitativity condition. These results provide additional support for H1.

3.3.3 Discussion

The results of the study provide initial evidence for hypothesis 1 that the more entitative a group is perceived, the greater donation of time it attracts and the less amount of money it generates. This study adopts a conceptual manipulation of entitativity by assigning the children in the charity appeal to an association group (from one neighborhood). The potential donors may focus on the picture itself rather than read the specified contexts. In the next study, I will employ a perceptual manipulation of entitativity by using the uniform (which has the same clothing cues such as texture and color). Moreover, I attempt to find support for H2 to test the proposed mediating role of

emotional and cognitive well-being, and to rule out sympathy toward victims as an alternative account.

3.4 Study 2: The Emotional Well-Belling of Donating Time versus the Cognitive Well-Being of Donating Money

Study 2 aims to replicate the findings of Study 1 and investigates the psychological mechanisms underlying the entitativity effects. It is proposed that participants' emotional well-being would mediate the impact of entitativity on donation of time, whereas their cognitive well-being of donating money would explain the effect of entitativity on donation of money.

3.4.1 Method

Stimuli. The experimental context consists of advertisements for an organization that supports children's cancer research (Small and Verrochi 2009). Original photos of children patients were downloaded from Children's Cancer Research Fund. Entitativity was primed as children in uniforms that share similar clothing cues (Campbell 1958; Frank and Gilovich 1988). Thus, the donation appeal features a group of young patients in either a high (all wearing white T-shirts) or a low entitativity (wearing different clothes) condition (see Figure 12 for stimuli).

Study Design, Participants, and Procedure. Study 2 uses a 2 (group entitativity: low versus high) X 2 (donation types: time versus money) mixed factorial design. One hundred and eighty-four undergraduate students (M_{age} = 21.74, ranging from 18 to 50; 96 females) took part in the study in exchange for course credit. The procedures were identical as in Study 1. Participants were randomly assigned to either the low entitativity or the high entitativity condition, and indicated the amount of time and the amount of money they would pledge. The order of time pledged and money pledged was counterbalanced. After self-reporting their intent to donate, participants proceeded to answer

questions assessing the underlying process that consists of measures of emotional well-being, cognitive welfare, and sympathy. To measure emotional well-being, participants were asked respond to the question, "To what extent do you believe happiness is tied to volunteering your time/donating your money to help the children?" (1=strongly disagree; 7=strongly agree; Liu and Aaker 2008). Cognitive well-being was assessed using the question, "To what extent do you believe volunteering your time/donating your money would be effective in helping the children?" (1=strongly disagree; 7=strongly agree; adapted from Smith et al. 2013). As an alternative account, the index of sympathy was combined with ten items (upset, distressed, sympathetic, alarmed, grieved, troubled, compassionate, perturbed, worried, and disturbed; α= .90) on a seven-point scale (1=not at all; 7=very much) (Batson 1983; Small and Verrochi 2009). Toward the end of the study, perceived group entitativity was included as participants evaluated the degree to which the group of children seemed to be individuals with distinct identities versus a tight group with a single identity (Bartels and Burnett 2011).

3.4.2 Results

Manipulation Check. Independent sample t-test of perceived entitativity was conducted and results revealed a main effect. As expected, the young patients in the highly entitative group than those in the low entitative group were perceived as more entitative (M_{high}= 2.31, M_{low}= 3.13, t = -3.31, p = .001, η^2 = .06).

Donation of Time and Money. One-way ANOVAs were conducted on the amount of time and money people were willing to donate. The findings replicated those in Study 1, yielding the differential effects of entitativity on donation of time (F (1, 182)= 7.08, p< .01, η^2 = .04) and donation of money (F (1, 182)= 8.92, p< .01, η^2 = .05). Specifically, the high entitative group compared to the low entitative group produced greater amount of time pledged (M_{high}= 3.43, M_{low}=

2.70; see Figure 13A) but less amount of money pledged (M_{high}= 28.55, M_{low}= 41.53; see Figure 13B).

Mediation Analysis. I tested in two separate mediation models whether the participants' emotional well-being of donating time (cognitive well-being of donating money) mediates the effect of group entitativity on donation of time (donation of money). Following Baron and Kenny (1986)'s steps and Muller, Judd, and Yzerbyt's (2005) procedure, I conducted multiple mediation tests to derive a 95% confidence interval (CI) based on 5000 bootstrap samples (Preacher and Hayes 2004, 2008).

Figure 14 demonstrates the findings of two mediation tests. In each model, I included entitativity as the independent variable, donation as the dependent variable, and emotional well-being, cognitive well-being, and sympathy as mediators. Consistent with the theorizing, emotional well-being fully mediates the impact of entitativity on donation of time (indirect effect = .23; 95% CI: .0168 to .5307). More specifically, results revealed that (1) entitativity had a positive effect on emotional well-being (β = .42, t = 1.97, p =.05); (2) emotion well-being was positively associated with donation of time (β = .54, t= 4.26, p<.001); and moreover (3) the beta value for entitativity dropped from .70 (t = 2.56) to .43 (t = 1.70) when emotional well-being and other potential mediators were included, and the p-value went from significance (p = .01) to non-significance (p = .09). In addition, cognitive well-being (indirect effect = .0002; 95% CI: - .0579 to .0599) and sympathy (indirect effect = .03; 95% CI: -.0219 to .1680) did not have a significant indirect effect. Thus, emotional well-being fully mediates the effect of entitativity on donation of time.

Likewise, the model on donation of money implies that cognitive well-being mediates the effect of entitativity on monetary donation. A similar set of regressions found that (1) entitativity had a negative impact on cognitive well-being (β = - .59, t= - 2.46, p =.01); (2) cognitive well-being

had a positive effect on donation of money (β = 3.02, t= 2.10, p<.05); and (3) the beta value for entitativity changed from -12.98 (t= - 2.99, p<.01) to - 9.49 (t= - 2.28, p<.05) with the p-value remaining significant, when the mediators were included in the model. In sum, cognitive well-being partially mediates the effect of entitativity on donation of money (indirect effect = - 1.79; 95% CI: - 4.8801 to - .2405). However, the indirect effect of emotional well-being (indirect effect = - 1.38; 95% CI: - 4.6218 to .9217) and sympathy (indirect effect = - .32; 95% CI: - 2.3402 to .7002) revealed insignificance.

3.4.3 Discussion

The results of Study 2 are in line with Hypothesis 2 that the effect of entitativity on donation of time (money) is mediated by donors' emotional (cognitive) well-being. While Studies 1 and 2 provide consistent evidence that group entitativity enhances donation of time but reduces donation of money, these findings were achieved in controlled laboratory experiments. In Study 3, I will extend this investigation to a field setting to enhance the external validity of this research. Furthermore, whereas the first two studies focus on attitudinal donations as dependent variables, Study 3 examines the downstream consequences of group entitativity on actual donations.

3.5 Study 3: The Influence of Entitativity on Actual Donations

I collected data from Gofundme.com, one of the world's top crowdfunding websites for individuals. Fundraisers who create fundraising campaigns raise the capital in fourteen categories (e.g., animals, business, charity, community). Fundraisers select a funding goal, whereas donors can choose any amount they are willing to donate. Additionally, donors have an option to share the campaign on Facebook and Twitter. Along with the choices of monetary donating and sharing,

these fundraising campaigns present a static picture, mostly featuring an individual or a group of individuals. This allows us to choose pictures of groups of people and code the entitativity level of such groups. Aligning with prior studies which demonstrate that charitable behaviors tend to be influenced by vivid identifiable images of victims instead of pallid information (Nisbett and Ross 1980; Small and Verrochi 2009), I believe that people's donating behaviors are likely to be affected by images of victims which are readily displayed at the top of the campaign. Unlike existing research that studies similar online platforms such as Kiva.org and compares the effect of single versus multiple victim(s) (Galak, Small, and Stephen 2011), I give particular emphasis to groups of victims to examine the role of group entitativity in charitable behaviors.

In order to examine the effect of group entitativity on actual prosocial behaviors, I first collected publicly available panel data on fundraising campaigns in the "Charity" category, which were accessible (i.e., 452 campaigns) at the time of data collection (December 10-13, 2014). A total of 363 projects include a picture of human being(s). Excluding campaigns with photos that feature individuals ($N = 129$), videos ($N = 27$), and unidentifiable facial expressions ($N = 15$), I was left with a final dataset with 192 projects. These campaigns include pictures of groups showing visible body gestures, facial expressions, and other characteristics (e.g., sex, gender, skin color). The following information was recorded for each campaign: title of the campaign, the group picture, the number of donors, total number of fundraising days, total amount of money raised, total number of shares (Facebook shares and Twitter tweets).

3.5.1 Measurements

Group Entitativity Represented by Body Gesture and Facial Expression. Entitativity identifies similarity, proximity, and common movement (Bartels and Burnett 2011; Campbell 1958). Hence, instead of referring to groups with social associations or groups in uniforms, I measure

entitativity through other perceptual characteristics such as body gesture and facial expression. In this study, I determine a highly entitative group as it demonstrates the same body gesture as if the group shares the common fate or moves in the same direction. Also I code a group with the same facial expression as highly entitative, because facial cues are found to be a prominent determinant of social perceptions (Todorov, Pakrashi, and Oosterhof 2009). Two coders independently categorized body gesture and facial expression into either 0 (different body gesture/facial expression; also as low entitativity condition), or 1 (same body gesture/facial expression; also as high entitativity condition). The inter-coder reliability of body gesture and facial expression was .73 and .74, respectively. According to the coding of body gesture, pictures of 116 fundraising campaigns are categorized as featuring different body gestures or a low entitative group, whereas pictures of 76 campaigns featuring same body gestures or a high entitative group. Similarly, based on facial expression, 84 campaigns feature different facial expressions and 108 campaigns feature same facial expressions. Sample pictures representing the high or low entitativity condition are illustrated in Figure 15.

Monetary Donation Behavior versus Prosocial Sharing Behavior. While viewing each fundraising campaign as well as the group picture, donors are presented with two options, donating money and/or sharing on social media. In terms of donating money, I predict that donors are less likely to contribute to the financial goal set by the fundraiser in the high (versus low) entitativity condition.

Besides making a financial contribution, donors can also choose to spend time and support the campaign by liking it on Facebook and tweeting it on Twitter. Prior research has found that positive emotions can derive from thoughts of spending time doing an activity or having an experience (such as spreading word-of-mouth cause marketing on social media) (Pham 1998; Schwarz and Clore 1996). Although each individual sharing a campaign page on social media only

costs a short of time, the total shares (by adding Facebook likes and Twitter tweets) can be treated as a proxy of time and effort spent by the overall population of donors. Thus, it is predicted that a high (versus low) entitative group positively affects the total number of shares on social media.

Other Control Variables. Literature has suggested other indicators of group entitativity, for instance, social categories (e.g., age, gender, skin color), social membership (family), and uniform (Frank and Gilovich 1988; Lickel et al. 2000). Hence, for each group picture, I coded age, gender, skin color, social membership (from the same family or not), and uniform into 0 (different) or 1 (same). These variables are to be included as control variables in the analyses. While controlling for factors (e.g., social categories, uniform, social membership) that may influence the level of group entitativity, a high entitative versus a low entitative group is more likely to elicit social bond and caring, and as a result, generate a larger number of social media sharing. In terms of funds raised, compared to a low entitative group, a high entitative group has the tendency to undermine donors' cognitive well-being of financial support which leads to less monetary contributions.

3.5.2 Results

Monetary Donation Behavior Undermined by Body Gesture. As expected, there is a significantly negative relationship between body gesture and total monetary donation. When the fundraiser posts a picture of a high entitative group (showing the same body gesture) versus a low entitative group (holding different body gestures), the results of ANCOVA (controlling for age, gender, skin color, social membership, and uniform) revealed that the total amount decreased dramatically (M_{high}= 1383.37, M_{low}= 6537.22; F (1, 185)= 4.81, p< .05, η^2 = .03). None of the control variables had a significant effect on total amount of donation (p's> 1.0) except that age had a directional negative effect on money raised (M_{high}= 3068.21, M_{low}= 6497.66; F (1, 185)= 2.82, p = .10, η^2 = .02).

Monetary Donation Behavior Undermined by Facial Expression. As predicted, facial expression had a negative effect on total amount of donation. Based on the analyses of the same ANCOVA, it is found that increasing group entitativity by displaying the same facial expressions resulted in a large drop in total amount of donation (M_{high}= 1385.81, M_{low}= 8497.45; F (1, 185)= 7.21, p< .01, η^2 = .04). None of the control variables had a significant effect on total donation ($p's$> 1.0).

Prosocial Sharing Behavior Improved by Body Gesture. One the contrary, body gesture positively predicts total shares on social media. ANCOVA on sharing behaviors was conducted, showing that compared to a low entitative group (with the same body gesture), a high entitative group (with different body gestures) is likely to receive more shares (M_{high}= 3800.09, M_{low}= 415.60; F (1, 185) = 9.46, p< .01, η^2 = .05). In addition, age was found to have a positive relationship with total shares (M_{high}= 2879.20, M_{low}= 181.84; F (1, 185)= 4.64, p< .05, η^2 = .02). None of other variables showed an effect on total shares ($p's$> 1.0).

Prosocial Sharing Behavior Improved by Facial Expression. Consistently, facial expression was found to have a positive relationship with the total number of shares. The results of ANCOVA demonstrated that the high-entitativity group (displaying the same facial expression) rather than the low-entitativity group (displaying different facial expressions) tends to generate greater total shares on social media (M_{high}= 2731.95, M_{low}= 499.60; F (1, 185)= 4.25, p< .05, η^2 = .02). Consistently, age showed a positive effect on total shares (F (1, 185)= 4.01, p< .05, η^2 = .02). None of other control variables had a significant effect on sharing behavior ($p's$> 1.0).

