THE EFFECT OF FACE-TO-FACE INTERACTIONS ON CHOICE: THE ROLE OF EXPRESSIVENESS

by

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A thesis submitted in conformity with the requirements
for the degree of
Doctor of Philosophy

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University of Toronto

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2010

Abstract

This thesis examines the role of face-to-face interactions on individual choice. In particular, I explore the effect of face-to-face requests (compared to other forms of requests) on compliance. I propose that individuals expect facial feedback from their interactive partner in response to their decisions and behaviors in face-to-face interactions. In an effort to avoid anticipated negative feedback, people comply with the request. Drawing from literature on compliance, the face, face-to-face interactions, empathy, and anticipation, I develop and test this proposed theoretical account in five experiments.

1) Experiment 1 demonstrates the effect of face-to-face interactions on compliance with requests relative to other forms of making the requests and rules out some alternative explanations.

2) Experiment 2 replicates the effect in a real world setting, and shows that the effect can be moderated by sensitizing individuals to the face.
3) Experiment 3 shows that the effect can be moderated by facial expressiveness and sensitivity to face. Experiment 3 also shows that anticipation of feedback (rather than actual feedback) drives the effect.

4) Experiment 4 shows that the effect can be moderated by the expressiveness, timeliness, and consistency of facial feedback. It provides further evidence for the role of anticipated facial feedback.

5) Experiment 5 shows that individuals strategically choose different modes of interaction (i.e., face-to-face or impersonal) as a function of the feedback they expect to receive.

Theoretically, this thesis provides a new understanding of how face-to-face interactions and facial expressiveness impact individual choice. In contrast to previous research, I examine the feedback mechanism that such interactions create, and the role of facial expressiveness. By providing an account in which the anticipation of feedback plays a role, this research provides a way of extending the effect of face-to-face interactions on individual compliance to faceless transactions. Moreover, I identify and test the effect of three dimensions of facial expressiveness on individual choice, thereby adding to marketing literature, compliance literature, and communication literature. The current research has managerial implications in personal selling, customer service, employee training, and online transactions.
Acknowledgments

First and foremost, I would like to express my deepest gratitude to my supervisor Professor Dilip Soman for his support and guidance at every stage of the thesis research. He not only cultivates an adventurous spirit in research, but also provides patient encouragement in life.

I thank my committee members, Pankaj Aggarwal, Peter Darke, Nina Mazar, Min Zhao, and Chenbo Zhong, for their insightful comments and guidance.

This thesis benefits greatly from the research assistance of Hae Joo Kim and Hyunwoo Lim. I also thank Christopher Hsee, Andrew Mitchell, Sridhar Moorthy, Ron Borkovsky, Andrew Ching, Avi Goldfarb, Mengze Shi, David Soberman, Claire Tsai, Hee Kyung Ahn, Hae Joo Kim, Kitty Wang, Jaewoo Joo, Ki Yeon Lee, Xiuping Li, Meng Zhang, and attendants of my recruitment seminars for the helpful comments and suggestions.

I thank my dad and mom, Chuanhai Liu and Ruixue Fan, for always supporting and caring for me. I thank my brother Grant Liu, for always being there for me.

Lastly, I am deeply thankful to my dear husband, Ning Lin, for the endless love and patience throughout the years.
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CHAPTER 1
MOTIVATION FOR RESEARCH

Face-to-face interactions are one of the most pervasive and important types of interpersonal interactions (Kendon, Harris, and Key 1975). Such exchanges are also central to many marketing interactions such as customer service, sales, promotions, and negotiations. During a face-to-face interaction, customers have an opportunity of obtaining a relatively high degree of personal attention, as well as receiving a quick and direct response to their concerns.

The development of telecommunication and Internet technologies has led to a reduction in direct face-to-face situations between people in business settings. For example, companies are now able to readily hold conference calls across the world and provide products and services over the Internet. So, are face-to-face interactions becoming increasingly irrelevant? Recent evidence suggests that this is not the case. For instance, there is a growing usage of video calling among both phone and computer users (Lin and Liu 2009). Moreover, Internet emoticons -- the textual portrayals of the writer’s facial expressions--are often used to indicate the mood of the writer or the temperament of a statement: a smiley face : ), a frowning face : (, etc. (Walther and D'Addario 2001). The social networking website Facebook is widely used to update users’ moods and emotions. All of these observations suggest that face-to-face interactions, although expressed in somewhat different ways nowadays, still matter. Thus, face-to-face interactions remain a key element in both business decisions and many other aspects of our daily lives. Moreover, knowing which factors make face-to-face interactions work can help us improve faceless transactions such as telephone transactions and online purchases.
The effect of face-to-face interactions is largely due to the unique features of our body part, the face. Our face is not only the highlight of our appearance, but also a focus of our dignity and social status (Yu 2001). In many languages, the face is used in metaphors when referring to social status or respect (Merkin 2006; Yu 2002). For example, “losing face” means losing your prestige almost universally in all cultures, while “saving face” represents the act of restoring or keeping prestige. “In your face” suggests a defiant confrontation. The use of the term “face work,” as a communicative strategy, means to “enact self-face and to uphold, support, or challenge another person’s face in both daily life and business relationships” (Masumoto et al. 2000). The term “face off” refers to an open confrontation.

This thesis is inspired by the pervasive choice problems that occur during face-to-face interactions in both marketing activities and daily lives. Examples of such choice problems include whether to buy a product, whether to agree to a request, whether to donate to a charity, etc. How to induce compliance in personal selling and direct-to-consumer advertising areas has been an important research problem (e.g., Mowen and Cialdini 1980; Reingen 1978; Tybout, Sternthal, and Calder 1983; Wosinska 2005). Despite the importance of face-to-face interactions in individual choice, there is a lack of research on which factors of face-to-face interactions affect such type of choice problems, and how. Therefore, there is a need for understanding the effect of face-to-face interactions on individual compliance with requests (compared to other forms of requests), the driver of the effect, and how to strengthen and weaken the effect. Solving these research problems not only helps us explore the effects of face-to-face interactions on individual choice, but also helps marketers create an environment where effects of face-to-face interactions on individual compliance, i.e., “face effects,” can be extended to faceless transactions.
This thesis examines the role of face-to-face interactions on individual choice. In particular, I explore the effect of face-to-face requests (compared to other forms of requests) on compliance with requests. I propose that individuals expect facial feedback from their interactive partner in response to their decisions and behaviors in face-to-face interactions. In an effort to avoid anticipated negative feedback, people comply with requests. Drawing from the existing literature on compliance, the face, face-to-face interactions, empathy, and anticipation (e.g., Cole 2001; Cialdini 2001; Ekman and Rosenberg 1997; Fanghanel, Gedrange, and Proff 2006; Lavelli and Fogel 2005; Schwaninger et al. 2006; Widen and Russell 2004; Yu 2001), I develop and test this proposed theoretical account in five experiments.

1) Experiment 1 demonstrates the effect of face-to-face interactions on compliance with requests, relative to other forms of requests and rules out some alternative explanations.

2) Experiment 2 replicates the effect in a real world setting, and shows that the effect can be moderated by sensitizing individuals to the face.

3) Experiment 3 shows that the effect can be moderated by facial expressiveness and sensitivity to face. Experiment 3 also shows that anticipation of feedback (rather than actual feedback) drives the effect.

4) Experiment 4 shows that the effect can be moderated by the expressiveness, timeliness, and consistency of facial feedback. It provides further evidence for the role of anticipated facial feedback.
5) Experiment 5 shows that individuals strategically choose different modes of interaction (i.e., face-to-face or impersonal) as a function of the feedback they expect to receive.

Theoretically, this thesis provides an additional mechanism for understanding how face-to-face interactions and facial expressiveness impact individual choice. In contrast to previous research, I examine the feedback mechanism that such interactions create, and the role of facial expressiveness. By providing an account in which the anticipation of feedback plays a role, this research provides a way of extending “face effects” to faceless transactions. Moreover, I identify and test the effect of three dimensions of facial expressiveness on individual choice, thereby adding to marketing literature, compliance literature, and communication literature. The current research has managerial implications in personal selling, customer service, employee training, and online transactions.

The rest of the thesis is organized as follows. I start with a literature review of the different elements of my research problems in chapter 2: compliance, the face, face-to-face interactions, empathy, and anticipation. In chapter 3, I build my theoretical framework and propose my research hypotheses. In chapters 4-8, I report the procedures and results of four laboratory experiments and one field experiment conducted to test my hypotheses. In chapter 9, I report additional data as further exploration of the effect of face-to-face interactions. In chapter 10, I conclude with a summary of the research, a discussion on the distinctions between my theory and other streams of literature, theoretical contributions, managerial implications, as well as future directions for my work.
CHAPTER 2
LITERATURE REVIEW

This chapter is devoted to a review of the existing literature concerning different elements of my research problems. In this chapter, I review literature on compliance, the face, face-to-face interactions, empathy, and anticipation as the basis of my conceptual framework.

Compliance

This thesis focuses on the individual’s choice of whether to comply with a request, one of the most common decisions that individuals need to make (Cialdini and Goldstein 2004). Compliance refers to the act of responding favorably to a request made by another individual (Cialdini 2001). Examples of compliance requests include explicit requests such as a call for a donation, or implicit ones such as an advertisement for a company’s image. In both situations, individuals are urged to respond in a desirable way when asked, either consciously or unconsciously. For instance, a requester using the foot-in-the-door (FITD) tactic starts with smaller requests and then follows with related, larger requests (Freedman and Fraser 1966). After complying with an initial, smaller request, individuals are more likely to comply with a larger request later on (e.g., Beaman et al. 1983; DeJong 1979; Dillard 1991).
Individuals often make choice of compliance with requests on the basis of the requests’ economic values. However, they also comply with requests when they are motivated to develop and preserve significant social relationships, and to maintain a favorable self-concept (Cialdini and Goldstein 2004). Cialdini’s research (2001) reveals six basic principles that regulate how individuals can influence others in compliance decisions, including liking, reciprocation, consistency, scarcity, social validation, and authority. Particularly, the principle of “social validation” suggests that people frequently look to other individuals for cues on what they should think, feel, and do (Cialdini 2001). Corporations and companies have long recognized the power of social validation to sway individuals’ opinions and purchasing power. This is the reason why marketers spend significant time and resources to find ways to brand their products as the leading or most popular products on the market (Cialdini 2001). The six basic principles that regulate individual compliance are listed in table 2.1.
<table>
<thead>
<tr>
<th>Principle</th>
<th>Theory</th>
<th>Examples</th>
</tr>
</thead>
<tbody>
<tr>
<td>Reciprocation</td>
<td>Individuals follow the norm that they should pay back what they have received.</td>
<td>Reciprocating wedding gifts.</td>
</tr>
<tr>
<td>Liking</td>
<td>Individuals prefer to say yes to those they like.</td>
<td>Physical attractiveness.</td>
</tr>
<tr>
<td>Consistency</td>
<td>Individuals desire to be or appear to be consistent after making commitment.</td>
<td>Foot-in-the-door (FITD) tactic (Freedman and Fraser 1966).</td>
</tr>
<tr>
<td>Scarcity</td>
<td>Product and opportunities become more desirable when less available.</td>
<td>“Limited time” sale.</td>
</tr>
<tr>
<td>Social validation</td>
<td>Individuals decide what to do in a situation by looking to what others are doing or have done before.</td>
<td>“Fastest selling” product.</td>
</tr>
<tr>
<td>Authority</td>
<td>Individuals are more likely to agree with those in command.</td>
<td>Opinion leaders.</td>
</tr>
</tbody>
</table>
Previous research has shown that individuals can frequently behave inconsistently with respect to their personal choices and interests when presented with requests from others (e.g., Cialdini 2001; Heine and Lehman 1997). For instance, when asked by a friend to complete a time-consuming survey, you are presented with a choice between strengthening a friendship and enjoying your personal time. When celebrities are asked to donate to a charity, they are presented with a choice between portraying the image of a socially responsible person and maintaining their personal wealth. Research by Heine and Lehman (1997) suggests that in collectivistic cultures individuals are more likely to behave inconsistently with respect to their personal choices. Individualistic cultures, on the other hand, drive their people to behave consistently with respect to their personal choices (Petrova, Cialdini, and Sills 2007). This is because in collectivistic cultures, the self is defined by social relationships and obligations rather than attributes and qualities (Markus and Kitayama 1991; Triandis et al. 1988). Furthermore, while individualistic cultures deem the self as relatively stable, collectivistic cultures view the self as more malleable (Campbell et al. 1996).

Classical compliance research has indicated that different variables of face-to-face interactions can influence individual compliance, such as prestige of the interactive partner (Kelman and Hovland 1953), size of the group disagreeing with the individual (e.g., Asch 1951), reactions from the victim and confederates (Milgram 1964, 1965), and effort expended in the interactions (Zimbardo and Ebbesen 1970). In almost all these studies, the group pressure arises during face-to-face interactions between the decision-maker and other group members (e.g., Asch 1951; Milgram 1964, 1965). Milgram’s studies (1964, 1965) include conditions where the decision maker has different degrees of face-to-face contact with the victim of electronic shock or the confederates administering the shock. Milgram (1965) shows that feedback from
confederates during face-to-face interactions significantly influences the decision-maker’s likelihood of compliance.

Moreover, the work of Cialdini (2001) suggests the importance of the concept of “moment of power,” that individuals are more likely to comply with requests from someone after thanking the requester to his or her face. Marketing researchers have long been investigating the compliance-inducing strategies, particularly in personal selling and direct-to-consumer advertising areas (e.g., Mowen and Cialdini 1980; Reingen 1978; Tybout et al. 1983; Wosinska 2005). For instance, Mowen and Cialdini (1980) show that slamming door in the face of the requester for the first, larger request can increase the compliance likelihood of a second, smaller request. Wosinska (2005) suggests direct-to-consumer advertising of medicines as a good way of inducing compliance since it can empower the consumers and meet their information demand.

The compliance literature, particularly research in personal selling and advertising, suggests that face-to-face interactions play an important role on individual compliance with requests. Therefore, I use the following sections to review the unique features of the face and face-to-face interactions.

The Face

The face is the most distinctive part of our body and most capable of revealing our inner state (Fanghanel et al. 2006; Schwaninger et al. 2006; Yu 2001). The face has four social roles: (1) as a highlight of our appearance, (2) as an indicator of emotions, (3) as the focus of
interpersonal interaction and relationship, and (4) as the locus of dignity and social prestige (Yu 2001).

First social role of the face is a highlight of our appearance. Analysis of attractiveness of faces has long been an area of research (e.g., Schmid, Marx, and Samal 2008). Previous literature (Guadagno and Cialdini 2002, 2007; Schmid et al. 2008) has identified many factors which contribute to, or relate to, facial attractiveness, such as symmetry, ratios, similarities, etc. The face is one of the most important parts of the body, which is determined fundamentally by how the human body functions (Yu 2002). The face is on the interactive side of the human body, and our faces usually turn to the person, animal, and things we want to interact with. On the other hand, we turn our faces away when we refuse interpersonal interactions. Thus, the face is the most important identifier of ourselves, both biologically and socially.

Second social role of the face is an indicator of our emotions. As I allude to at the outset, the face not only represents our personal identity, but also often reveals our inner state (Fanghanel et al. 2006). Facial expressions are generated by muscles and tension in the elastic skin. This enables the face to be an organ of expression (Fanghanel et al. 2006). Individuals assume that facial expressions are strong cues to another’s emotions (Widen and Russell 2004). As the front side of the head, the face is the body part which is the most expressive as its features are communicative of emotions (Yu 2002). Researchers study facial expressions as a way to identify emotions (e.g., Ekman and Rosenberg 1997; Wierzbicka 1999, 2000). The more expressive features on the face include the brows, eyes, and mouth (highly moveable parts), while the ears and nose seem to be less expressive of emotions. For instance, eyebrows are perceived as one of the most obvious indicators of emotions in the Chinese culture (Yu 2002). Wrinkling the nose is a more universal signal for disgust (Yu 2002). Researchers investigate the
areas around the mouth, eyes, and left and right facial region occlusions to determine which part of the face contains the most discriminating information for facial expression recognition (Kotsia, Buciu, and Pitas 2008).

Third social role of the face is the focus of our interpersonal interactions and relationships. Ting-Toomey (1988) describes the face as an identity that is conjointly defined by the settings and participants. People are motivated to communicate with others in face-to-face settings to fulfill interpersonal needs (Flaherty, Pearce, and Rubin 1998). Schutz (1966) identifies inclusion, affection, and control as the three primary interpersonal communication needs. Compared to other interaction settings, such as the Internet, the face-to-face channel has more social presence and conveys greater personal closeness, and with immediate feedback (Flaherty et al. 1998).

Fourth social role of the face is the locus of our dignity and prestige. People hold up their heads to show their faces when proud, but lower their heads, blush, or hide their faces when embarrassed or ashamed (Yu 2001). Previous studies suggest that people find it difficult to look others in the face and will avoid eye contact if they think they have made a bad impression (Edelmann 1985; Modigliani 1971). This phenomenon appears to be hard-wired as it is loosely analogous to observed primate behaviors. For instance, when a low-status primate is threatened by a higher status one, the lower-status animal averts his or her eyes, or only looks at the higher-status primate obliquely (Leary 1996). In many languages, the face is used in metaphors when referring to social status or respect. For example, “losing face” means losing your prestige almost ubiquitously in all cultures, while “saving face” represents the act of restoring or keeping prestige. “In your face” suggests a defiant confrontation. The use of the term “face work,” as a communicative strategy, means to “enact self-face and to uphold, support, or challenge another person’s face in both daily life and business relationships” (Masumoto et al. 2000). The term
“face off” refers to an open confrontation. These metaphors of the face as representational of dignity and social status can be partly explained by the sensory experience individuals have during a face-to-face interaction (Lakoff and Johnson 1980), particularly the projection of facial feedback from the interactive partner.