3.5.3 Discussion

In this study, I have extended the differential effects of entitativity on consumer donation behaviors to a field context. I examined the effect on two types of donation on Gofundme.com, the total amount of money raised and the total number of shares on social media. The findings provide

consistent evidence for Hypothesis 1 that a high (versus low) entitative group increases donation of time as indicated by the total number of shares on social media. Meanwhile, compared with a low entitative group, a highly entitative group results in decreased donation in total amount of fund raised.

3.6 General Discussion

Across laboratory experiments and field study, I provide support for differential effects of group entitativity on two distinct types of donations (time versus money). Consistent with entitativity that highlights perception of unity according to appearance-based or behavior-based similarity (Campbell 1958; Ip et al. 2006), I use a conceptual manipulation of a social unit (neighborhood) in Study 1, a perceptual priming of uniforms in Study 2, and measurements of physical similarities—body gesture and facial expressions in Study 3. The results reveal that compared with low-entitativity groups, high-entitativity groups of victims attract more donation of time, but attenuate donation of money. Further, the effects are driven by consumers' mindsets triggered by time and money. Donors' emotional well-being or happiness involved in giving associated with nonmonetary donation is enhanced by higher level of entitativity. On the other hand, cognitive or utilitarian welfare associated with monetary donation is discounted by high entitativity. Study 2 examines the role of mediators in the effects of group entitativity, and rules out sympathy as an alternative account.

3.6.1 Factors Influencing Charitable Giving

I contribute to literature on the victim-based factors affecting charitable and helping behaviors in two folds. One is that the dominating effect of a single identifiable victim (e.g., Kogut

and Ritov 2005; Small et al. 2007) has received criticism that donation has greater benefits toward multiple victims instead of a single victim (Galak et al. 2011). Recent research has pinpointed entitativity as a significant factor that helps people give to multiple victims (Smith et al. 2013). In this research, controlling for identifications (in a series of studies, that does not contain individual names but a group name or association), I aim to shed light on the effect of multiple victims. The other movement of the literature is that researchers' focus shifts from immutable (e.g., social identities such as gender and nationality) (Galak et al. 2011; Winterich, Mittal, and Ross 2009) to mutable factors (e.g., facial expression, common movement) (Small and Verrochi 2009; Smith et al. 2013) that bias donation decisions. Adding to this growing line of research in prosocial behavior and consumer research (Mishra 2009; Mishra, Mishra, and Nayakankuppam 2006; Smith et al. 2013), I highlight the role of group entitativity through subtle manipulations and investigate both positive and negative effects of entitativity depending on donation types.

3.6.2 Research on Time versus Money

Previous findings have demonstrated the distinguishable effects of time versus money on charitable giving and consumer research. Activating time arouses greater emotional beliefs (Liu and Aaker 2008), engages consumers in interpersonal-connected behaviors (Mogilner 2010), links with happiness (Aaker, Rudd, and Mogilner 2011), and ultimately generates more donation (Liu and Aaker 2008). Activating money, on the contrary, evokes economic goal (Vohs et al. 2006) and encourages people to leverage benefits and costs (Erlandsson et al. 2014). While existing literature on donation either fails to compare time with money (e.g., Small and Verrochi 2009; Smith et al. 2013) or to empirically test the underlying mechanism of giving time or money (e.g., Liu and Aaker 2008), I attempt to take a step forward and examine donating behaviors as options of time and

money presented together in one scenario. Building on consumers' ways of processing, I argue that time leads to donors' emotional well-being through an affective processing and that money results in cognitive well-being through a deliberative processing. An additional emphasis of the psychological effects is self-oriented other than victim-oriented. I am able to compare all possible mediators not only including donors' own emotional and cognitive welfare, but also emotional concerns toward the victims (sympathy) suggested by literature (Small and Verrochi 2009). I rule out sympathy as an alternative explanation in the mediation analyses, and confirm that the driver of donating is most likely to originate from consumers' own well-being.

3.6.3 Implications for Charities

This paper provides substantive marketing implications for charities seeking donation of time and money. It is suggested that when reaching out to the population using images of multiple victims, increasing group unity or entitativity tends to encourage volunteering but harming monetary donation, especially if volunteering one's time and donating one's money are both available to potential donors. Public policy should advocate personal affective well-being for the type of volunteering and emphasize the cognitive well-being of saving people's lives in terms of raising funds. These findings should be applicable across various fundraising platforms involving traditional (e.g., mail, telephone, and billboard) and more popular, trendy methods (e.g., website, social media).

CHAPTER FOUR: CUSTOMER BEHAVIOR AS A FUNCTION OF SMILE, POWER, AND ULTERIOR MOTIVE

Abstract

Marketers strategically intensify positive facial expressions to enhance first impressions formed by the customers: for instance, compared with the people displaying a small smile, those displaying a big smile are usually perceived more positively (a smiling effect). This paper investigates how smile interacts with customer power and employees' ulterior motive to affect customer behavior. Specifically, when an employee's ulterior motive is not salient to customers, the smiling effect only occurs among powerless customers (Studies 1a and 1b). On the contrary, when the employee's ulterior motive is made salient, the smiling effect emerges among powerful customers (Studies 2 and 3). I propose that the smiling effect increases consumers' behavioral intentions, which are driven by customers' perception of warmth and competence as a result of customers' state of power and their motivation to make inference about the smile.

Keywords: smile intensity, power, ulterior motive

4.1 Introduction

Facial affective display has been found as a persuasion tool to engage customers' attention, usually through a big smiling face. The prominence of emotionally-charged human faces is further exaggerated with the development of social media. Firms attempt to humanize their online appearance by associating the brand with faces of companies' presidents or employees. Celebrities, TV personalities, columnists, and even average consumers, need to manage their personal brands which often start with profile pictures featuring their emotive faces. Given the prevalence of facial affective displays in marketing communications, it is important to understand its impact on perceivers' reactions to a smile.

Face research in social psychology suggests that facial expressions are considered extremely effective in communicating emotions, and face processing is automatic and spontaneous in nature, with inferences being formed after as little as 40 milliseconds of exposure to faces (Keltner, Ekman, Gonzaga and Beer 2003; Todorov, Said, and Verosky 2011). Recent marketing research acknowledges its importance and posits that "if facial expressions in an advertisement can connect viewers to characters in that advertisement, the implications for marketers are potentially far-reaching" (Small and Verrochi 2009: 786). As an initial attempt to study static facial emotional expressions, Small and Verrochi (2009) examine victims' affective display in charity advertisements and find support for the emotional contagion process in observation of negative facial expression, but not of positive facial expressions. Also, their study manipulates affective display at a general valence level (positive versus neutral versus negative), without differentiating the emotional expressions within the positive realm. Therefore, it remains unclear whether and how the different levels of positive facial affective display impact perceivers' reactions. In this research, I attempt to investigate when a more versus less intense smile results in forming a more positive

impression of the displayer (a smiling effect); and propose power as a factor that may moderate the impact of a big smile.

Power is largely defined as asymmetric control over resources as well as outcomes in social relations (Keltner, Gruenfeld, and Anderson 2003; Thibaut and Kelley 1959; Magee and Galinsky 2008). The consumer research on power has found it as influencers in consumer spending propensities (Rucker and Galinsky 2008), spending on the self versus others (Rucker, Dubois, and Galinsky 2011), consumer switching behavior (Jiang, Zhan, and Rucker 2014), conspicuous versus utilitarian consumption (Rucker and Galinsky 2009), and information processing and status seeking (Rucker, Hu, and Galinsky 2014) (for a review see Rucker, Galinsky and Dubois 2012; Galinsky, Rucker, and Magee 2014). In the current study, I propose power as a moderator of the smiling effect on consumers' attitude and behavioral intent, dependent of salience of employees' ulterior motive. In particular, when customers are not aware of employees' ulterior motive, the powerless, compared with the powerful, are more susceptible to a smiling effect. However, when customers are made aware of the ulterior motive, the powerful instead of the powerless customers respond to the smiling effect.

In the following sections, I first review the research on smiles and present theoretical development that predicts the impact of smile intensity and power on consumer behavior, depending on salience of ulterior motive. I further argue that how smile intensity interacts with power and salience of ulterior motive to affect consumer behavior is qualified by warmth and competence perceptions. Results of Study 1 confirm the prediction in the condition that ulterior motive is not accessible to customers. In Study 2, I reveal and discuss evidence for the interactive effects of smile intensity, power, and salience of ulterior motive. I then replicate this finding and

test the underlying mechanism in Study 3. Finally, the main findings and theoretical and managerial implications are discussed.

4.2 Conceptual Background

4.2.1 Perception on Smile

Human face is a powerful and evocative social stimulus. It is the primary channel for emotion communication (Ekman, Friesen, and Ellsworth 1972). Human beings start to mimic emotion expressions right after birth (Hatfield, Cacioppo, and Rapson 1993), recognize emotive faces in a crowd (Hansen and Hansen 1988), and draw inferences about movement trajectories and intentions from facial cues (Nummenmaa, Hyönä, and Hietanen 2009).

Prior research on facial expressions suggests that perceivers often intuit enduring dispositions from momentary displays (Montepare and Dobish 2003). Prior studies that contrast positive expressions with neutral or negative displays (Knutson 1996) seem to suggest a halo effect—a smiling individual is likely to be perceived more positively on all traits. Perceivers infer from momentary smiles that the displayer is happy, carefree, relaxed, and polite (Deutsch, LeBaron, and Fryer 1987), kind, honest, and humorous (Thorton 1943), extraverted, agreeable, sociable, and pleasant (Harker and Keltner 2001; Mueser, Grau, Sussman, and Rosen 1984). Recognizing enhancement effect of positive expression on person perception, people are usually willing to control or intensify their positive affective display for strategic reasons (Andrade and Ho 2009). According to emotional contagion theory (Hatfield, Cacioppo, and Rapson 1992, 1994), observers spontaneously copy and synchronize the positive emotional expressions in a primitive emotional contagion process. Thus, the more intense or the stronger the positive emotional display, the more likely that observers will catch the positive feelings and generate favorable judgments.

This research challenges the uniform effects of smiles, and departs from the extant literature in two important ways: (1) I define and manipulate the intensity of smiles based on muscle group configuration. The small and big smiles are defined based on action unit 12 (AU12) (Zygomaticus major muscle, also called lip corner puller); (2) I argue that the positive effect of smiling intensity may be moderated by customer power and salience of ulterior motive. Next, I introduce power as a moderator and then discuss how smile intensity interacts with power and ulterior motive to influence consumer perception and behavior.

4.2.2 Smile, Powerlessness, and Warmth Inference

Literature has found that consequences of power are associated with cognition processes, self-perception, social perception, performance, behavior, motivation, evaluation, and physiological states (Galinsky, Rucker, and Magee 2014). For example, high power leads to abstract thinking (Magee and Smith 2013; Smith and Trope 2006), spending more on the self (Rucker et al. 2011), producing more creative ideas (Galinsky, Magee, Gruenfeld, Whitson, and Liljenquist 2008), and propensities to take actions (Galinsky, Gruenfeld, and Magee 2003).

Regarding the role of power in interpersonal perception, Galinsky, Magee, Inesi, and Gruenfeld (2006) find that power reduces perspective taking. In other words, high-power individuals are less susceptible to visual, cognitive, and affective cues and less likely to accurately judge others' emotion expressions compared with the low-power individuals. This is due to the fact that the power decreases the focus on others (Galinsky et al. 2006), consumer spending on others (Rucker et al. 2011), and accuracy in estimating others' interests (Keltner and Robinson 1997). Because in the natural service encounter customer power leads to less motivation to interpret others' emotion displays, I predict that powerful consumers fail to react to stronger smiles of the employee.

On the contrary, low-power individuals have the tendency to focus on others and comprehend how others see, think, and feel (Galinsky et al. 2006). The powerless (versus the powerful) tend to learn as much diagnostic information as possible and engage in an effortful and deliberate process of impression formation (Russell and Fiske 2010). Following this reasoning, powerless consumers pay more attention to the smiles in a customer-employee service encounter. Moreover, based on the new model of power (Rucker et al. 2012), state of low power is other-focused and communal-oriented, which enhances sensitivity toward others. Communion as one of two basic modalities of human beings' cognition and behavior, refers to the sensitivity and participation of an individual in a social group (Bakan 1966). In such communal relations, people expect others to express concern for them, to show kindness, and do not expect reciprocation (Clark and Mills 1979).

This need for social bonding and consideration, therefore, drives the powerless to seek for warmth and kindness from the other party. To draw inferences about warmth, perceivers are primarily concerned with positive or negative intentions signaled by an expression (Cuddy, Fiske, and Glick 2008). Positive expressions with higher energy indicate greater intentions to develop social interactions with others, which in turn should lead to higher ratings on an expresser's warmth and friendliness. Research using dynamic interaction context has shown that the intensity of positive expression (measured by frequency of smiling) of an individual positively affect the warmth judgments by perceivers (Bayes 1972; Lau 1982; Deutsch, LeBaron, and Fryer 1987). Hence, a high-intensity smile should result in higher ratings on warmth perception than a low-intensity smile. Thereby, I predict that the more intensely the employee displays her/his smile, the warmer the employee is judged by perceivers with low power, and the more positively the employee is evaluated.

4.2.3 Power and Competence Inference

In line with the theory of motivated attention, when power holders become motivated to achieve certain goals or judge a target, they are apt to process information more systematically and accurately (Russell and Fiske 2010). Thus, powerful compared with powerless customers may then pay attention to and use smiling cues to evaluate an employee, only if they are motivated to do so. For example, power holders are made aware of the employee's ulterior motive. A salesperson's ulterior motive is normally associated with the motive of influencing the customer in making a commission (Campbell and Kirmani 2000), because consumers are more likely to link salespeople with a focus on selling the product than a focus on determining customer needs (Sujan, Bettman, and Sujan 1986). When such an ulterior motive of a salesperson is made accessible to power holders, it sets attention for them to perceive and judge the salesperson using individuating information available.

Although the power holders start to think about people, they are still self-focused (Galinsky et al. 2006) and agentic-oriented (Rucker et al. 2012). Opposite to communion, agency refers to oneself in self-protection, self-assertion and self-expansion (Bakan 1966). As power holders have the freedom and capability to pursue their goals, when they are motivated to perceive others, they tend to perceive people with an agentic lens and focus on how the other party is able to serve their goals or interests (Rucker et al. 2012). In a service scenario, high-power holders are concerned about whether a salesperson can do their job and serve them well. According to Fiske, Cuddy, Glick, and Xu's (2002) stereotype content model, a judgmental criterion of high-status or high-power groups is about low-power groups' ability to carry out the opposition to the ingroup, which leads to one fundamental social dimension, competence. Competence suggests whether one is capable of carrying out those intentions or motives toward customers (Cuddy, Fiske, and Glick 2008). Following the power-competence link, such as power indicating competence (Fiske et al. 2002;

Ridgeway 1991), powerful customers have the tendency to search for employees' competence. People wearing a smile, a perceptual cue, are judged as competent (Reis et al. 1990). As the employee increases smile intensity, a high-intensity emotional expression reflects more effort in producing the expression and stronger willingness to deliver the job successfully, resulting in higher rating on competence perception and more favorable consumer behavior.

Meanwhile, salience of ulterior motive can discount the smiling effect for low-power holders. Since ulterior motive of a salesperson is less likely to be associated with building customer relationships or making them feel good (Campbell and Kirmani 2000), and moreover, in the following studies salience of ulterior motive is primed with making good commission, and low-power customers cannot attain warmth perception and communal relations from intensified smile any more. Hence, low-power individuals are expected not to differ across the smile conditions. Formally, I hypothesize the following with regard to the smiling effect moderated by power and salience of ulterior motive (also see Figure 16 for conceptual framework):

H1a: When employees' ulterior motive is not salient, powerless compared to powerful consumers prefer a big smile over a small smile. In contrast,

H1b: When ulterior motive is salient, powerful compare with powerless consumers prefer a big rather than a small smile.

In addition, I propose with respect to the mediators of the above effects:

H2: Perceptions of warmth and competence mediate the effects of smile intensity, power, and salience of ulterior motive on consumer behavior: (1) in the low ulterior motive condition, the impact of smile intensity and power on behavior is mediated by warmth perception; and (2) in the high ulterior motive condition, the effect of smile intensity and power on behavior is driven by competence perception.

4.2.4 Manipulation of Power and Overview of Studies

According to Galinsky et al. (2014), manipulations and measures of power can be divided into five categories: structural, experiential, conceptual, physical, and individual differences. Structural manipulations involve a hierarchical role such that participants are assigned to the role of manager-boss or subordinate-employee (Anderson and Berdahl 2002; Rucker et al. 2012). This role-playing exercise can be purely hypothetical but still impact participants' sense of power (Dubois, Rucker and Galinsky 2010). Episodic recall task in experiential manipulations was introduced by Galinsky et al. (2003). Participants are asked to recall and write about an experience in which they have power over someone or someone has power over them. More recent research discovered that power can be activated by performing physical postures (Carney, Cuddy, and Yap 2010). For instance, a state of high power can be generated through leaning back and putting legs on a desk, whereas low power can be posed as spearing hands and leaning on the desk.

In order to test the proposed hypotheses, I use a variety of power manipulations, including episodic recall (Studies 1a and 3), physical posture (Study 1b), and mental hierarchical role-playing (Study 2). In Studies 1a and 1b, I examined the effects of smile intensity and power on consumer attitude and behavior intent, when customers are not accessible to employees' ulterior motive. In this case, power attenuates the effect of a high-intensity smile. Study 2 investigated how smile intensity interacts with power and salience of ulterior motive on consumer attitude and behavior. It suggested that when ulterior motive is salient, powerful rather than powerless customers prefer a more intense smile. In Study 3, I explored the perceptual processes underlying the interactive effects of smile intensity, power, and ulterior motive on consumer behavior, revealing that perceptions of warmth and competence play the mediating roles.

4.3 Study 1: Power Harms the Effect of a Big Smile

Study 1 was designed to provide preliminary support for H1a that the effect of smile intensity on consumer behavior is moderated by customer power, when employee's ulterior motive is not salient. While prior research used natural photos of facial expressions to examine the effect of smiles on perceptions (Knutson 1996; Montepare and Dobish 2003), I adopt both natural photos and morphing techniques to manipulate smile intensity. In addition, to prime consumers with power, I use episodic writing task in Study 1a and physical posture in Study 1b.

4.3.1 Study 1a

4.3.1.1 Method

Stimuli. One young Caucasian female professional agreed to assist in this project. As Figure 17 Panel A displays, she was wearing a work uniform in a flower shop and told to look away toward the direction of a customer as she greeted the customers on a daily basis. When her photos were taken, she was instructed to display a small smile, and then a big smile. Previous literature determined that, at a facial muscular level, smile intensity is indicated by the amplitude of the zygomatic major movement (lip corner puller: the muscle group that pulls up the lips) (Ekman 1993). Consistently, smiles in the two selected photos vary on the level of zygomaticus major muscle movement, producing more or less intense smiles. To control for other appearance cues that may potentially influence perceivers' judgments, they did not differ in factors such as head orientation (Farroni, Menon, and Johnson 2006), brow position (Sekunova and Barton 2008), and gaze direction (Adams and Kleck 2003).

Power. I adapted the method from Galinsky et al. (2003) to manipulate power with an episodic recall task. To activate state of high power, participants were told to "recall a particular

service encounter in which you had power over a service provider. By power, we mean a service encounter in which you controlled the ability of a service provider or providers to get something you wanted, or were in a position to evaluate those service providers. Please describe this service encounter in which you had power—what type of service encounter it was, what happened, how you felt, etc." To manipulate state of low power, participants were assigned to "recall a particular incident in which a service provider had power over you. By power, we mean a situation in which the service provider had control over your ability to get something you wanted, or was in a position to influence you. Please describe this service encounter in which you did not have power—what type of service encounter that was, what happened, how you felt, etc."

Procedure. One hundred and twenty-two undergraduate students (45.9% female; 18-42 years of age, M_{age}= 21.5, SD= 3.29) from a southeast large public university participated in the study in exchange for course credits. Participants were randomly assigned to one of four conditions in a 2 (smile intensity: small versus big) x 2 (power: powerful versus powerless) between-subjects design. After they imagined themselves being a customer in a flower store and were exposed to a photo of an employee, participants responded to a questionnaire that examines their first impressions of the employee solely based on the photo. Attitude toward the service provider was adapted from (Labroo and Ramanathan 2007), consisting of 3 items (unfavorable/favorable, bad/good, dislike/like) on a 7-point bipolar scale. Cronbach's alpha for this scale was .95. Adapted from Hennig-Thurau, Groth, Paul, and Gremler (2006), customer behavioral intention was measured on a 7-point Likert scale (1=strongly disagree, 7=strongly agree) and the three items involved likelihood to choose the service provider, saying positive things about the service providers, and recommending the service provider to others. Cronbach's alpha for this scale was .94. After the main survey, I used a four-item scale to confirm the manipulation of power ("I think I have a great deal of power", "I can get others to do what I want", "I can get people to listen to what I say", and "If I want to, I get to make the

decisions"; α = .85; 1=strongly disagree, 7=strongly agree; Anderson and Galinsky 2006). At the end, participants responded to a question of a manipulation check of smile strength (1= displays no smile, 7= displays a maximal smile; Barger and Grandey 2006) and reported demographic information.

4.3.1.2 Results

Manipulation Checks. Results showed that smile intensity manipulation was successful. The rating of smile intensity was significantly higher when the expresser displayed big rather than small smiles (M_{small}= 4.75, M_{big}= 5.70, F (1, 120) = 16.43, p< .001). I also confirmed the success of power manipulation such that participants primed with high power reported higher level of power than those primed with low power ($M_{powerless}$= 4.59, $M_{powerful}$= 5.05, F (1, 120) = 5.47, p = .02).

Attitude toward the Service Provider. A 2 (smile intensity) X 2 (power) ANOVA on attitude toward the service provider revealed a significant interaction effect (F(1, 118) = 16.36, p< .001). As Figure 18 illustrates, among high-power participants, smile intensity did not impact attitude toward the service provider (M_{small}= 5.38, M_{big}= 5.06; *p.n.s.*). Among low-power participants, ratings in attitude toward the service provider were higher in the big smile condition than in the small smile condition (M_{small}= 4.46, M_{big}= 6.09, F (1, 118) = 22.58, p< .001).

Customer Behavioral Intention. Similarly, I conducted a 2 (smile intensity) X 2 (power) ANOVA on customer behavioral intention. A significant interaction effect was found (F (1, 118) = 10.67, p = .001). In the high-power condition, smile intensity did not differ in customer behavior (M_{small}= 5.04, M_{big}= 4.67; *p. n.s.*). In the low-power condition, participants rated customer

behavioral intention higher as smile intensity increased (M_{small}= 4.17, M_{big}= 5.43, F (1, 118) = 12.57, p< .001).

4.3.1.3 Discussion

In Study 1a, I find initial support for H1a that, high-power hurts the effect of smile intensity such that I revealed no effect of smile intensity on customer attitude and behavior among high-power individuals. In contrast, low-power individuals reacted more favorably to big smiles rather than small smiles. Study 1b attempts to replicate the findings with a new set of smile stimuli and power manipulation.

4.3.2 Study 1b

4.3.2.1 Method

Stimuli. Compared with natural photos, morphing techniques can measure facial muscle configurations and manipulate the target's smile intensity more accurately. To prepare for another set of stimuli, a middle-aged male Caucasian volunteered to have his photos taken by the researcher. The model was told to look directly at the camera, posing a neutral expression, and later a big smile. A neutral expression was coded as 0 intense, while a big smile was considered to be 100% intense. Once the 0 and 100% intensity had been determined, the Morph Age Pro software was applied to providing us with intermediate levels of smile intensity. Based on the software instruction and expert suggestions, I carefully outlined the hairline, the neck, the eyebrows, the pupil, the nose, the mouth and the collar to start the morphing. By choosing the corresponding slider position and saving each still image, 0, 20%, 40%, 60%, 80% and 100% morphed photos were created. Smiles of 40% (small smile) and 100% (big smile) intensity were selected as the stimuli in Study 1b. Blurry teeth were cleaned using layers in Photoshop. Aligning with a positive smile is an upward twist of

the lips (Barger and Grandey 2006); the set of two photos varied on the level of zygomaticus major muscle movement (lip corner puller), but did not differ in head orientation, and gaze direction. Furthermore, a graphic designer helped design a fictitious but professional-looking advertisement of legal services. Photos of one middle-aged Caucasian male with two levels of smile intensity were inserted in the advertisement positing a local attorney (shown in Figure 19).

Power. Priming power with physical posture has emphasized expansiveness and openness (Carney et al. 2010). I chose photos of nonverbal poses developed by Carney et al. (2010), put them in the format of 2-min video-taped slides, and asked participants to follow the two poses and hold it as the video plays. High-power poses included leaning backward with arms behind their head and leaning forward against a desk, whereas low-power poses involved slouching with fingers interlaced behind their neck, and with arms crossed. In order to reduce the environmental factor, each participant was assigned to a laptop in a separate room. Time of viewing the video was recorded and question of following the video was checked, to ensure that the participants actually followed the instruction. Twenty-mine participants who failed to watch the video or perform power posing were eliminated from the final analyses.

Procedure. One hundred and eight undergraduate students (50.9% female; 18-33 years of age, M_{age}= 22.1, *SD*= 2.79) from a southeast large public university were recruited for participating in the study. The study has a 2 (smile intensity: small versus big) x 2 (power: powerful versus powerless) between-subjects design. Participants were first asked to pose following the 2-min video, and then to evaluate the attorney featured in the advertisement. Attitude toward the service provider was measured by three items (unfavorable/favorable, bad/good, dislike/like; α = .95; Labroo and Ramanathan 2007). Attitude toward the ad was assessed using the same three items (unfavorable/favorable, bad/good, dislike/like; α = .94; Labroo and Ramanathan 2007). As a

manipulation check of power, participants reported how powerful they felt. Additionally, they answered the question of smile strength manipulation (1= displays no smile, 7= displays a maximal smile; Barger and Grandey 2006) and provided us with demographic information.

4.3.2.2 Results

Manipulation Checks. As expected, a 2 (smile intensity) X 2 (power) ANOVA on smile intensity manipulation showed only a significant main effect of smile intensity. Perceived smile intensity was rated significantly higher in the big smile condition rather than in the small smile condition (M_{small}= 4.07, M_{big}= 5.71, F (1, 104) = 37.88, p< .001). I ran another ANOVA on manipulation check of power, showing that participants with high-power poses felt more powerful than participants with low-power poses ($M_{powerless}$= 3.13, $M_{powerful}$= 4.47, F (1, 104) = 43.07, p< .001). Neither the effect of smile intensity nor the interaction effect was significant (p*'s*> .10).

Attitude toward the Service Provider. A 2 (smile intensity) X 2 (power) ANOVA model was performed on attitude toward the service provider, and results demonstrated a significant interaction effect (F (1, 104) = 5.53, p = .02). Described by Figure 18, for participants following high-power postures, smile intensity did not influence attitude toward the service provider (M_{small}= 3.86, M_{big}= 3.56; *p.n.s.*). For participants holding low-power poses, attitude toward the service provider was rated higher when smile intensity increased (M_{small}= 3.23, M_{big}= 4.09, F (1, 104) = 5.62, p= .02).