In addition to reading faces in interpersonal communications, individuals can read into products and texts certain characteristics of human faces (Aggarwal and McGill 2007; Walther and D'Addario 2001). Anthropomorphizing, defined as seeing the human in non-human forms and events as well as attributing human goals, beliefs, and emotions to animals or objects, often includes seeing human faces in objects (Aggarwal and McGill 2007). People commonly see faces in natural formations, such as in clouds, on the moon, or on the sides of mountains (Aggarwal and McGill 2007). Recent research has shown that it is important for individuals to interact not only with other human beings face-to-face, but also with some objects and products as if they had faces. For instance, Aggarwal and McGill (2007) propose that individuals often attribute human facial emotions to objects that have an appearance similar to that of a human face (e.g., seeing “faces” on the front of a car or a clock).

In summary, the face has multiple roles for both individuals and their interpersonal interactions. Individuals also see faces in other objects or product as an important aspect of anthropomorphizing. The unique features of face leads to specific characteristics of face-to-face interactions compared to other type of interactions. The next section reviews the characteristics and effects of face-to-face interactions.
Face-to-Face Interactions

Face-to-face interactions are defined by Goffman (1959) as “the reciprocal influence of individuals upon one another's actions when in one another's immediate physical presence.” With the development of technologies such as video calls and the Internet, individuals no longer need to be immediately present with their interactive partner to see the partner’s face or to be influenced by the partner’s facial expressions. In this thesis, I define face-to-face interactions as communications where the individuals can see the face of their interactive partner.

Developing psychology literature identifies face-to-face interactions as an important part of emotion sharing (Lavelli and Fogel 2005). Several studies have focused on the infant’s gaze and his or her facial emotional expressions during early communication (Fogel et al. 1997; Hsu, Fogel, and Messinger, 2001; Messinger, Fogel, and Dickson 1999, 2001; Yale, 2000). The ability to maintain eye contact allows the infant to gather perceptual cues as to the partner’s emotions (Fogel et al. 1997).

Communication research often examines the special features of face-to-face interactions as an interpersonal communication channel. Social presence theory (Lightfoot 2006; Short, Williams, and Christie 1976) is used to explain and predict how individuals select their media for communication. Here social presence can be defined as “the degree to which a person is perceived as ‘real’ in mediated communication” (Richardson and Swan 2003, 70). A number of factors influence the perception of social presence, including posture, facial expression, and eye contact in face-to-face interactions (Short et al. 1976). Researchers (e.g., Short et al. 1976)
believe that face-to-face interactions are a high social presence medium and contain numerous overt and hidden communication channels.

Research on persuasion has shown that communication modality affects how a message is processed (Guadagno and Cialdini 2002). Dual process models of persuasion, such as the elaboration likelihood model (Petty and Cacioppo 1984) and the heuristic–systematic model (Chaiken 1980; Chiaken and Chen 1999; Chaiken and Eagly 1983), predict differentially for persuasion on the social constraints of various communication modes. Particularly, Chaiken and Eagly (1983) investigate how communication mode impacts persuasion using three communication methods: written, video, and audio. The study suggests that in the video and audio conditions, personal cues associated with the communicator are more salient and participants engage in heuristic processing; while in the written condition, personal cues are less salient and participants process the message systematically (Chaiken and Eagly 1983). Although both systematic and heuristic processing can be observed during text-based persuasions (e.g., Petty and Cacioppo 1986), Guadagno and Cialdini (2007) argue that text-based communication is more likely to be centrally or systematically processed since the individual will carefully think about the arguments before forming an attitude. On the other hand, verbal persuasive communications, including face-to-face interactions, are more likely to be peripherally or heuristically processed (Guadagno and Cialdini 2007). This is because the individual will consider cues such as the number of persuasive arguments, or the narrator’s attractiveness and likeability before forming an attitude (Guadagno and Cialdini 2007).

Previous research has shown that people increase their level of cooperation when they know their behavior is being observed by others, and use reputation information in deciding how to interact with others (Barclay 2004; Milinski, Semmann, and Krambeck 2002; Wedekind and
Braithwaite 2002). Recent studies indicate that individuals increase contributions to a public good in a real world setting with subtle cues that suggest they are being watched, such as the presence of eye-like objects in the background (Bateson, Nettle, and Roberts 2006).

In summary, so far research on face-to-face interactions has focused on emotion communication and information interpretation during such interactions. Face-to-face interactions contain numerous communicator cues compared to other types of interactions. The following section reviews the relationship between face and a fundamental component of human communication--empathy.

Face and Empathy

The face can facilitate individual’s empathy for the interactive partner and the anticipation of the partner’s feedback. A review of the empathy literature shows that face-to-face interactions can help individuals to generate empathy towards their interactive partners (e.g., Cole 2001). Empathy is a fundamental component of human communication and is defined as a “complex psychological inference in which observation, memory, knowledge and reasoning are combined to yield insights into the thoughts and feelings of others” (Ickes 1997, 2). The ability to perceive other people’s feelings accurately is arguably the most fundamental aspect of empathy (Comfort 1984; Ickes 1997; Levenson and Ruef 1992). Levenson and Ruef (1992) propose three different qualities of empathy: (1) knowing what others are feeling, (2) feeling what others are feeling, and (3) responding compassionately to others’ distress.
Preece and Ghozati (2001) conclude that there is widespread prevalence of empathy in face-to-face interactions. Cole (2001) suggests that the importance of the face should be studied from the effects of visible facial differences in individuals. The face is necessary for the interpersonal relationship underlying a sharing mind state such as empathy (Cole 2001). Evolutionary psychology suggests that the face evolves to assume the role of an embodied representation of the inner state of mind (Cole 2001). For Hobson (1993), individuals show affective states directly to others through increasingly sophisticated facial expressions. On the other hand, a lack of facial expressions from an individual could prevent another’s sympathy and empathy (Cole 2001).

In summary, the face evolves not only to display emotions via facial expressions, but to influence the observers (Cole 2001). The body part of face plays an important role in the development of self-esteem, and becomes a prerequisite for the ability to initiate and enter interpersonal relationships (Cole 2001). Therefore, empathy is supported by, and requires, expression and communication from the face.

Anticipation

Individuals not only use facial expressions as strong cues to other’s emotions (Widen and Russell 2004), but also make choices on the basis of anticipated emotions during their decision making process (Mellers, Schwartz, and Ritov 1999; Wiener et al. 2007). This section reviews literature on anticipated emotions and their effect on individual choice.
Mellers and colleagues (1999) show that individuals make choices on the basis of the emotions they expect to experience. This is, in part, due to the fact that individuals predict the pleasant or unpleasant moods that their partners may actually experience after they make their decisions. For instance, anticipated regret studies show that potential negative feelings have a profound role in both individual choice and interpersonal decision making (Zeelenberg 1999). Mellers and McGraw (2001) propose that anticipated emotions can be generated during the decision making process and taken into account as an additional information source. Decision makers estimate whether they will feel right or wrong as a result of their choice. Mellers and colleagues (1999) show that anticipated emotions (i.e., pleasant vs. unpleasant feelings) predict experienced emotions in financial gamble tasks and shape choices in those tasks.

Although feedback is only certain after outcomes of the decision are known, specific types of emotions and feedback are anticipated and taken into account when evaluating the different options. Sarin (1992) calls for the incorporation of anticipated emotions such as anxiety, nervousness, regret, and fear into decision making. Some studies (e.g., Loomes and Sugden 1987) demonstrate that preferences are influenced by the juxtaposition of the consequences of the possible actions. Simonson (1992) investigates the effect of anticipated regret on individual decision making, specifically credit card spending. March and Shapira (1987) note that anticipation of anxiety, fear, stimulation, and joy has an important effect on managers’ willingness to take risks. Ordonez, Benson, and Beach (1999) show that anticipated regret affects the pre-screening process in decision making before individuals make their choices. These studies focus on the role of the expectation of feedback and clearly show that people are motivated to make choices that shield them from threatening feedback on forgone options (Josephs et al. 1992; Larrick and Boles 1995).
Emotional reactions to future outcomes serve as an important cue for individuals who generally want to maximize positive experiences and minimize negative ones (Bar-Hillel and Neter 1996; Fong and Wyer 2003; Kahneman and Miller 1986; Mellers 2000; Mellers et al. 1999; Simonson 1992; Zhang and Fishbach 2005). So far most research is focused on negative anticipated emotions, such as regret, in choice processes.

Specifically, regret research suggests that individuals prefer choices with minimal potential negative consequences or minimum anticipated regret (e.g., Bell 1982; Gilovich and Medvec 1995; Kahneman and Miller 1986; Loomes and Sugden 1987; Roese and Olson 1997). Regret theory (e.g., Bell 1982; Loomes and Sugden 1987) is developed to examine patterns of choices that are inconsistent with expected utility theory (Ordonez et al. 1999). The essence of regret theory is that the utility of an option depends not only on the utility of the potential outcomes, but also on the disutility from not obtaining better outcomes with another choice. Anticipated regret about bad choices is often used to explain why individuals purchase more well-known brands at higher prices (Simonson 1992).