Attitude toward the Ad. I ran the same 2 (smile intensity) X 2 (power) ANOVA on attitude toward the ad and found a significant interaction effect (F (1, 104) = 7.06, p< .01). Among high-power posers, there was no effect of smile intensity on attitude toward the ad (M_{small}= 3.60, M_{big}= 3.28; *p.n.s.*). Among low-power posers, ratings on attitude toward the ad were significantly greater

in the big smile condition rather than in the small smile condition (M_{small}= 2.99, M_{big}= 4.11, F (1, 104) = 7.94, p< .01).

4.3.2.3 Discussion

Studies 1a and 1b consistently provide support for how the smiling effect is moderated by power on consumer behavior. Empowering customers with power seems to decrease the effect of service with an intense smile. Study 2 is intended to introduce a moderator, salience of ulterior motive, in the model to reverse the interactive effect of smile intensity and power. H1a and H1b are to be tested simultaneously in the following study. Furthermore, to enhance the external validity, I recruited a non-student sample from a large crowdfunding source online.

4.4 Study 2: Smile Intensity, Power, and Ulterior Motive

In a service encounter, consumers may be suspicious or accessible to salesperson's ulterior motive (Campbell and Kirmani 2000; Kirmani and Zhu 2007). In Study 1 findings showed that when customers are unaware of employees' ulterior motive, those primed with high-power status failed to judge the targets based on their emotional displays mainly because power reduces focus on others and perspectives on others (Galinsky et al. 2006). However, I propose that powerful individuals may become motivated to take perspective of others, for example, when ulterior motive is made salient to them.

4.4.1 Method

Stimuli. Using the same morphing method as in Study 1b, I generated a new set of photos wearing big and small smiles of a different young Caucasian male (see Figure 17 Panel B). To minimize possible confounding deriving from the advertising context, I presented only photos of the model in the main survey.

Power. To manipulate power, I assigned participants to either a high-power or low-power role. According to the literature (Rucker and Galinksy 2009; Dubois et al. 2010), participants imagined themselves being a manager or a subordinate. In the high-power role-playing, participants read:

"Please imagine that you just got promoted and are assigned as a manager in a new place. You are in charge of directing your subordinates in creating different products and managing work teams. As a manager, you have complete control over the instructions you give to your workers. You decide to rent a house close to the company so that you can assign work to your subordinates immediately."

In the low-power role-playing, they were told:

"Please imagine that you just got a job and are assigned as a subordinate in a new place. You are responsible for carrying out the orders of the manager in creating different products. As an employee, you must follow the instructions of the manager. You decide to rent a house close to the company so that you can follow your manager's work assignment immediately."

Salience of Ulterior Motive. Accessibility of ulterior motive can be manipulated in the experiments. Adapted from the literature (Campbell and Kirmani 2000), brief information was given that the featured realtor shows the participants the apartments that are available (low salience

of ulterior motive) or the realtor shows them the apartments so he can get a good compensation (high salience of ulterior motive).

Procedure. I recruited one hundred and sixty-seven individuals (52.7% female; 18-76 years of age, *Mage*= 34.4, *SD*= 12.28) from Amazon's Mechanical Turk to take part in the study, with each paid 50 cents. The study is a 2 (smile intensity: small versus big) X 2 (power: powerful versus powerless) X 2 (salience of ulterior motive: low versus high) between-subjects design. Participants were assigned to a high-power or low-power role, told that a realtor helps them to rent an apartment with low or high ulterior motive, and exposed to the photo of the realtor featuring one of the two smile levels. In the main questionnaire, participants responded to the scale of attitude toward the service provider (unfavorable/favorable, bad/good, dislike/like; α = .94; Labroo and Ramanathan 2007). Also they reported the measurements of customer behavioral intention (likelihood to choose the realtor, to say positive things about the realtor, and interest in renting the apartment recommended by the realtor; α = .86; Hennig-Thurau et al. 2006) on a 7-point Likert scale (1=strongly disagree, 7=strongly agree). Next, I used single-item scales to confirm the manipulation of power (Rucker et al. 2011) as well as the manipulation of smile strength (Barger and Grandey 2006). To check the manipulation of salience of ulterior motive, I asked the participants to report if they think the employee appears to have strong intention to persuade, manipulate, and influence consumers (α = .72; Campell 1995). At the end, demographic information was collected.

4.4.2 Results

Manipulation Checks. I ran 2 (smile intensity) X 2 (power) X 2 (salience of ulterior motive) ANOVA model on perceived smile intensity manipulation and revealed only a main effect of smile intensity (F (1, 159) = 51.26, p< .001). Participants rated perception of smile intensity significantly

higher in the big smile condition compared with the small smile condition (M_{small}= 4.89, M_{big}= 6.21). None of other main effects or interaction effects were significant (*p's*> .10). The same ANOVA was conducted on manipulation check of power, depicting that participants playing a high-power role felt more powerful than participants playing a low-power role ($M_{powerless}$= 4.00, $M_{powerful}$= 5.75, F (1, 159) = 65.35, p< .001). All other effects were not significant (p's> .10). Results of ANOVA on manipulation check of salience of ulterior motive showed that participants informed with high salience of ulterior motive believed that the employee is more persuasive than participants informed with low salience of ulterior motive ($M_{lowsalience}$= 3.75, $M_{highsalience}$= 4.45, F (1, 159) = 15.57, p< .001).

Attitude toward the Service Provider. In the main analyses, I conducted a 2 (smile intensity) X 2 (power) X 2 (salience of ulterior motive) ANOVA on attitude toward the service provider. As Figure 20 illustrates, the three-way interaction between smile, power, and ulterior motive was significant (F (1, 159) = 7.82, p< .01). I decomposed the interaction by performing contrast analyses. In the low salience condition, there was a significant interaction of smile intensity and power on attitude (F (1, 159) = 4.02, p< .05). Specifically, for participants with high-power roles, smile intensity did not affect attitude toward the service provider (M_{small}= 4.62, M_{big}= 4.55; *p.n.s.*). For participants with low-power roles, attitude toward the service provider was rated higher as smile intensity increased (M_{small}= 4.31, M_{big}= 5.22, F (1, 159) = 6.21, p= .01). Similarly, in the high salience condition, a significant interaction of smile intensity of power was found (F (1, 159) = 4.93, p = .03). Among participants playing high-power roles, a big smile compared with a small smile boosts ratings on attitude toward the service provider (M_{small}= 3.74, M_{big}= 4.67, F (1, 159) = 3.81, p= .05). However, among participants playing low-power roles, smile intensity did not influence attitude toward the service provider (M_{small}= 4.21, M_{big}= 4.14; *p.n.s.*).

Customer Behavioral Intention. A 2 (smile intensity) X 2 (power) X 2 (salience of ulterior motive) ANOVA on customer behavioral intention showed a significant three-way interaction (F (1, 159) = 12.81, p< .001; also see Figure 20). Planned contrasts revealed that, when salience of ulterior motive is low, the interaction between smile intensity and power on behavioral intention was significant (F (1, 159) = 5.66, p = .02). Specifically, for participants assigned to a high-power role, smile intensity did not differ in consumer behavior (M_{small}= 4.77, M_{big}= 4.50; *p.n.s.*). For participants assigned to a low-power role, behavioral intention was rated higher as smile intensity increased (M_{small}= 4.48, M_{big}= 5.24, F (1, 159) = 5.58, p= .02). When salience of ulterior motive was high, there was found a significant interaction between smile intensity and power (F (1, 159) = 7.17, p< .01). For participants playing high-power roles, a big smile rather than a small smile increased ratings on behavioral intention (M_{small}= 3.39, M_{big}= 4.60, F (1, 159) = 14.45, p< .001). On the contrary, for participants playing low-power roles, there was no effect of smile intensity on behavioral intention (M_{small}= 4.21, M_{big}= 4.22; *p.n.s.*).

4.4.3 Discussion

Study 2 provides additional evidence for both H1a and H1b, showing that smile intensity interacts with customer power and employee's ulterior motive to impact customer attitude and behavior. Consistent with the hypotheses proposed, when customers are not aware of employees' ulterior motive, empowering the customer leads to failure of reacting to intensified smiles. Only when customers are accessible to ulterior motive, does the customer primed with high power respond more favorably to a more intense smile compared with a less intense smile. As a further investigation, the next study attempts to examine the posited mechanisms of the interaction effect.

4.5 Study 3: Warmth and Competence Perceptions as the Underlying Mechanisms

The purpose of Study 3 is twofold. I am to establish the robustness of findings in Study 2 with new stimuli of a different gender and explore the underlying processes driving the effects of smile intensity, power, and salience of ulterior motive. Specifically, study 3 is designed to test H2 that the impact of smile intensity, power, and ulterior motive is driven by inferred warmth and competence perceptions.

4.5.1 Method

Stimuli. I created a new set of photos depositing two smile levels of a middle-aged Caucasian female, applying the same morphing technique as in Studies 1b and 2. As in Study 2, I presented photos of the model who was assigned as a wine shop employee (see Figure 17 Panel C).

Power. Based on Galinsky et al. (2003), I manipulated power through episodic recall as in study 1a. To prime participants with high-power or low-power status, the writing task is to either recall an experience in which they had power over someone or an incident in which someone had power over them.

Salience of Ulterior Motive. Adapted from Campbell and Kirmani (2000), information was accompanied with featured photos that the wine shop employee greeted you and reminded you of the wine on sale (low salience of ulterior motive) or the wine shop employee approached you and tried to sell you the wine on sale because her bonus depended on it (high salience of ulterior motive).

Procedure. I recruited one hundred and sixty-two undergraduate students (49.1% female; 18-57 years of age, M_{age}= 22.1, *SD*= 5.15). The study has a 2 (smile intensity) X 2 (power) X 2 (salience of ulterior motive) between-subjects design. Participants were asked to write an

experience that activates state of high-power or low-power, read a scenario in which they plan to buy a bottle of wine from a wine shop employee who has low or high ulterior motive, view a photo of the employee displaying a small smile or a big smile, and answer a series of questions. The main dependent variable, customer behavioral intention, was measured by three items, likelihood to choose the employee to purchase this wine, to consider using the service provided by the employee, and to purchase the wine from the employee (α = .84; Hennig-Thurau et al. 2006) on a 7-point Likert scale (1=strongly disagree, 7=strongly agree). Then participants rated a set of six key traits, including three items to form an index of warmth (warm, friendly, sincere; α = .88) and the other three items to comprise an index of competence (competent, intelligent, confident; α = .84) (Aaker, Vohs, and Mogilner 2010; Cuddy et al. 2008). Additionally, I used a single-item scale to ask participant how powerful they feel to check the power manipulation (Rucker et al. 2011). The manipulation of smile strength was also assessed by the extent to which the displayer displays a smile (Barger and Grandey 2006). Finally, for a manipulation check of ulterior motive, the questions were framed as the employee's intention to persuade, manipulate, and influence consumers (α = .74; Campell 1995).

4.5.2 Results

Manipulation Checks. A 2 (smile intensity) X 2 (power) X 2 (salience of ulterior motive) ANOVA model was first run on perceived smile intensity manipulation. Only the main effect of smile intensity was significant (F (1, 154) = 88.09, p< .001), such that ratings in perceived smile intensity were significantly higher as smile intensified (M_{small}= 3.87, M_{big}= 5.81). The ANOVA model was also performed on perceived power and showed that participants primed with high power felt significantly more powerful than participants primed with low power ($M_{powerless}$= 3.46, $M_{powerful}$= 4.05, F (1, 154) = 14.59, p< .001). Neither of the other main effects nor the interaction

effect was found significant (*p's*> .10). Another ANOVA was run on the manipulation check of ulterior motive and revealed that the participants accessible to employees' ulterior motive, rather than those not accessible to ulterior motive evaluated the employee as having stronger intent to persuade customers ($M_{low\ salience}$= 2.99, $M_{high\ salience}$= 3.65, F (1, 154) = 11.68, p = .001). Other main effects or interaction effects were not significant (*p's* > .10).

Customer Behavioral Intention. To test the proposed hypotheses, I performed a 2 (smile intensity) X 2 (power) X 2 (salience of ulterior motive) ANOVA on customer behavioral intention and a significant three-way interaction was shown in Figure 21 (F (1, 154) = 11.13, p< .001). According to planned contrasts analyses, when employees' ulterior motive is not salient to the customers, smile intensity interacts with power to influence behavioral intention (F (1, 154) = 5.32, p = .02). To be specific, smile intensity did not have an effect on behavioral intention among high-power individuals *(*M_{small}= 5.14, M_{big}= 4.88; *p.n.s.*). Smile intensity had a significant positive effect on behavioral intention among low-power individuals (M_{small}= 4.18, M_{big}= 5.22, F (1, 154) = 7.26, p< .01). On the other hand, when ulterior motive is salient, the interactive effect of smile intensity and power on behavioral intention was also significant (F (1, 154) = 5.81, p = .02). For high-power individuals, increasing smile intensity leads to higher ratings on behavioral intention (M_{small}= 3.45, M_{big}= 4.51, F (1, 154) = 6.65, p= .01). For low-power participants, the effect of smile intensity on behavioral intention did not differ (M_{small}= 4.18, M_{big}= 3.84; *p.n.s.*).

Tests of Underlying Processes. To test the mechanisms, I followed Preacher and Hayes's (2008) bootstrapping procedures (see Figure 22). Step 1, the IV (smile intensity), the moderators (power and salience of ulterior motive), and the interaction terms on DV (behavioral intention) were regressed in the model. Replicating findings of the Study 2, the three-way interaction between smile, power, and ulterior motive on behavioral intent was found (b = 2.71, t= 3.34, p= .001). Step 2, the

IV, the moderators, and the interactions were regressed on the mediators (warmth and competence perceptions). Results showed that smile intensity interacts with power and ulterior motive on both warmth (b= 1.93, t= 2.44, p= .02) and competence (b= 1.76, t= 2.18, p= .03). In turn, warmth (b= .34, t= 2.89, p< .01) and competence (b= .24, t = 2.07, p = .04) respectively increase behavioral intention. Step 3, perceptions of warmth and competence were added to the final regression in which the IV, the moderators, the interactions, and the mediators were regressed on the DV. The interactive effect of smile, power, and ulterior motive on behavioral intent was then reduced (b= 1.63, t= 2.33, p = .02). Furthermore, significant indirect effects through warmth (indirect effect= .66; 95% confidence interval: .150, 1.604) and competence perceptions (indirect effect= .42; 95% confidence interval: .042, 1.144) were found. Taken together, H2 was supported such that perceptions of warmth and competence mediated the effect of smile intensity on behavioral intention, moderated by power and salience of ulterior motive.