For positive anticipated emotions, Mellers and McGraw (2001) present a theory of anticipated pleasure-decision affect theory and its relationship with decision making. They suggest that when making decisions, individuals anticipate the pleasure or pain of future outcomes, weigh the emotions by their occurring chances, and choose the option with the greater pleasure, on average (Mellers and McGraw 2001). Subjective expected pleasure theory, or decision affect theory, is consistent with the above studies in predicting individual choices on the basis of anticipated emotions (Mellers et al. 1999). It is found that anticipated pleasure is closely related to choice (Mellers et al. 1999).
Anticipated feedback is most likely to affect individual decisions when negative consequences can start to materialize almost immediately after the decision is made (Zeelenberg 1999). When the outcomes of the decision are not realized quickly, decision makers will discount the possible feedback that this decision can cause, in line with intertemporal choice literature (e.g., Loewenstein 1992).

In summary, research on anticipation of emotions and feedback show that individuals are motivated to make choices that shield them from threatening feedback on forgone options (Josephs et al. 1992; Larrick and Boles 1995). Emotional reactions to future outcomes serve as an important cue for individual decision making. Anticipated emotions and feedback are most effective on individual decisions when the negative consequences are expected immediately.

Reviewing the literature on compliance, the face, face-to-face interactions, empathy, and anticipation, I summarize the different effects of the face on human interactions in table 2.2. In this thesis, I mainly focus on the effect of face-to-face interactions, rather than on the face’s effects as social identity or prestige metaphor. Therefore, I largely use the following effects of the human face in building my conceptual framework in the next chapter: (1) the face as a medium for expressions and emotions; (2) the face as a requirement of empathy, and (3) the face as a provider of salient and immediate feedback.
### TABLE 2.2
A SUMMARY OF EFFECTS OF THE FACE

<table>
<thead>
<tr>
<th>Effect of the Face</th>
<th>Sample References</th>
<th>Main Take-Away</th>
</tr>
</thead>
<tbody>
<tr>
<td>Face as social identity</td>
<td>Fanghanel et al. 2006; Schwaninger et al. 2006; Yu 2001.</td>
<td>• The face is the most distinctive part of our body.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• The face is a highlight of our appearance.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Face is on the interactive part of our body.</td>
</tr>
<tr>
<td>Face as a metaphor for social prestige</td>
<td>Lakoff and Johnson 1980; Yu 2001.</td>
<td>• In many languages, the face is used in metaphors when referring to social status or respect.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• These metaphors can be partly explained by the sensory experience individuals have during a face-to-face interaction.</td>
</tr>
<tr>
<td>Face as a medium for expressions and emotions</td>
<td>Ekman and Rosenberg 1997; Fanghanel et al. 2006.</td>
<td>• The face is an indicator of our emotions.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• The face often reveals our inner states.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Studying facial expressions is a way to identify emotions.</td>
</tr>
<tr>
<td>Face as a requirement of empathy</td>
<td>Cole 2001; Preece and Ghozati 2001.</td>
<td>• There is a widespread prevalence of empathy in face-to-face interactions.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Empathy is supported by and requires the expression and communication from the face.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• A lack of facial expressions from one individual could prevent others’ sympathy and empathy.</td>
</tr>
<tr>
<td>Face as salient and immediate feedback</td>
<td>Ekman 1999; Lavelli and Fogel 2005; Widen and Russell 2004.</td>
<td>• Face-to-face interactions are a high social presence medium and contain numerous overt and hidden communication channels.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Under face-to-face interactions, individuals can receive salient and immediate feedback from interactive partners without temporal delay.</td>
</tr>
</tbody>
</table>
CHAPTER 3
CONCEPTUAL FRAMEWORK

Theory Development

In this chapter, I develop my hypotheses by integrating the literature review regarding compliance, the face, face-to-face interactions, empathy, and anticipation. In particular, I investigate the effect of face-to-face requests (compared to other forms of requests) on compliance with requests. I propose that individuals expect facial feedback from their interactive partner in response to their decisions and behaviors in face-to-face interactions. In an effort to avoid anticipated negative feedback, people comply with requests.

Given the unique features of the face, face-to-face interactions generate a particular feedback mechanism between the individual and their interactive partner. During a face-to-face interaction, the individual knows his or her choice is going to be immediately evaluated. The emotions generated as a result of such an evaluation are likely to be revealed on their interactive partner’s face (Ekman 1999; Fanghanel et al. 2006; Schwaninger et al. 2006; Yu 2001).

Face-to-face interactions are crucial in generating an individual’s empathy to the interactive partner’s feedback. The ability to perceive other people’s feelings accurately is arguably the most fundamental aspect of empathy (Comfort 1984; Ickes 1997; Levenson and Ruef 1992). Levenson and Ruef (1992) propose three different qualities of empathy: (1) knowing what others are feeling, (2) feeling what others are feeling, and (3) responding compassionately
to others’ distress. Empathy is supported by, and requires, expression and communication from the face. The face is necessary for the interpersonal relationship underlying a sharing mind state such as empathy (Cole 2001). Hobson (1993) proposes that individuals show affective states directly to others through increasingly sophisticated facial expressions. On the other hand, a lack of facial expressions from one individual could prevent another’s sympathy and empathy (Cole 2001). The body part of the face becomes a prerequisite for the ability to initiate and enter interpersonal relationships (Cole 2001). Therefore, a face is necessary for the individual to have empathy for their interactive partner, and hence anticipate their partner’s feedback.

Anticipated feedback is most likely to affect individual decisions when negative consequences can start to materialize almost immediately after the decision is made (Zeelenberg 1999). When the outcomes of the decision are not realized quickly, decision makers will discount the possible feedback that this decision can cause, in line with intertemporal choice literature (e.g., Loewenstein 1992). Face-to-face interactions are among situations where anticipated negative feedback can materialize immediately. Face-to-face interactions can often highlight anticipated emotions from the partner’s face. When under a face-to-face interaction, the individual can receive immediate feedback from the interactive partner without temporal delay (Ekman 1999). One need only look at a person’s face to see whether they approve or disapprove of one’s behavior or choice. Therefore, anticipated facial feedback, particularly negative feedback, is very motivating and influential in the individual decision making process.

Previous literature has shown that anticipated emotions and feedback--both positive and negative--have significant effects on individual choices and decisions (e.g., Bell 1982; Kahneman and Miller 1986; Loomes and Sugden 1987; Mellers et al. 1999; Roese and Olson 1997). Individuals can either be motivated to avoid negative feedback (Bell 1982; Gilovich and
Medvec 1995; Kahneman and Miller 1986; Loomes and Sugden 1987; Roese and Olson 1997), or to create positive feedback (Mellers et al. 1999; Mellers and McGraw 2001). Previous research findings have suggested that negative emotions and feedback are often more impactful and motivating than positive ones (Baumeister et al. 2001). In my theory development, therefore, I mainly use negative feedback as the driver of the effect.

I propose that when presented with a face-to-face request, individuals expect facial feedback from their interactive partner in response to their decisions and behavior. The immediacy and salience of facial expressions during face-to-face interactions are likely to elicit imagery of potential facial feedback from an interactive partner (Petrova and Cialdini 2008), while imagining specific scenarios will change an individual’s preference and compliance decisions (Petrova and Cialdini 2008). Previous studies have shown that individuals increase their level of cooperation when they know their behaviors are being observed by others (Barclay 2004; Milinski et al. 2002; Wedekind and Braithwait 2002). Therefore, the unique feedback mechanism that occurs during face-to-face interactions has two key elements: (1) the anticipated expressions from the partner’s face and (2) the salience and immediacy of facial feedback during face-to-face interactions.

Hogarth and colleagues (1991) propose that individuals learn from feedback and use it in their decision making process. Anticipating either a potential positive or negative feedback from their interactive partners’ faces, individuals will incorporate such anticipated emotions during their choice processes (Mellers and McGraw 2001). If the individual anticipates negative facial feedback, they are less likely to reject a request from an interactive partner in order to avoid such feedback. The conceptual framework of my thesis is plotted in figure 3.1.
I propose that the individual choice of whether to comply with requests could be driven by a fear of receiving negative feedback (e.g., disapproval and disgust) from another person’s face. Compared to other forms of requests, face-to-face interactions are more likely to elicit
imagery of potential facial feedback from an interactive partner (Petrova and Cialdini 2008). Consistent with previous research on imagery, imagining specific scenarios will change an individual’s preference and compliance decisions (Petrova and Cialdini 2005). Compared to other forms of requests, face-to-face interactions also help individuals to generate empathy for their interactive partner, and hence to anticipate their partner’s facial feedback. On the other hand, a lack of facial expressions from an individual could prevent another’s empathy (Cole 2001), hence impairing the anticipation of facial feedback. Anticipated negative feedback can serve to obligate individuals to comply in order to avoid anticipated embarrassment, disappointment, or awkwardness. I hypothesize that:

**H1**: Individuals are more likely to comply with requests during face-to-face interactions than other forms of interaction.

The first hypothesis is a replication of predictions from compliance and communication literature (e.g., Cialdini 2001) and serves as my benchmark effect. In this thesis, I not only demonstrate the effect in individual choice settings, but also identify the driver of the effect, and how to strengthen and weaken the effect.

Shiv and Huber (2000) suggest that when individuals anticipate emotions, vivid attributes attract more attentional resources and increase the weight of such information in preference construction. Given the vividness of facial expressions, individual sensitivity to the face could moderate the effect of face-to-face interactions on individual choices.
Sensitivity refers to rapid perception and reaction to small changes (Aron 2006). In this thesis, I use sensitivity to face to refer to the detection and reactions to facial features and movements. Sensitivity to face can be increased by stimulation or raise individual’s attention to subtle changes of the face (Aron 2006). For instance, Solomon, Prkachin, and Farewell (1997) show that exposure to a brief orientation of facial movement increases sensitivity to emotions communicated by facial expression. The group undergoing the orientation is significantly more sensitive to subtle facial movements of the patients (Solomon et al. 1997).

I propose that when individuals are more sensitive to their interactive partner’s face, they are more likely to pick up and react to the facial feedback from the partner. Therefore, they are more likely to increase the weight of facial feedback in their decision process. I hypothesize that sensitivity to the face is a moderator of the effect of face-to-face interactions on compliance:

**H2**: The effect of face-to-face interactions on compliance is stronger when individuals are more sensitive to the interactive partner’s face and weaker when they are less sensitive.

Since anticipated facial feedback is proposed to drive the effect of face-to-face interactions on compliance, manipulating the facial expressiveness of a partner’s face will moderate this effect. The feedback from the partner’s face should be expressive (vivid), timely (immediate), and consistent (suitable) for an individual to take the facial feedback as diagnostic (Hogarth et al. 1991; Salen and Zimmerman 2004). Hence, the expressiveness, timeliness, and consistency of a partner’s facial feedback should be moderators of the effect of face-to-face
interactions on choices. I hypothesize that:

**H3**: The effect of face-to-face interactions on compliance is stronger when the interactive partner’s face is more expressive and weaker when the face is less expressive.

**H4**: The effect of face-to-face interactions on compliance is stronger when the interactive partner’s facial feedback is timely and weaker when the feedback is delayed.

**H5**: The effect of face-to-face interactions on compliance is stronger when the interactive partner’s facial feedback is consistent with anticipated expressions and weaker when the feedback is inconsistent with anticipated expressions.

In chapters 4-7, four experiments designed to test the above five hypotheses are reported.
CHAPTER 4

EXPERIMENT 1: THE EFFECT OF INTERACTION TYPES ON COMPLIANCE WITH REQUESTS

The purpose of this chapter is to test hypothesis 1, that is, individuals are more likely to comply with requests during face-to-face interactions than other types of interaction. As explained in the last chapter, I argue that the effect of face-to-face interactions on individual choices comes from anticipated facial feedback from interactive partner’s face. However, there are alternative explanations for the observed effect. Experiment 1 also serves to demonstrate that the effect of face-to-face interaction on compliance is above and beyond several alternative explanations.

These alternative explanations include:

(1) Identity effect. Face reveals our identity (Fanghanel et al. 2006; Schwaninger et al. 2006; Yu 2001), particularly during a face-to-face interaction. Therefore, participants are more likely to comply with requests in face-to-face interactions since the experimenter knows their identities in this condition, compared with other forms of faceless interactions such as written requests.

(2) Effect of face photo. Recent studies indicate that individuals increase contributions to a public good in a real world setting with the presence of eye-like objects in the background (Bateson et al. 2006). Similarly, participants are more likely to comply with requests in face-to-face interactions since seeing a face photograph of the experimenter can increase the social
pressure for compliance, compared with other forms of faceless interactions such as written requests.

(3) The mere presence effect. Recent studies indicate that individuals increase contributions to a public good with subtle cues that suggest they are being watched (Bateson et al. 2006). Similarly, participants are more likely to comply with requests in face-to-face interactions since the mere presence of another person (i.e., the experimenter) in the same room can suggest that they are observed.

(4) Voice feedback. During a face-to-face interaction, participants can receive not only the facial feedback from the experimenter, but also voice feedback during their conversation. Participants are more likely to comply with requests in face-to-face interactions because of the effect of voice feedback from the experimenter, rather than the effect of facial feedback.

Participants, Design, and Procedure

Participants. Seventy-nine undergraduate students participated in this experiment in exchange for course credit. They were assigned randomly to five different interaction conditions.

Procedure. During the experiment the participants were told that an important part of the experiment could not be finished due to “experiment design problems” and they were then requested to return the following week for another 40 minutes to finish the experiment. Participants were informed that there would be no penalty or additional reward on the
participants’ compensation (one-hour course credit) regardless of their choice. Participants would have to sacrifice their personal time to meet the request from the experimenter if they agreed to come back next week. Participants indicated their choice of returning or not by conversation or by paper-pencil questionnaire.

**Design.** I created five conditions where the experimenter and the participant interacted in different ways:

1. Participants went into an empty room, read a written request, and answered the request via a paper-pencil questionnaire (written request group);

2. Participants read and answered the written request, and understood that the experimenter could read their identity information including the participant’s name, department, and course numbers (identity knowledge group);

3. Participants read and answered a written request. A photo (a two-inch passport photo) of the experimenter’s face was printed on each page of the questionnaire (face on questionnaire group);

4. The participant and the experimenter sat back-to-back in the experiment room, while the experimenter made the request by speaking to the participant (back-to-back group). To avoid the participant potentially feeling awkward about this method of interaction, the experiment explained to the participants beforehand that the study was designed as a “back-to-back” questioning session;
(5) The participant and the experimenter sat face-to-face in the experiment room, while the experimenter made the request by speaking to the participant (face-to-face group).

Following the request, the participants were also presented with several other decision problems and asked for answers to the problems either by conversation or paper-pencil questionnaire. The whole conversation or questionnaire completion took about ten minutes for each condition.

Dependent Variable. Compliance with the request to return was the dependent variable. Participants answered “yes” or “no” to the request either by conversation or by questionnaire. During the debriefing at the end of the experiment, all participants revealed that they believed it was a real choice rather than a research question, and answered with their real preference.

Results and Discussion

Results. I first analyzed the data using a logistic regression model, with compliance with requests as the dependent variable and the five different interactive conditions as the independent variable. As presented in figure 4.1, the results showed a significant effect for conditions ($\chi^2 (4) = 10.1, p < .05$). A pairwise test showed that the participants in the face-to-face group ($M = 81\%$) were significantly more likely to commit to returning the following week than under any other types of interactions ($M = 40\%; \chi^2 (1) = 7.45, p < .01$). Compliance with the request among the other four interaction conditions did not differ significantly ($\chi^2 (3) = .77, p > .1$).
FIGURE 4.1

COMPLIANCE WITH REQUESTS AS A FUNCTION OF
DIFFERENT CONDITIONS IN EXPERIMENT 1

Discussion. The results of experiment 1 were consistent with hypothesis 1. Participants were more likely to comply with requests during a face-to-face interaction than any other types of interactions. The results showed that the ability to see an interactive partner’s face was crucial to increasing participants’ likelihood of compliance with requests.

Moreover, this experiment demonstrated the effect of face-to-face interaction on compliance beyond several alternative explanations. The results from the identity knowledge group showed that participants did not comply with requests because the experimenter knew their identity during a face-to-face interaction. The results from the face on questionnaire group showed that the participants did not comply with requests due to the presence of a face in the
form of a photograph. The results from the back-to-back group showed that the participants did not comply with requests due to the mere presence of another person or voice feedback from the experimenter. The alternative explanations of identity effect, face photo effect, the mere presence effect, and voice feedback were shown not playing a major role in this experiment.

However, several limitations of experiment 1 remained. First, individual compliance with requests were examined using a request for future time. The effect of face-to-face interactions on request for money or buying products was not clear. Second, it remained to be seen whether the results of the lab experiment could be extended into real world settings. Third, experiment 1 only demonstrated the main effect of face-to-face interactions compared to other forms of interactions. How to strengthen and weaken this effect was not examined. To address the above questions and to further show the effect of face-to-face interactions on compliance, I conducted a field experiment as experiment 2.
CHAPTER 5

EXPERIMENT 2: THE EFFECT OF FACE-TO-FACE INTERACTIONS AND SENSITIVITY TO FACE ON COMPLIANCE

The purpose of this experiment is to (1) test hypothesis 1 in a real world setting; and (2) test hypothesis 2 that the effect of face-to-face interactions on compliance is weaker when individuals are less sensitive to the interactive partner’s face and stronger when they are more sensitive.

This experiment was a field experiment conducted in a beauty salon in an Asian city. Sensitivity to face was tested as a moderator of the effect of face-to-face interactions on compliance.

Field Experiment Background

*The Beauty Salon.* This experiment was conducted in a beauty salon located in an Asian city with a population of approximately 80,000. The manager of the salon agreed to help with the experiment in exchange for advice for promotion strategies of the salon.