To further explore the underlying processes, I ran two separate duel mediation models, comparing the low salience of ulterior motive and high salience of ulterior motive conditions. When ulterior motive is not salient to customers, the model contains smile intensity as IV, power as moderator, the interaction, warmth and competence as mediators, and behavioral intent as DV. Regression models demonstrated that: (1) smile intensity interacts with power to negatively impact on behavior intent (b= -1.17, t= -2.09, p= .04); (2) the interactive effect of smile and power had a significant negative effect on perception of warmth (b= -1.34, t = -2.63, p= .01), and warmth had a significant positive effect on behavioral intent (b= .45, t = 2.73, p< .01); (3) there was found no effect of smile and power on perception of competence (b= -.57, t = -1.03, *p.n.s.*); and (4) when warmth and competence were added to the full model, the effect of smile and power on behavior was reduced to non-significance (b= -.48, t = -.95, *p.n.s.*). Thus, the indirect effect of smile and power on behavioral intent, as mediated by perception of warmth, was significant (indirect effect= -

.61; 95% confidence interval: -1.341, -.170). These findings, as I anticipated, are consistent with an inference of full mediation through warmth.

Similarly, when ulterior motive is salient to customers, the model includes the IV, the moderator, the interaction, the mediators and the DV. Findings showed that: (1) the effect of smile intensity and power positively affected behavioral intent (b= 1.20, t= 2.07, p= .04); (2) smile interacted with power to have a positive effect on perception of competence (b= 1.14, t= 2.07, p= .04), and in turn competence had a significant positive effect on behavioral intent (b= .42, t= 2.39, p= .02); (3) the effect of smile and power did not influence perception of warmth (b= .43, t= .76, *p.n.s.*); and (4) as warmth and competence were added to the model, the effect of smile and power on behavior decreased to non-significance (b= .63, t= 1.27, *p.n.s.*). In addition, the indirect effect of smile and power on behavior mediated by competence was significant (indirect effect= .47; 95% confidence interval: .067, 1.101). These results suggest a full mediation through competence.

4.5.3 Discussion

The findings in Study 3 indicate that perceptions of warmth and competence mediate the effect of smile intensity, customer power, and employees' ulterior motive. To be specific, when employees' ulterior motive is not salient to customers, the powerless rather than the powerful customers make inferences about the extent to which the employee is perceived as more warm and friendly as smile intensity increases, which results in more positive behavioral intention. In contrast, when ulterior motive is made salient, the powerful compared with the powerless customers infer that a displayer with an intensified smile is judged as more competent, leading to more favorable behavioral intent.

4.6 General Discussion

The current research was motivated by the observation that marketers use positive facial displays as a persuasion tool to engage customers, in which both marketers and consumers act on the belief that big smiles lead to more favorable customer ratings. Through three experiments, I have studied moderators that may affect the smiling effect and yielded a set of interesting findings: a brief exposure to positive facial expressions in a image is sufficient to form a favorable first impression of the displayer; a well-intended strong smile may not be effective among high-power customers; but when the employees' ulterior motive is made salient to the powerful customers, they suddenly become susceptible to intensified smiles. As employees' ulterior motive is turned off, low-power compared to high-power individuals perceive a displayer wearing an intensified smile as warmer but not as more competent. As the ulterior motive is on, for high-power rather than low-power individuals, the target displaying a big instead of a small smile is perceived as more competent but not as warmer. Hence, I confirm the cognitive inferences about warmth and competence as the main drivers.

These findings make several theoretical contributions. I contribute to an under-researched area of "positive psychology" by examining the impact of smiles embedded in still images on onlookers' responses. This expands the current research on facial emotional expressions in still image from valence contrast (positive, neutral, versus negative) to a fine-grained differentiation with the positive realm. Beyond valence, I differentiate the intensity of smiles in well-controlled experiments. This study resonates with the emotional contagion process that is established in social psychology literature (Hatfield, Cacioppo, and Rapson 1992, 1994) and attracts attention in consumer research (Small and Verochi 2009). The line of research focuses on how facial expression of emotion may elicit vicarious emotions in perceivers. Upon exposure to others' smiles, people may mimic the positive expressions and synchronize internally via physiological links (Hennig-

Thurau et al. 2006). The stronger the smile, the more likely it is to evoke similar feelings in perceivers (Barger and Grandey 2006). Aligning with these affective mechanisms, these findings suggest that the impact of big (versus small) smiles on customer behavior is driven by perceivers' cognitive inferences.

More importantly, this research highlights the moderating effect of customer power and employees' ulterior motive on customer attitude and behavior. This study also provides insightful, and perhaps reliable, information for the literature on consumer power. Power has been receiving attention in how it affects mental construal (Magee and Smith 2013), creativity (Galinsky et al. 2008), action orientation (Galinksy et al. 2003), consumer spending (Rucker et al. 2011) and consumer switching behavior (Jiang et al. 2014) in both psychology and consumer literature. Consistently in the manipulation of power induced by episodic recall (Studies 1a and 3), physical posture (Study 1b), and mental hierarchical roles (Study 2), I have found that empowering individuals leads to differential effects of smiles on customer behavior. In light of these findings, warmth judgment is associated with low-power customers, whereas competence judgment tends to be inferred by high-power customers. The results indicate a new path in the power literature and draw connections between power and social judgments, and especially note that priming people with low power would lead to their seeking for warmth and social relations but priming people with high power would result in searching for competence. The latter finding only holds when high-power individuals are motivated to take perspectives of others, as normally power reduces perspective taking (Galinsky et al. 2006).

As noted, I brought salience of ulterior motive that caused the powerful individuals to shift their attention from the self to others. This contributes to the persuasion literature, nearly all of which discovered only negative or mixed impact of persuasive intent (Campbell and Kirmani 2000;

Kirmani and Zhu 2007) except one paper on flattery (Chan and Sengupta 2010). Prior research shows that, in the service scenario, customers generate suspicion of salesperson's ulterior motive using knowledge of persuasion tactics, which leads to lower customer evaluations (e.g., Main, Dahl, and Darke 2007). The present study suggests that as ulterior motive is made accessible to high-power customers, they are more likely to pay attention to perceptual cues and react favorably to strong smiles. A noteworthy point is that in order to make persuasion tools work for high-power individuals, they may be informed of persuasion intent by salespeople.

These findings are important for practitioners. Smiling is easily perceptible and influential. If effectively manipulated, it can favorably impact customers' judgment of the displayers' perceptions. Such persuasion tactics can be used by practitioners (e.g., an attorney, realtor, or grocery store employee) who often benefit directly from strong positive displays. Unlike changing the dispositional physical features of a face, the manipulation of facial affective display can be readily adjustable based on situational requirements, and can further expand its marketability. By understanding the factors that moderate and mediate the impact of facial affective displays, marketers can tailor their big smiles based on other marketing tools such as empowering customers and enhancing accessibility of ulterior motive. The effect of service with a big smile may be undermined in the situation where customers are primed with power. However, if high-power customers are made salient to ulterior motive of the smiling employee, they start to take perspective of the perceptual cues and appreciate the employee's effort behind the big smile.

CHAPTER FIVE: CONCLUSION

5.1 Summary of Findings

This dissertation, in three essays, focuses on important facial cues such as facial structure and facial expressions, and conducts this line of research at both an individual-level and a group-level of perceptions. Each essay respectively proposes the effect of facial cues on consumers' perception, attitude, and behavior, as well as donors' prosocial behaviors.

Essay 1 examines how facial resemblance affects consumers' product purchase behavior. In a series of three experiments, results demonstrate that increased facial resemblance among group members leads to greater purchase likelihood only for the consumers with high-level construals. These empirical findings are robust across different operationalizations on construal levels (chronic self-measured versus manipulated versus desirability/feasibility product-featured), contexts (fundraising event for art education versus shopping for furniture), and sample characteristics (student sample versus non-student sample from crowdsourcing). Essay 2 studies, in the domain of prosocial behavior, and proposes the differential effects of group entitativity among multiple victims on donation types. I find that increased group entitativity among victims enhances donors' likelihood to contribute time but, conversely, reduces donors' likelihood to contribute money. Such differential effects of group entitativity on donating time or money are driven by donors' own psychological well-beings associated with time or money. Essay 3 investigates the effect of smile intensity on customer behavior, depending on customer power and employees' ulterior motive. Results show that empowering customers may discount the effect of intensified smiles, especially when employees' ulterior motive is not accessible to customers. Only when ulterior motive is made salient to customers, do high-power holders respond more favorably as smile increases. Warmth and

competence inferences are discovered to mediate the effects of smile, power, and ulterior motive on customer behavior.

5.2 Theoretical Contributions

The current dissertation attempts to bring separate streams of research together and contributes to the literature in different domains. Essay 1 marries facial research and construal level theory by introducing and studying the effect of group formation on the mental processing with the participants (thus informants) exposed to a group of faces. The effect of grouping stimuli together induced by perceivers' construal level is incorporated to understand how perceivers make face-based inferences about group traits. Consumers with high-level versus low-level construals are more inclined to view the stimuli as one and to group them in the same category (e.g., Schwarz and Bless 1992, 2007). That being said, perceptual groupness, or entitativity, can only be mentally processed among individuals with high-level construals. Therefore, I provide new insights into the role of construal level theory in face-based group perception.

This proposal also connects facial cues with prosocial behavior. In Essay 2, group entitativity is primed using both conceptual and perceptual manipulations. Adding to the emerging literature of group entitativity in donation behavior and consumer research (Mishra 2009; Mishra, Mishra, and Nayakankuppam 2006; Smith, Faro, and Burson 2013), Essay 2 proposes differential effects of entitativity based on two types of donation. Drawing on different dimensions of time and money, donors' own psychological welfare is differently associated with donation of time versus money. Donation of time triggers emotional well-being whereas cognitive well-being is activated by donation of money. What adds to the literature is that group entitativity is found to be positively associated with time and emotion in general. However, entitativity is suggested to hurt money investment and cognitive processing.

In this dissertation, I add to the literature on positive expressions, power, and persuasion by exploring how smile intensity interacts with power and ulterior motive. Extending from prior literature on facial expressions that limits in studying valence contrast, Essay 3 adopts a fine-grained differentiation manipulation within the positive displays. It notes the impact of smile intensity on customer behavior moderated by customer power and employees' ulterior motive. Depending on salience of ulterior motive, intensified smiles have a positive effect on behavior for low-power or high-power individuals. This effect, by and large, contributes to the realm of social psychology such that face-based perceptual cues bias human cognition and behavior. It also offers fresh insights to the literature on power and persuasion, thus signifying that customer empowerment may not be always beneficial and persuasive motive may not be definitely hurtful.

5.3. Managerial Implications and Future Directions

This research has managerial implications for a wide range of audiences, from individual face-based displays to ubiquitous team promotions displaying multi-face images on traditional and social media. Apart from individual faces, images of teamwork and collaboration widely appear in a variety of industries, including firm advertising, consumer groups, sports teams, political campaigns, and employee teams.

First, this research project identifies facial resemblance among group members as a significant factor enhancing consumers' intent to purchase products or services offered by the group. Marketers can start with adopting face morphology as a theoretically-intriguing but practically-hindered method for improving consumer evaluations and behaviors. In addition to utilizing facial morphology, companies need to pay attention to consumers' construal levels. High construal-levels can be achieved by reframing the advertising message either to emphasize the product's ultimate

benefits or its desirability-related features. Consumers may even change their purchasing determinant factors at different stages of decision-making, perhaps attracted by desirability features at the beginning but focusing on feasibility features toward the ultimate purchase decision. Marketers are supposed to adjust face-based advertisements strategically. In addition, other constructs from the big umbrella of construal level theory may result in similar effects. For example, purchasing a product in the distant future (high-level construal) versus today (low-level construal) may be more likely to make positive face-based inference that leads to better product evaluations.

Second, for non-profit organizations, practitioners have to carefully adopt facial cues or other perceptual cues to adjust group entitativity among a group of victims for encouraging donation of time. In conformity with previous findings, group entitativity can enhance emotional attachment and well-being that lead to donation of time. However, it is noted that increasing group entitativity may boomerang in the context of monetary donation. Beyond using facial cues, companies can use other tactics to enhance or reduce group entitativity in terms of time versus money donation, such as altering verbal contexts and changing stimuli movements.

Third, this research has far-reaching applications for enhancing customers' judgment through another influential facial cue, for example, emotion displays. Consistent with the predictions made, the current study finds perceivers' automatic inclinations to make inferences about dispositions and downstream behaviors solely based upon a single emotional expression. The discoveries are also relevant to consumers, since emotion displays are found to facilitate social relationship, and enhance group cohesiveness (Parr, Preuschoft, and de Waal 2002). The emergence of social media fosters the prominent usage of human faces as a communicative tool and impression management tactic. Facebook, Linkin, Kickstarter, and GoFundMe users start their connections with others from a profile picture, a smiley face, or a group of smiling faces. Consumers may

benefit from this research to use appropriate face-based messages as an effective method to facilitate social connections or develop personal brands.