The salon was part of a chain that had three other salons in the city. There were ten stylists
that provided services to over 100 customers each day in this salon. The salon provided two main services, (1) hair services, including haircuts, perms, straightening, coloring, and hair spas, and (2) facial services, including facial cleaning, facial spas, facial massages, and make-up application. The salon offered a 20% discount to all services if customers purchased a membership card. The price of the membership card was equivalent to US$30. The salon promoted the membership card using two methods: talking to customers face-to-face, or giving out booklets in the salon waiting area and on local streets.

**Salon Services.** Two specific services--hair cutting and facial cleaning--were selected to be used in the experiment. These two services were both basic services and were offered at the same price. During a hair cutting session customers had their hair washed, cut and blown dry, and received suggestions from stylists on how to style and care for their hair. During facial cleaning customers received a deep cleaning of their face, a facial massage, a plucking of the eyebrows, and suggestions from stylists on skin care. Both services ranged from 20 minutes to half an hour in duration. Around 70% of the customers visiting the salon required a hair service, while 30% required a facial service. Customers who required both the hair service and facial service during one trip were excluded from the experiment.

**Participants, Design and Procedure**

**Participants.** One hundred and eighteen female customers participated in the experiment.
Most of the participants had never previously purchased a membership card from this salon prior to the experiment.

**Design.** The experiment had a 2 (promotion type: face-to-face vs. written request) by 2 (sensitivity: sensitivity to face vs. sensitivity to hair) between-subject design. Customers were randomly assigned to the face-to-face condition or the written request condition.

**Procedure.** The customers entered the salon and required certain types of services for themselves. After the service, the stylist requested the customers to buy a membership card from the salon either by face-to-face conversation or by giving the customer the membership card booklet (written request).

Since the customers had just spent about 30 minutes having a stylist take care of their faces or hair, it was surmised that they were more likely to be sensitized to that particular body part. Depending on the service they requested upon entering the store, customers self-selected themselves into either the sensitivity to face or the sensitivity to hair group. Solomon and colleagues (1997) show that exposure to a brief orientation of facial movements will increase sensitivity to emotions communicated by facial expression. The group undergoing the orientation will be significantly more sensitive to subtle facial movements (Solomon et al. 1997). Following Solomon and colleagues’ manipulation (1997), sensitivity to face (vs. sensitivity to hair) was heightened by (1) stylists stimulating the customer’s face (vs. cutting the customer’s hair) for half an hour and (2) stylists talking with the customer about taking care of face (vs. hair) during the service session.
In the face-to-face promotion condition, the stylist promoted the membership card and its benefits via a face-to-face conversation with the customer. In the written request condition, the stylist invited the customer to read a booklet that described the salon services and the membership card benefits in details, which constituted a written request to purchase the card. Both the face-to-face conversation and the booklet reading occurred between the end of the service and payment for the service. In this way, the customer could benefit from the price discount instantly if they decided to purchase the membership card.

Dependent Variable. The dependent variable was customer compliance with a request to purchase the membership card. If the customer chose to pay for the card at the end of the service, her choice was coded as compliance with the request.

Results and Discussion

Results. I analyzed the data using a logistic regression model with compliance with promotion as the dependent variable, and promotion type and sensitivity as two independent variables. The results showed a significant simple effect of promotion type ($\chi^2 (1) = 13.97, p < .001$) and a significant simple effect of sensitivity ($\chi^2 (1) = 5.42, p < .05$), qualified by a significant interaction between promotion type and sensitivity ($\chi^2 (1) = 3.67, p < .05$). As can be seen in figure 5.1, face-to-face interactions had a significantly higher percentage on individual choice of whether to purchase the membership card than written requests ($M = 50\%$ vs. $16\%$).
The effect of face-to-face interaction on individual choices was moderated by sensitivity to face. Customers who had just received a facial treatment were more likely to purchase the membership card under the face-to-face promotion than under the written request ($M = 66\%$ vs. $35\%$). This difference between face-to-face promotion and written request conditions ($M = 14\%$ vs. $19\%$) decreased when customers received a haircut.

**FIGURE 5.1**

**COMPLIANCE WITH PROMOTION AS A FUNCTION OF PROMOTION TYPE AND SENSITIVITY IN EXPERIMENT 2**

*Manipulation Check.* In this experiment, customers were classified into sensitivity to face condition or sensitivity to hair condition by self-selection of services. Given the limitations of a field experiment, I was not able to check this manipulation by direct measurement of customers’
sensitivity to face.

A separate group of 30 customers attended a test as a substitute method of manipulation check. The test was to see whether the customers who received a facial cleaning were indeed more sensitive to face than the customers who had chosen a haircut. After this group of customers received services at the salon, the stylists asked customers the following question: “hypothetically if you were entered into a lucky draw and could choose a prize between a shampoo and a face-washing cream of the same price, which one would you prefer?” Almost 50% of the customers chose the face-washing cream over the shampoo after having just received the facial cleaning service; while only 20% chose the face-washing cream over the shampoo after having just received the hair cutting service. This test suggested that customers who had received a facial cleaning were more sensitive to face than the customers who had received a haircut.

Discussion. In conclusion, the beauty salon experiment demonstrated the effect of face-to-face interactions on individual choice in a real world setting. This experiment showed that face-to-face interactions increased customer likelihood of compliance with a request to buy a membership card, compared to situations without face-to-face interaction. Customer sensitivity to face moderated the effect, consistent with hypothesis 2.

One weakness of experiment 2 was that different sensitivity groups were divided using self-selection method rather than randomization. This was due to the limitations of a field experiment. Together with experiment 1, experiment 2 supported the basic hypothesis that face-to-face interactions increased the likelihood of individual compliance. However, the underlying process of this effect was unclear.
In addition, one crucial question remained after experiments 1 and 2: was actual facial feedback a necessary condition to drive individual compliance? What would happen if participants did not receive actual facial feedback but anticipated certain type of facial feedback? To address the above questions and to investigate the underlying process of the effect of face-to-face interactions, I conducted experiment 3.
CHAPTER 6
EXPERIMENT 3: THE EFFECT OF FACIAL EXPRESSIVENESS AND SENSITIVITY TO FACE ON COMPLIANCE

The purpose of this experiment is to (1) further test hypothesis 2 that sensitivity to face moderates the effect of face-to-face interactions on choices, (2) test hypothesis 3 that the effect of face-to-face interactions on compliance is greater when the interactive partner’s face is more expressive and weaker when the face is less expressive, and (3) provide support for anticipated facial feedback as the underlying process for the effect.

In experiments 1 and 2, participants engaged in real face-to-face interactions where they received actual facial feedback from their interactive partners. In order to find out whether actual facial feedback was necessary to drive individual compliance, the present experiment used videos to simulate face-to-face interactions. The participants watched a narrator’s face and its expressions while the narrator was talking with a background voice. The expressiveness of the narrator’s face was varied as a manipulation of the facial feedback that the participants anticipated from the narrator.
Participants, Design, and Procedure

*Participants.* Eighty undergraduate students participated in this experiment in exchange for course credits. The participants were randomly assigned into four conditions and each watched two videos.

*Design.* This experiment was constructed with a 2 (facial expressiveness: expressive expression vs. blank expression) by 2 (sensitivity: sensitivity to face vs. sensitivity to production) between-subject design.

*Procedure.* In the first video, participants watched a short conversation between a narrator whose face appeared in the center of the camera, and a female background voice. Both male and female narrators were used in order to rule out any potential effect of gender on the dependent variables. The conversation between the narrator in the video and the background voice focused on a term paper the narrator was working on. After watching the short video twice, participants rated the quality of the production of the video and completed a questionnaire on video-making as a filler task.

For the expressive expression group, the narrator in the first video displayed lively facial expressions. The facial expressions were consistent with the narrative of the conversation. In the blank expression group, the narrator in the first video displayed almost no facial expressions.
throughout the video. The facial expressiveness of the expressive expression video and the blank expression video is simulated in figure 6.1 with screenshots from the videos.

FIGURE 6.1
FACIAL EXPRESSIVENESS SIMULATION FOR EXPERIMENTS 3

Expressive Expression     Blank Expression

Happy Narrative

Sad Narrative

Angry Narrative
In order to manipulate different sensitivity to face conditions, participants were instructed beforehand to think about different problems when watching the first video. In the sensitivity to face condition, the experimenter instructed the participants to watch carefully the person in the video in order to answer questions regarding the person. Since the narrator’s face was the center of the video, the participants were sensitized to the features and movements of the narrator’s face. In the sensitivity to production condition, the experimenter instructed the participants to think about what aspects of the video could be improved upon in terms of production quality (e.g., lighting, camera angle, editing, and sound, etc.). This way the participants were sensitized to quality of the video rather than the narrator’s face.

The participants then completed a simple paper-pencil questionnaire rating the quality of the video and the frequency of their video-making activities. After this questionnaire, the participants watched the second video which was the same across all four conditions.

In the second video, participants saw again the same narrator from the first video. The video background and camera angle remained the same. The narrator made two requests to the participants, and asked them to make choices based on those requests. For the first choice, the narrator asked the participants to choose between Task A and Task B to do during the last 20 minutes of the experiment session. The narrator described Task A as the difficult task, involving a lot of hard-thinking and calculations. The narrator described Task B as the easy task, not involving any hard-thinking or calculations. The narrator encouraged the participants to choose the difficult task, since it was stated to be more beneficial to the research. Participants indicated their choice by circling either “Task A” or “Task B” on a paper questionnaire.

For the second choice, the narrator asked the participants to choose whether to donate $40 to buy books for kids in a local family care program if they were to win $50 in a lucky draw. Participants indicated their choice by circling either “yes” or “no” on a paper questionnaire.
After indicating their choices, participants rated the likability of the narrator in the video on a five-point scale, with one representing “very unlikable” and five representing “very likable.” Similarly, participants rated the attractiveness of the narrator in the video on a five-point scale, with one representing “very unattractive” and five representing “very attractive.”

**Dependent Variables.** Participant’s choice of difficult task and choice of donating were used as two dependent variables. These two dependent variables were to examine participants’ compliance to requests regarding their effort as well as money.

Results and Discussion

**Results.** I analyzed the data using logistic regression models with choice of difficult task and choice of donation as two dependent variables, and sensitivity and facial expressiveness as two independent variables. Data analysis for the choice of difficult task indicated a significant simple effect of sensitivity (χ² (1) = 5.42, p < .05) and a significant simple effect of facial expressiveness (χ² (1) = 4.34, p < .05), qualified by a significant interaction between facial expressiveness and sensitivity (χ² (1) = 5.72, p < .05). The effect of facial expressiveness on individual choice was a function of sensitivity. As can be seen in figure 6.2, when sensitized to the narrator’s face, participants were more likely to choose the difficult task after watching an expressive expression video than after watching a blank expression video (M = 84% vs. 50%). When sensitized to the video production, participants’ choices did not differ significantly whether they watched an expressive or a blank expression video (M = 41% vs. 60%).
Similarly, data analysis on compliance with donation indicated a significant simple effect of sensitivity ($\chi^2 (1) = 5.58, p < .05$) and a significant simple effect of facial expressiveness ($\chi^2 (1) = 4.76, p < .05$), qualified by a significant two-way interaction ($\chi^2 (1) = 7.06, p < .01$) between sensitivity to face and facial expressiveness. As can be seen in figure 6.3, when sensitized to the narrator’s face, participants were more likely to donate money after watching an expressive expression video than after watching a blank expression video ($M = 63\%$ vs. $25\%$). When sensitized to the video production, participants were less likely to donate money after watching an expressive expression video than after watching a blank expression video ($M = 20\%$ vs. $50\%$).

The results are plotted in figure 6.3.
FIGURE 6.3

COMPLIANCE WITH DONATION AS A FUNCTION OF FACIAL EXPRESSIVENESS
AND SENSITIVITY IN EXPERIMENT 3

I analyzed the effects of narrator’s likability and attractiveness on participants’ choices using logistic regression models, with choice of difficult task and choice of donation as two dependent variables, and narrator’s likability and attractiveness as two independent variables. Data analysis for the choice of difficult task indicated that there was no significant effect of likability ($\chi^2 (1) = 1.52, p > .1$) or attractiveness ($\chi^2 (1) = 2.55, p > .1$) on participants’ choices. Data analysis for the choice of donating indicated that there was no significant effect of likability ($\chi^2 (1) = 2.35, p > .1$) or attractiveness ($\chi^2 (1) = .01, p > .1$) on participants’ choices. These results suggested that likability and attractiveness of the request-maker did not play significant roles on individual compliance in this experiment.
Manipulation Check. I recruited a separate group of participants to complete a task under the cover story of a “video study.” In this task, I conducted manipulation check to see if the manipulation of different anticipation of facial feedback was successful in experiment 3. Forty participants attended the experiment for course credit. Half of the participants watched the expressive expression video, and the other half watched the blank expression video under the cover story of a “video study.” After watching the video twice, the participants were asked to make predictions on the facial feedback of the narrator. The participants could either describe their predictions in words, or draw facial expressions of the narrator. Specifically, the participants were asked to predict the facial feedback separately (1) if they said “yes” to a request from the narrator and (2) if they said “no” to a request from the narrator.

After watching the expressive expression video, all 20 participants predicted positive expressions for the narrator if they said “yes” to a request (e.g., “smile,” “happy,” and “delighted”), and negative expressions for the narrator if they said “no” to a request (e.g., “look embarrassed,” “sad,” and “not happy”). After watching the blank expression video, 12 out of 20 participants predicted empty expressions or no expressions for the narrator whether they say “yes” or “no” to a request. The rest of the participants predicted positive expressions for the narrator if they said “yes” to a request and negative expressions for the narrator if they said “no” to a request. The predictions from the participants suggested that the manipulation was successful. Participants expected the facial feedback from the narrator to be expressive after watching the expressive expression video. On the other hand, most participants expected the facial feedback from the narrator to be less expressive after watching the blank expression video.
Since a separate sample of participants attended the manipulation check study, it was not possible to do a more standard process analysis according to Baron and Kenny (1986). Therefore, the process evidence was somewhat indirect in this experiment.

**Discussion.** In conclusion, this experiment showed that participants were more likely to comply with requests when their interactive partner’s facial expression was appropriate, particularly when they were more sensitive to the interaction partner’s face. Moreover, this experiment used videos to simulate real-life face-to-face interactions. The participants received no actual facial feedback and experienced no real face-to-face interactions. However, a more expressive face from the narrator was able to increase the compliance likelihood of the participants. This showed that anticipated facial feedback, rather than actual facial feedback, could be a driver of compliance with requests.

It should be noted that in the sensitivity to production condition, the difference between participants’ compliance with donation was significant between the expressive expression group and the blank expression group \((M = 20\% \text{ vs. } 50\%, P < .05)\). This finding was surprising and which process was at working here was unclear. One possible explanation was that the manipulation of facial expressiveness wore off by the time of the second choice question. Future studies can collect thought protocols from the participants to find out the underlying mechanism.

Experiment 3 suggested that facial expressiveness was an important factor in affecting individual compliance with requests. Individuals were more likely to be influenced by anticipated facial feedback only when that feedback from the interactive partner was diagnostic for the choice problems. Other than expressiveness of the facial expressions, other dimensions of
facial feedback should also be important in driving individual compliance. Consistent with the literature on feedback (Hogarth et al. 1991; Salen and Zimmerman 2004), anticipated facial feedback should also be timely and consistent with the expectations of the decision-maker.

I conducted experiment 4 to further explore how different dimensions of facial expressiveness affect individual compliance, as well as to further support anticipated facial feedback as the driver of the effect.
CHAPTER 7

EXPERIMENT 4: THREE DIMENSIONS OF FACIAL EXPRESSIVENESS AND THEIR EFFECT ON COMPLIANCE

This experiment serves to test hypotheses 3, 4 and 5. This experiment was designed to further explore the role of facial expressiveness in the effect of face-to-face interactions on individual choices. Consistent with the literature on feedback (Hogarth et al. 1991; Salen and Zimmerman 2004), anticipated facial feedback should be expressive, timely, and consistent with the decision-maker to be considered diagnostic in the choice process. Therefore, facial expressions were decomposed into three differing dimensions--expressiveness, timeliness, and consistency--as moderators of the effect of face-to-face interactions on compliance (Ekman 1999).

Participants, Design, and Procedure

Participants. One hundred and six undergraduate students participated in this experiment in exchange for course credit. The participants were randomly assigned into six different conditions.

Procedure. This experiment followed the same procedure as outlined in experiment 3. Participants watched two videos and answered the same two choice questions. Different from
experiment 3, the level of sensitivity to face was not manipulated. All participants were asked to watch the video carefully to answer questions afterwards.

**Design.** Facial expressiveness of different conditions is simulated in figure 7.1 with screenshots from the videos. Participants were randomly assigned to the following six expressiveness conditions:

(1) Expressive expression video: the narrator in the first video displayed appropriate and lively expressions on his or her face when talking to the background voice.

(2) Blank expression video: the narrator in the first video displayed no expressions on his or her face throughout the video.

(3) Same expression video: the narrator in the first video displayed the same expressions on his or her face throughout the video: always smiling no matter the content of the conversation.

(4) Delayed expression video: the narrator in the first video displayed appropriate and lively expressions on his or her face. However, each of his or her facial expressions was delayed for 5-10 seconds during the conversation.

(5) Opposite expression video: the narrator in the first video displayed inconsistent expressions on his or her face when talking to the background voice. For instance, the narrator looked annoyed when thanking other people for help, but laughed when expressing disappointment or sadness. The narrator’s facial expressions were opposite to what was expected out of the conversation narrative.
(6) Written request: participants answered the two choice questions via a paper-pencil questionnaire without watching the two videos. There was no facial feedback by video.

In this experiment, I manipulated expressiveness of facial expressions by contrasting expressive expression videos against both the blank expression video and the same expression video. A face was regarded as inexpressive if it had no expressions or had one single expression.

**FIGURE 7.1**

**FACIAL EXPRESSIVENESS SIMULATION FOR EXPERIMENT 4**
**Dependent Variables.** Following experiment 3, I used the choice of difficult task and the choice of donating as two dependent variables in this experiment. Participants indicated their choice for the first question by circling either “Task A” or “Task B” on a paper questionnaire. They indicated their choice for the second question by circling either “yes” or “no” on a paper questionnaire.