Lastly, this dissertation goes beyond the traditional focus on the interpersonal judgments of attractiveness or likability, and opens future research avenues for facial cues. For instance, the future-proposed research on facial resemblance can extend group size from dyad to a large number of group members, so that it can explore the effects of group facial resemblance in a more generalized group setting. It would also benefit to learn about the optimal level of facial resemblance, above which consumers may be suspicious about or resistant to the stimuli. Another possible potentiality is to test whether the effects of smile intensity on face-based inferences can be mitigated or magnified by other contextual information about the displayer. Future studies may also examine the influence of intensified expressions of other emotions (e.g., sadness, anger, disgust, etc.) on customer judgment and behavior. I hope this work, which has explored the impact of individually and collectively presented facial cues on consumer behavior, will enable both marketers and consumers to improve their welfare.

APPENDIX A: FIGURES

Facial Resemblance		General Effects: Self-evaluation	General Effects: Evaluation on the target	General Effects: Evaluation on the company/product	Method	Moderator(s)	Mediator(s)
Individual perception	to self	⊕/⊖ 3	⊕ 1, (6), (7)		Original photo [3, 6] Morphology [1, 7]	Type of headline [3] Gender [7]	Attractiveness [1] Motivation [3]
	to familiar others		⊕/⊖ 5, 8, 9	⊕/⊖ 5, 8	Morphology [8, 9] Real Person [5]	Pre-perception [5, 8, 9]	Fluency [8]
	to babyface		⊕/⊖ 2 ⊖ 10	⊕/⊖ 2	Morphology [2, 10]	Context valence [2]	Trustworthiness [2] Competence [10]
Group Perception	among members		⊕ 4, W	⊕ (E1) ⊕/⊖ W	Original photo [4] Morphology [E1, W]	Construal level [E1] Info valence [W]	Group Entitativity [E1] Cooperative Intent [W]

Studies examining effects of employees' positive affective displays on customer responses:

[1] DeBruine 2004
[2] Gorn et al. 2008
[3] Häfner 2004
[4] Hinsz 1989
[5] Lewichi 1985
[6] Moreland and Zajonc 1982
[7] Platek et al. 2003
[8] Tanner and Maeng 2012
[9] Verosky and Todorov 2010
[10] Zebrowitz and Montepare 2005

[E1] Essay 1
[W] Working paper

Notes: a) ns...not significant; ( )...part significant (e.g., subsamples);
b) +/- ...The face of the target resembling the familiar others or increased facial resemblance within group members being perceived more positively/negatively by the perceiver.

FIGURE 1. Summary of Research Findings on Facial Resemblance Effects (Chapter One)

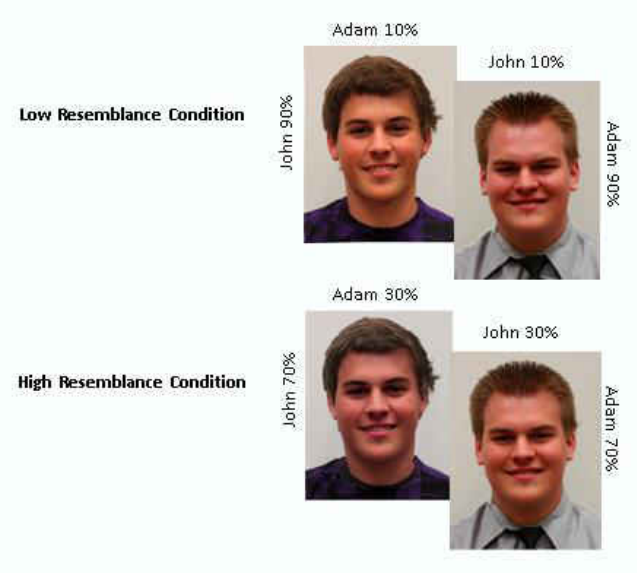


FIGURE 2. Facial Stimuli in Experiment 1 (Chapter Two)

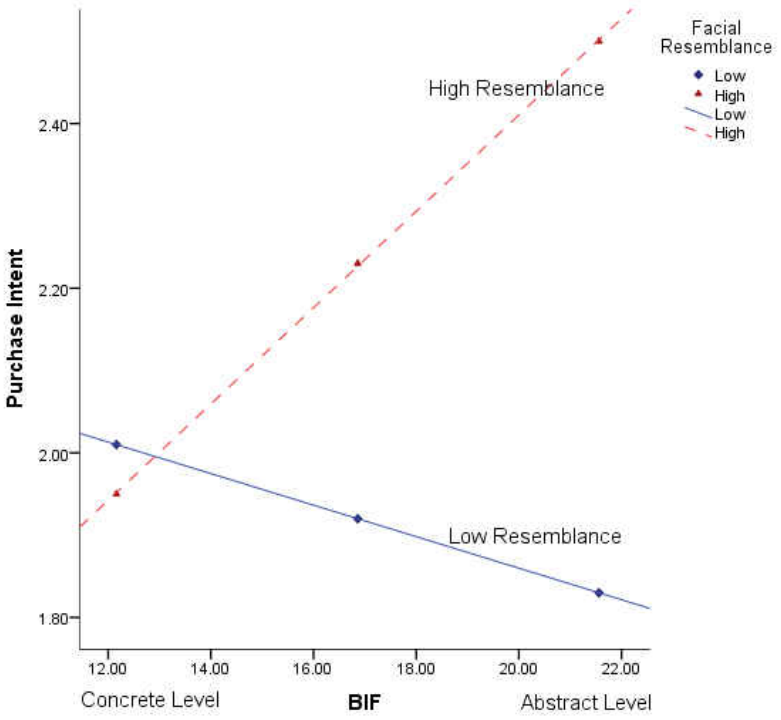
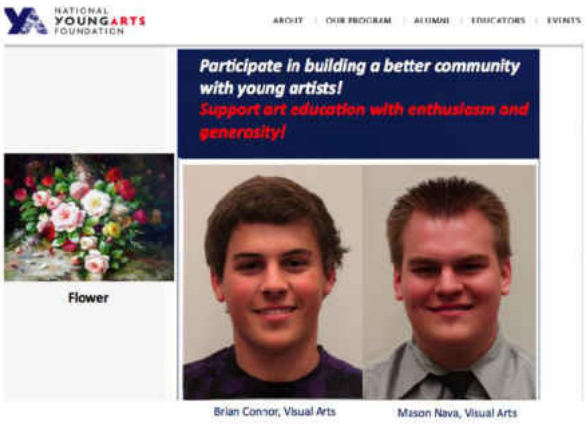
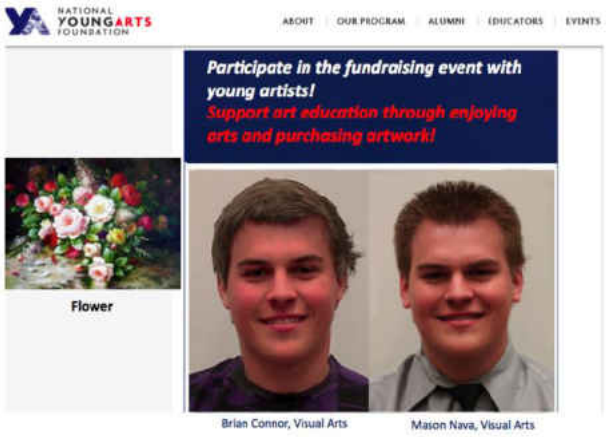


FIGURE 3. Purchase Likelihood as a Function of Facial Resemblance and Construal Level (Experiment 1 of Chapter Two)



Low Resemblance X High Level Construal Condition



High Resemblance X Low-Level Construal Condition

FIGURE 4. Stimuli in Experiment 2 (Chapter Two)

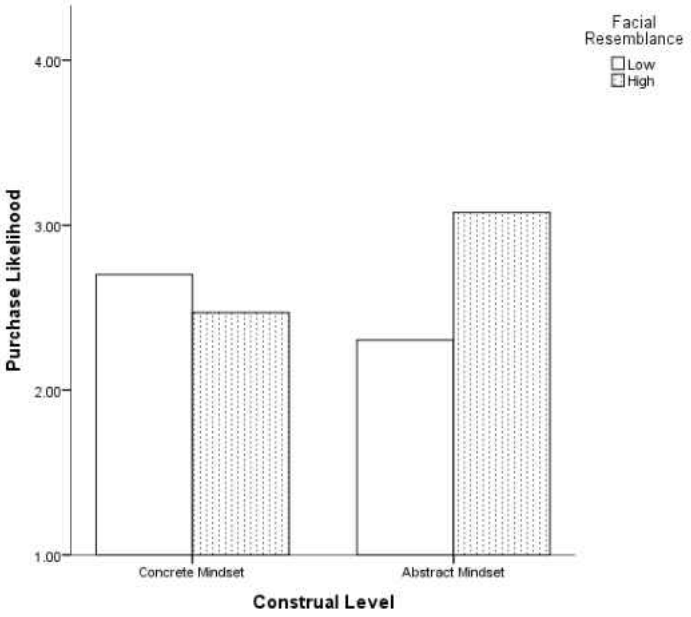


FIGURE 5. Purchase Likelihood as a Function of Facial Resemblance and Construal Level (Experiment 2 of Chapter Two)

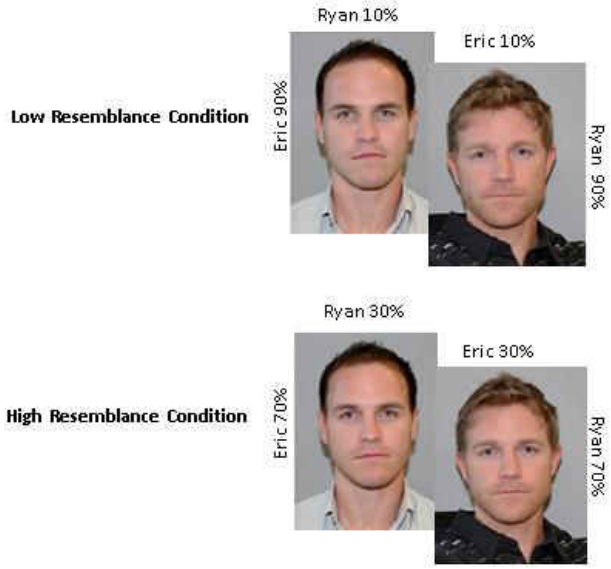


FIGURE 6. Facial Stimuli Used in Experiment 2 (Chapter Two).

Low Resemblance X Low-Level Construal Condition

High Resemblance X High-Level Construal Condition

FIGURE 7. Experimental Stimuli in Experiment 2 (Chapter Two)

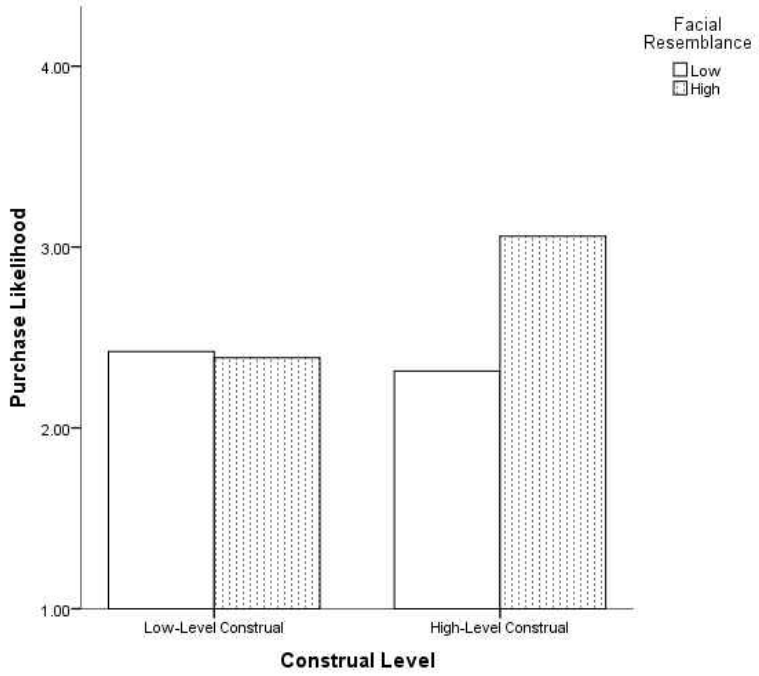
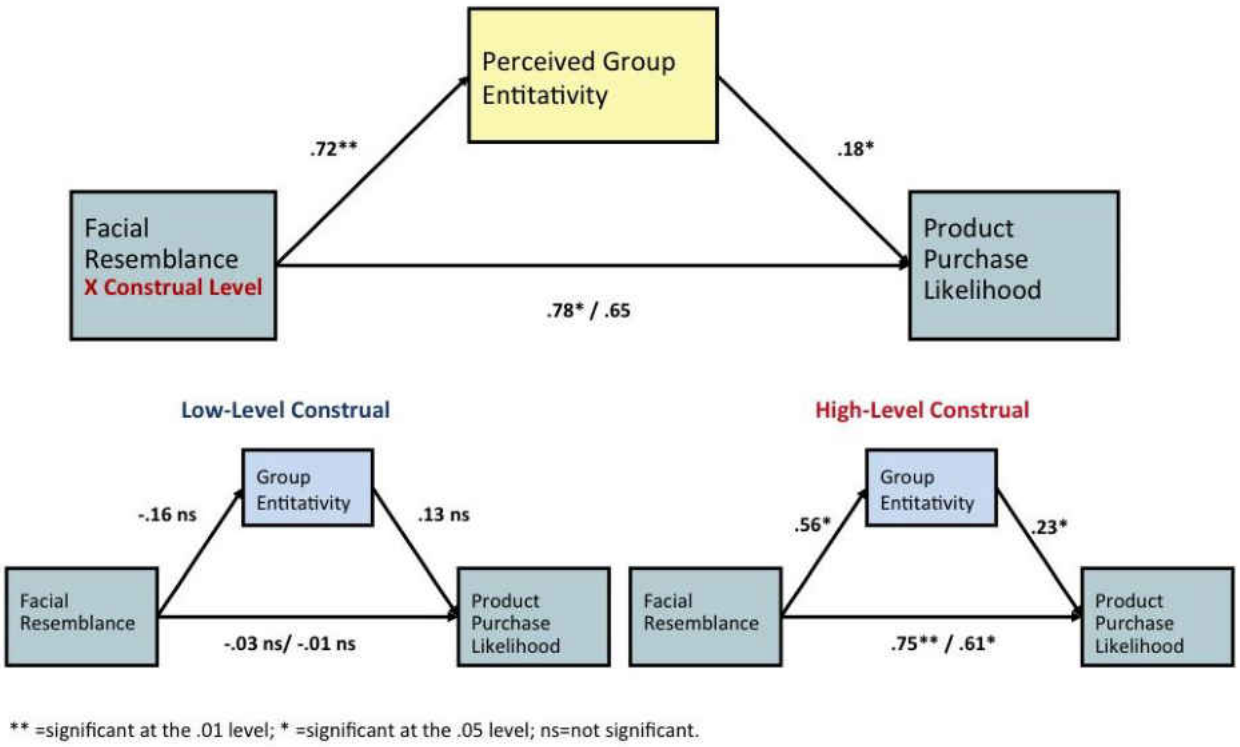


FIGURE 8. Purchase Likelihood as a Function of Facial Resemblance and Construal Level (Experiment 3 of Chapter Two)



Notes: The initial coefficient on c path refers to the total effect between IV and DV in the model. The second coefficient on c path refers to the direct effect when the mediator is added in the model.

FIGURE 9. The Mediating Role of Perceived Group Entitativity (Experiment 3 of Chapter Two)

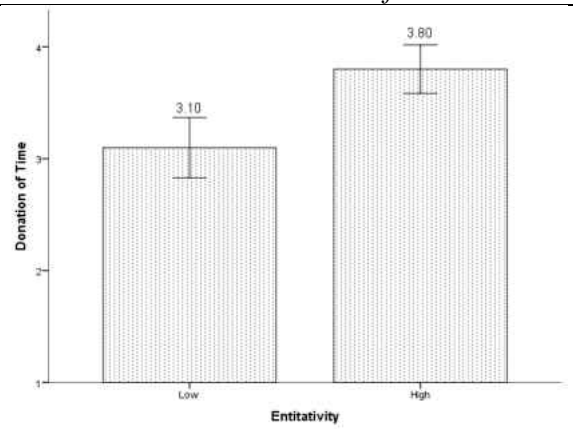
Let's Make a Difference for Children from Ten Different Neighborhoods

(versus One Neighborhood)!

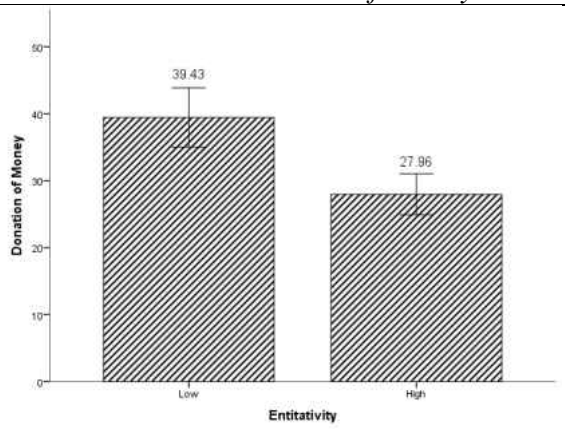
GoFundMe is a popular online fundraising website that is perfect for individuals, groups and organizations. The C.L.C.S.S Group, one of the recent projects, will help by mobilizing the minds of needy children to receive education, in long term also improving their life standard. The goal is to focus on the provision of education to the less fortunate children in the community.

FIGURE 10. Stimuli Used for Study 1 (Chapter Three)

A. Donation of Time



B. Donation of Money

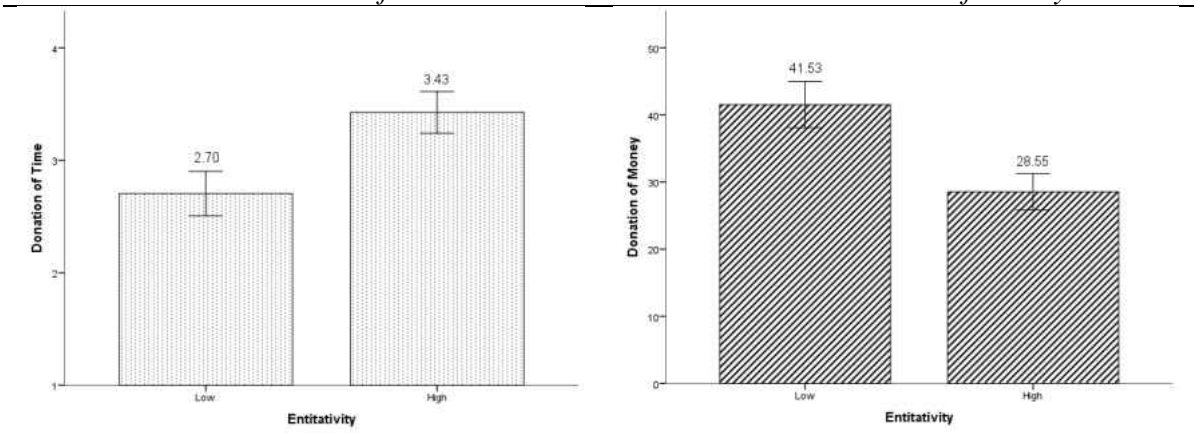


NOTE.—Error bars represent one standard error of the mean.

FIGURE 11. The Effects of Entitativity on Pledged Donations (Study 1 of Chapter Three)

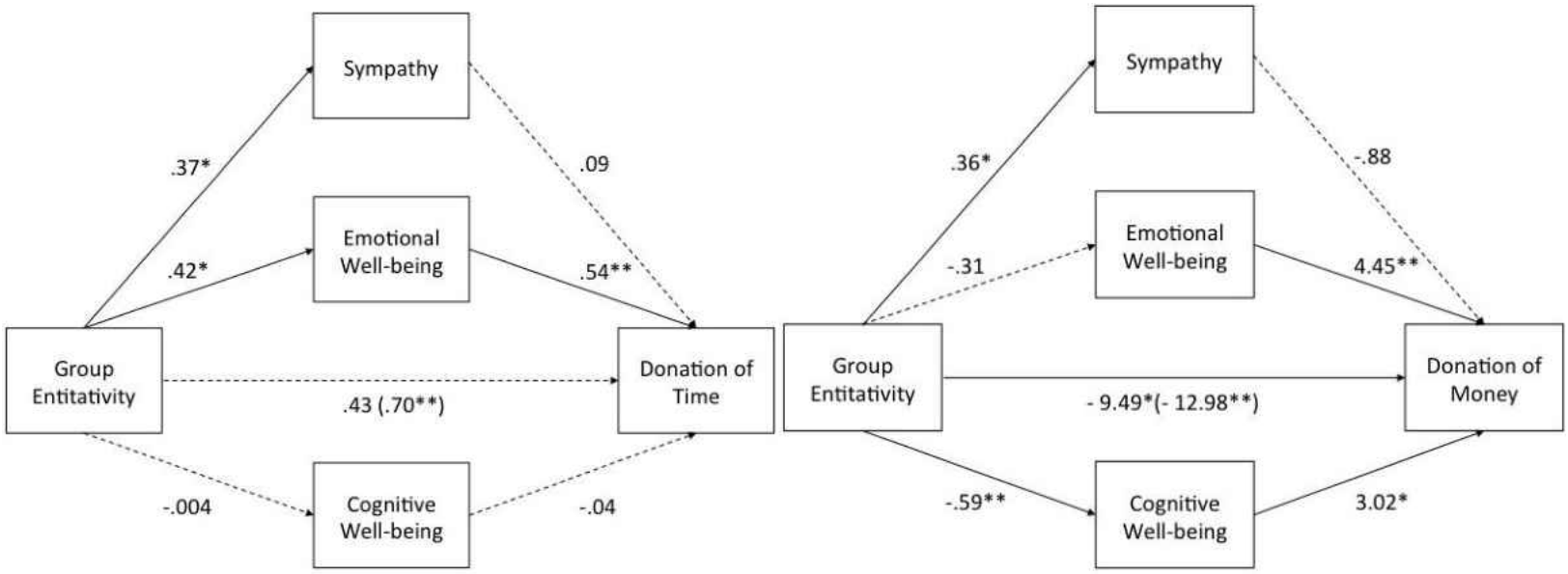
FIGURE 12. Stimuli Generated for Study 2 (Chapter Three)

A. Donation of Time *B. Donation of Money*



NOTE.—Error bars represent one standard error of the mean.

FIGURE 13. The Effects of Entitativity on Pledged Donations (Study 2 of Chapter Three)



NOTE.—* $p < .05$; ** $p < .01$.

FIGURE 14. The Mediation Models (Study 2 of Chapter Three)

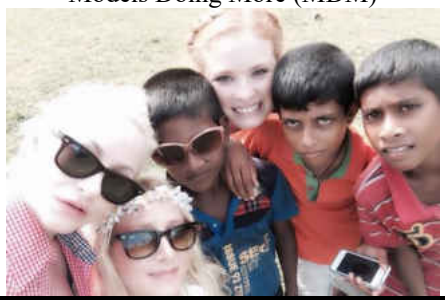
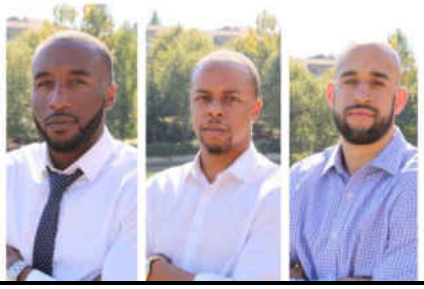
Low Entitativity	**Campaign Name**	Joy Moja Start-Up: Education in Tanzania	Hands 4 Africa
	Body Gesture		
	Facial Expression	Models Doing More (MDM)	24 Hour Bikeathon Challenge
			
High Entitativity	**Campaign Name**	Help Detroit Families for the Holiday	Giving to Fly
	Body Gesture		
	Facial Expression	Legal Alternatives	The Adams Kelly Foundation Inc.
			

FIGURE 15. Sample Pictures from Gofundme.Com in Study 3 (Chapter Three)

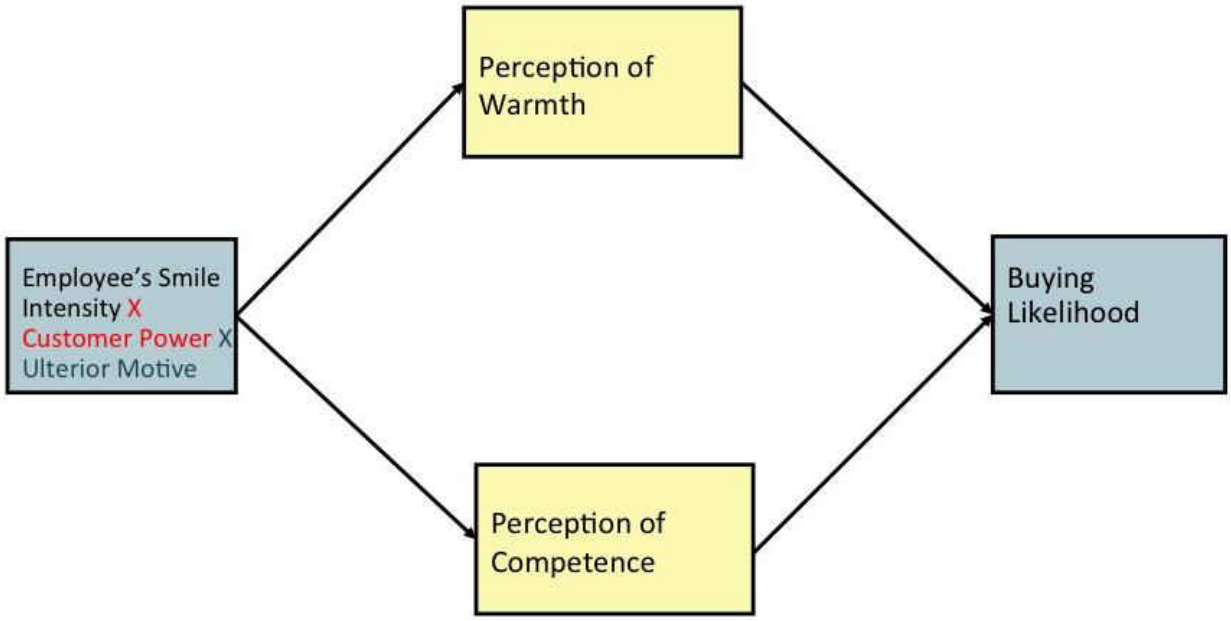


FIGURE 16. Conceptual Framework (Chapter Four)

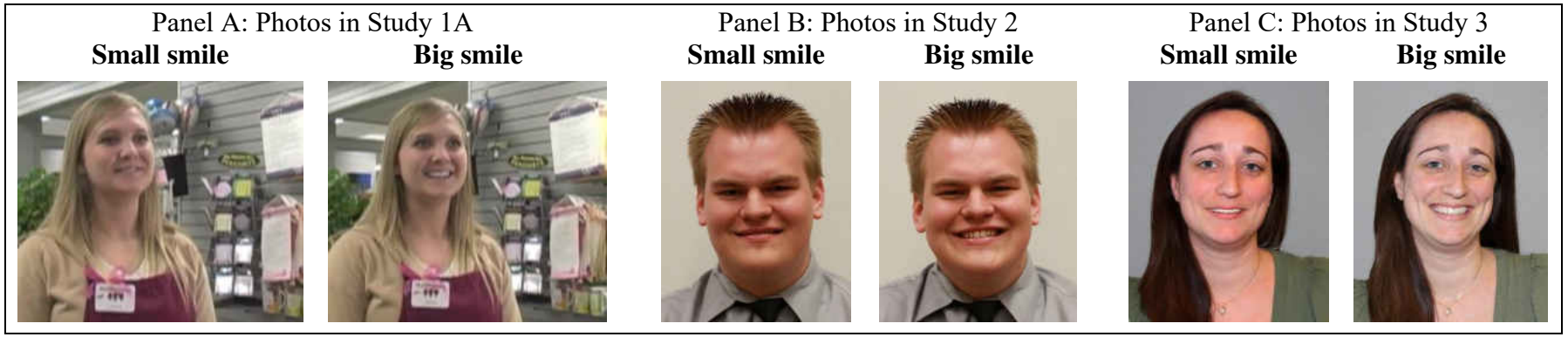


FIGURE 17. Manipulation of Smile Intensity in Studies 1a, 2 and 3 (Chapter Four)

	Low Salience of Ulterior Motive				High Salience of Ulterior Motive			
	Powerless		Powerful		PoIrless		Powerful	
	Small Smile	*Big Smile*	*Small Smile*	*Big Smile*	*Small Smile*	*Big Smile*	*Small Smile*	*Big Smile*
Study 1a								
Attitude toward service provider	4.45 (1.82)	6.09 (.95)	5.38 (1.07)	5.06 (1.21)	-	-	-	-
Customer behavioral intent	4.17 (1.66)	5.43 (1.02)	5.04 (1.30)	4.67 (1.37)	-	-	-	-
Study 1b								
Attitude toward service provider	3.23 (1.31)	4.09 (1.36)	3.86 (1.13)	3.56 (1.32)	-	-	-	-
Attitude toward ad	2.99 (1.27)	4.11 (1.56)	3.60 (1.07)	3.28 (1.63)	-	-	-	-
Study 2								
Attitude toward service provider	4.31 (1.32)	5.22 (0.76)	4.62 (1.04)	4.55 (1.24)	4.21 (1.42)	4.14 (1.10)	3.74 (0.91)	4.67 (1.21)
Customer behavioral intent	4.48 (1.24)	5.24 (0.64)	4.77 (1.01)	4.50 (0.95)	4.21 (1.15)	4.22 (1.10)	3.39 (1.00)	4.60 (0.80)
Study 3								
Customer behavioral intent	4.18 (1.52)	5.22 (1.38)	5.14 (1.00)	4.88 (1.25)	4.18 (1.13)	3.84 (1.51)	3.45 (1.41)	4.51 (0.91)

NOTE.— Standard deviations are in parentheses.

FIGURE 18. Summary of Means and Standard Deviations (Chapter Four)

Small Smile Big Smile

FIGURE 19. Stimuli Used for Study 1b (Chapter Four)

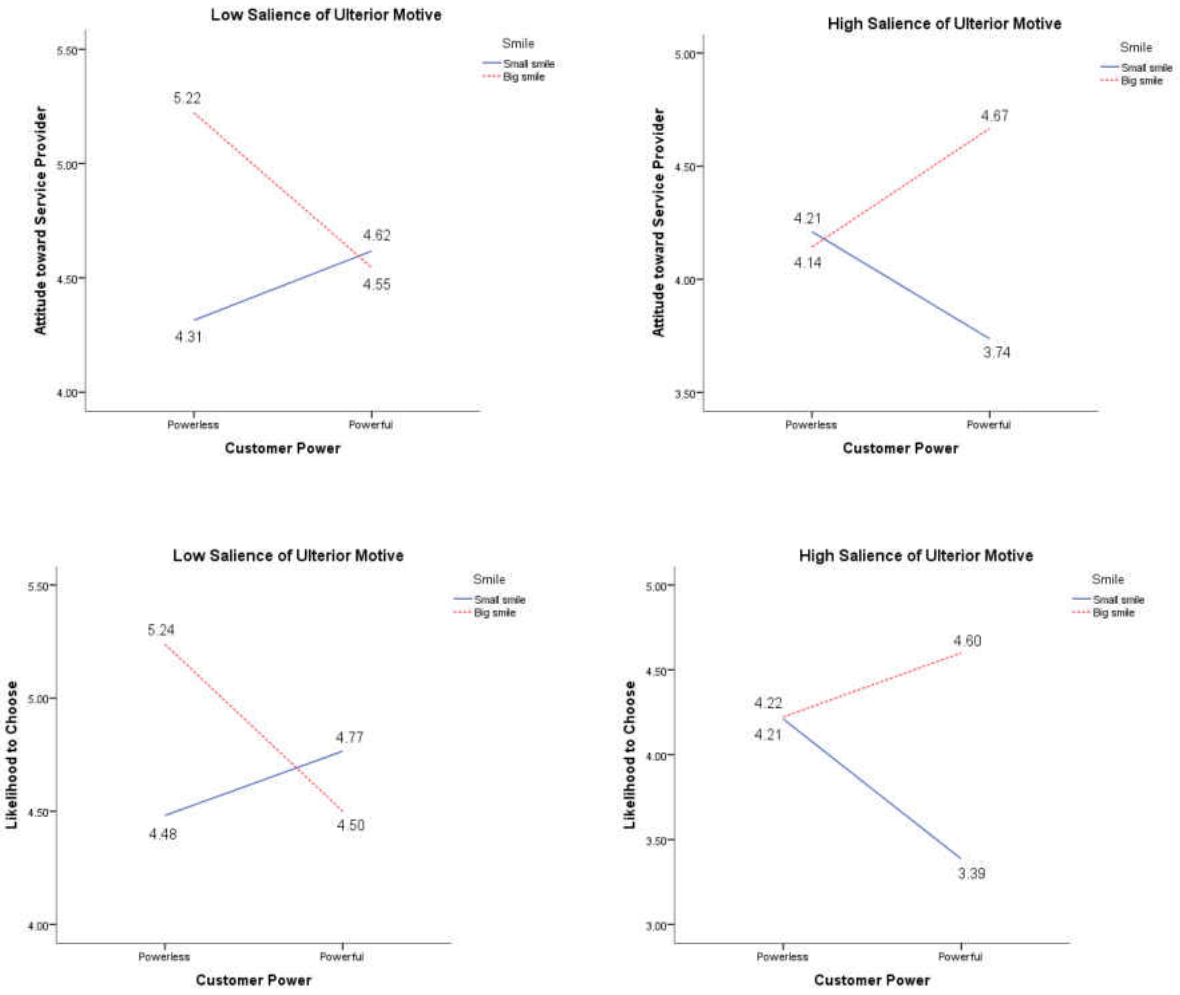


FIGURE 20. The Effects of Smile Intensity, Power, and Ulterior Motive on Customer Attitude and Behavioral Intention (Study 2 of Chapter Four)

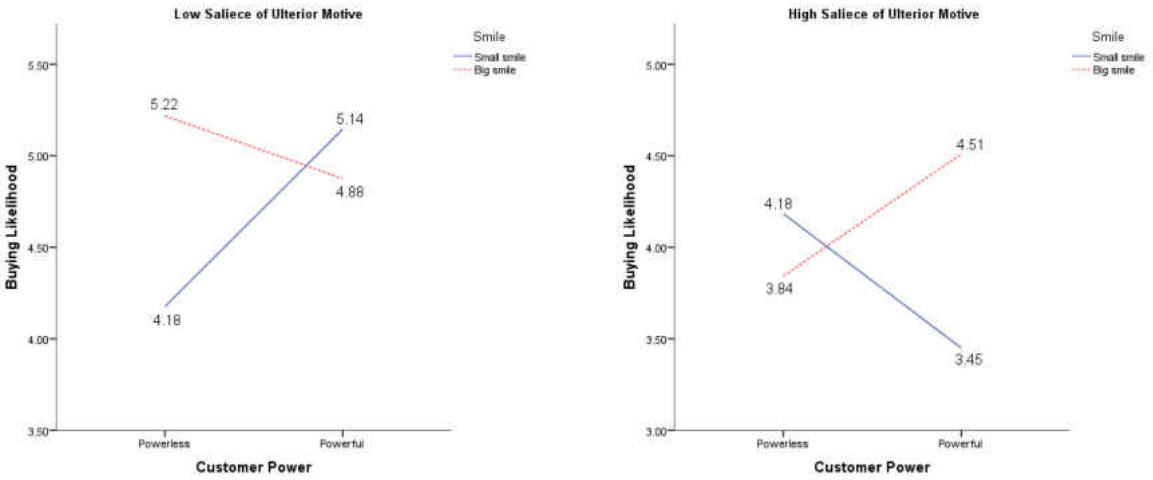


FIGURE 21. Behavioral Intention as a Function of Smile Intensity, Power, and Salience of Ulterior Motive (Study 3 of Chapter Four)

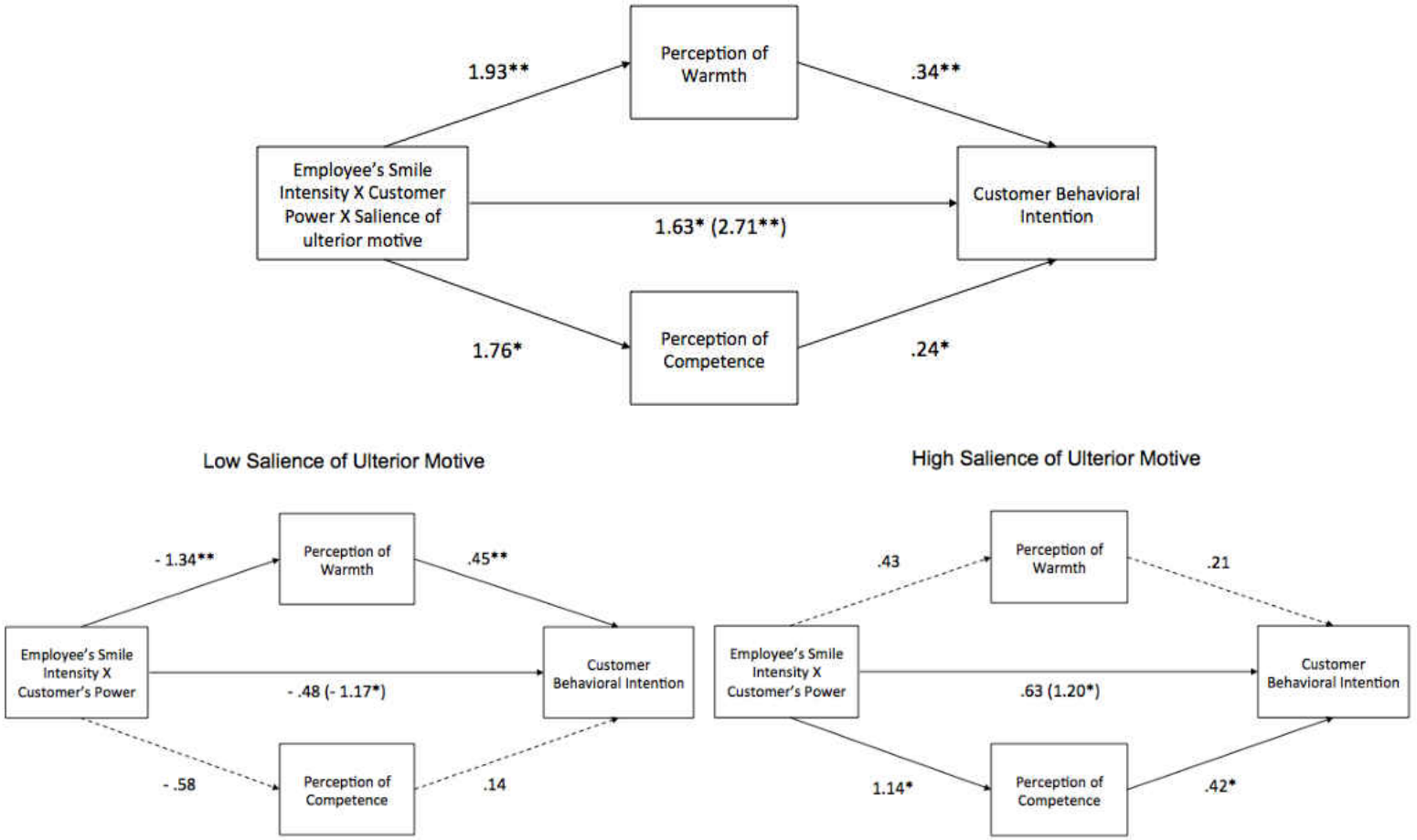


FIGURE 22. Mediation Models (Study 3 of Chapter Four)

APPENDIX B: IRB HUMAN SUBJECTS PERMISSION LETTER

University of Central Florida Institutional Review Board
Office of Research & Commercialization
12201 Research Parkway, Suite 501
Orlando, Florida 32826-3246
Telephone: 407-823-2901 or 407-882-2276
www.research.ucf.edu/compliance/irb.html

Approval of Exempt Human Research

From: **UCF Institutional Review Board #1**
FWA00000351, IRB00001138

To: **Fan Liu** and Co-PI: **Ze Wang**

Date: **February 01, 2011**

Dear Researcher:

On 2/1/2011, the IRB approved the following activity as human participant research that is exempt from regulation:

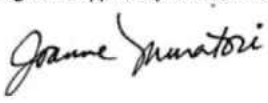
Type of Review:	Exempt Determination
Project Title:	Facial Features and Customer Perceptions of Warmth and Competence
Investigator:	Fan Liu
IRB Number:	SBE-11-07434
Funding Agency:	
Grant Title:	
Research ID:	N/A

This determination applies only to the activities described in the IRB submission and does not apply should any changes be made. If changes are made and there are questions about whether these changes affect the exempt status of the human research, please contact the IRB. When you have completed your research, please submit a Study Closure request in iRIS so that IRB records will be accurate.

In the conduct of this research, you are responsible to follow the requirements of the Investigator Manual.

On behalf of Joseph Bielitzki, DVM, UCF IRB Chair, this letter is signed by:

Signature applied by Joanne Muratori on 02/01/2011 09:12:16 AM EST



IRB Coordinator

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