Results and Discussion

**Results.** I analyzed the data using logistic regression models with choice of difficult task and choice of donation as two dependent variables, and facial expressiveness as the independent variable. Results from a logistic regression analysis indicated a significant simple effect of conditions for both compliance with the difficult task ($\chi^2 (5) = 11.36, p < .05$) and compliance with the donation ($\chi^2 (5) = 11.34, p < .05$). A pairwise test showed that the expressive expression group had a significantly higher percentage ($M = 84\%$) of compliance with the difficult task-request than the remaining groups ($M = 49\%; \chi^2 (1) = 8.64, p < .01$). The percentage of compliance with the difficult task among the remaining groups did not differ ($\chi^2 (4) = 2.73, p > .1$). Similarly, a pairwise test showed that the expressive expression group had a significantly higher percentage ($M = 63\%$) of compliance with the donation-request than the remaining groups ($M = 31\%; \chi^2 (1) = 10.00, p < .01$). There was no significant difference between the remaining groups ($\chi^2 (4) = 1.34, p > .1$). The results are displayed in figures 7.2 and 7.3.
FIGURE 7.2
COMPLIANCE WITH DIFFICULT TASK AS AN EFFECT OF FACIAL EXPRESSIVENESS IN EXPERIMENT 4

Percentage of Compliance

FIGURE 7.3
COMPLIANCE WITH DONATION AS A FUNCTION OF FACIAL EXPRESSIVENESS IN EXPERIMENT 4

Percentage of Compliance
Manipulation Check. After answering the two choice questions, the participants completed a questionnaire where they rated the expressiveness, timeliness, and consistency of the facial expressions of the narrator in the first video as the manipulation check. Participants rated expressiveness of the narrator’s face on a five-point scale (1 = not expressive at all, 5 = very expressive). Participants rated timeliness of the narrator’s facial expressions on a five-point scale (1 = very slow, 5 = very timely). Participants rated consistency as whether the narrator’s facial expressions was suitable with their expectations on a five-point scale (1 = very unsuitable, 5 = very suitable).

To test whether the manipulation of expressiveness, timeliness, and consistency of the facial feedback was successful across conditions, a one-way ANOVA for each of the three measurements was conducted between the groups watching the expressive expression video, blank expression video, delayed expression video, and opposite expression video. The results showed a significant difference between conditions in terms of expressiveness ($F(3, 62) = 6.22, p < .001$), timeliness ($F(3, 62) = 26.60, p < .001$), and consistency ($F(3, 62) = 5.48, p < .01$). Participants rated facial feedback in expressive expression ($M = 4.32$) and opposite expression conditions ($M = 4.56$) as more expressive than under the blank expression ($M = 2.62$) and delayed expression conditions ($M = 3.33$). At the same time, participants in the delayed expression condition ($M = 1.20$) rated the facial expression significantly slower than the expressive expression ($M = 4.26$), blank expression ($M = 3.63$), and opposite expression conditions ($M = 3.63$). In addition, participants rated the facial expressions in the opposite expression ($M = 3.00$) and blank expression conditions ($M = 3.00$) significantly less consistently than under the expressive expression ($M = 4.84$) and delayed expression conditions ($M = 3.80$). These results were consistent with predictions and suggested that participants made choices on the basis of their
prediction of the facial expression of the experimenter. The manipulation of anticipated facial feedback was successful.

Discussion. Therefore, the results of this experiment further supported that anticipated facial feedback, not necessarily actual facial feedback can make participants more likely to comply with requests.

The results from experiment 4 were consistent with hypotheses 3, 4 and 5 in that expressiveness, timeliness, and consistency of facial expressions moderated the effect of face-to-face interactions on compliance. Anticipated facial feedback should be expressive, timely, and consistent for the decision-maker to consider the feedback to be diagnostic in their choice process. When anticipated facial feedback was inexpressive, delayed, or inconsistent with expectations, participants were less likely to make decisions on the basis of the feedback.

In this experiment, I manipulated expressiveness of facial expressions by contrasting expressive expression videos against both the blank expression video and the same expression video. It should be noted that participants were more likely to choose the difficult task ($M = 84\%$ vs. $45\%$) and choose to donate ($M = 63\%$ vs. $40\%$) after watching the expressive expression video than the same expression video. In this experiment, the expressive expression video worked more effectively than the same expression video where the narrator was always smiling. This result indicated that the effect of expressiveness on individual choice of compliance was separate from the effect of positive mood.
One weakness of this experiment was that there was not a condition where the video narrator’s facial expression was inexpressive with just one negative expression (e.g., sad, angry, upset). Therefore, there was a lack of support that the effect of expressiveness on individual choice of compliance was separate from the effect of negative mood. This could be addressed by adding a new condition where the video narrator’s face always displayed negative emotions in the future studies.
CHAPTER 8

EXPERIMENT 5: STRATEGIC CHOICE OF FACE-TO-FACE INTERACTIONS OVER EMAIL EXCHANGES

So far experiments 1-4 showed the effect of face-to-face interactions on individual compliance and the boundary conditions. The experiment findings also supported anticipated facial feedback as the underlying process. One question remains that whether individuals will make use of their anticipation of facial feedback. Knowing what type of facial feedback they are going to receive, will they strategically choose to engage in face-to-face interactions or avoid them? I conducted experiment 5 to investigate this research question.

Individuals may strategically choose to engage in, or avoid, face-to-face interactions based on the anticipated facial feedback they are going to receive from their interactive partner. I predict that in a potentially embarrassing situation, individuals predict a negative facial feedback from their interactive partner. Therefore, they are less likely to choose face-to-face interactions (over impersonal interactions), particularly when the anticipated feedback from the face of the interactive partner is expressive rather than inexpressive. This effect should be stronger when the anticipated embarrassment level is higher and weaker when the anticipated embarrassment level is lower. I hypothesize that:
**H6:** In a potentially embarrassing scenario, individuals are less likely to choose face-to-face interactions when anticipating expressive facial feedback compared to anticipating inexpressive feedback.

Experiment 5 serves to test hypothesis 6 and to investigate the effect of anticipated facial feedback on individual choice of face-to-face interactions.

Participants, Design, and Procedure

*Participants.* One hundred and thirty-two undergraduate students participated in this experiment in exchange for course credits. They were randomly assigned into four different conditions.

*Design.* In this experiment, I put participants into different types of scenarios and asked them to choose whether to engage in a face-to-face interaction or an email exchange with a classmate. To test how anticipated feedback influenced such choices, I set up a 2 (expressiveness: expressive expressions vs. same expressions) by 2 (embarrassment level: high vs. low) between-subject design for the experiment.

*Procedure.* The participants were told to imagine they were the leader of a study group. One of their group members was not diligent enough to finish his or her part of the work and the participant had to talk to the group member regarding this issue. For the high embarrassment
condition, the group member in question was assumed to have done no work at all and the problem was serious. The participants needed to have a serious talk with the group member, and hence the anticipated embarrassment level was high. For the low embarrassment condition, the group member in question was assumed to have done the work, but not very well, and that this was thus, not a big problem. The anticipated embarrassment level was low. In the expressive expressions condition, the group member was described as a nice person but quite dramatic. The facial expressions of the group member were quite expressive and vivid during conversations. In the same expressions condition, the group member was described as a nice person and always smiling regardless of the content of the conversations.

**Dependent Variable.** The participants were asked to choose whether they wanted to engage in a face-to-face conversation (vs. an email exchange) with the group member. Participants indicated their choice by circling either “face-to-face interactions” or “email conversation” on the questionnaire. The choice of face-to-face interaction was used as the dependent variable.

Results and Discussion

*Results.* I analyzed the data using a logistic regression model with choice of face-to-face interactions as the dependent variable, and facial expressiveness and embarrassment level as two independent variables. The results from the logistic regression analysis indicated a significant interaction between facial expressiveness and embarrassment level ($\chi^2 (1) = 3.93, p < .05$). The results showed that participants were more likely to engage in face-to-face interactions when the
group member always had same expressions, and tried to avoid face-to-face interactions when the group member had expressive expressions ($M = 55\%$ vs. 25$\%$). However, the difference was only significant when the anticipated embarrassment level was high ($M = 58\%$ vs. 12$\%$). When the anticipated embarrassment level was low, participants did not differ in their choice of face-to-face interactions ($M = 53\%$ vs. 38$\%$). The results are shown in figure 8.1.

**FIGURE 8.1**

CHOICE OF FACE-TO-FACE AS A FUNCTION OF EMBARRASSMENT AND FACIAL EXPRESSIVENESS IN EXPERIMENT 5

Choice of Face-to-Face
Discussion. This experiment showed that individuals actively sought out or avoided face-to-face interactions due to anticipated feedback during an interaction. Specifically, they were less likely to choose face-to-face interactions when they anticipated the embarrassment level to be high, and when their interactive partner’s face was expressive. This result suggested that the effect of face-to-face interactions came from anticipated facial feedback and facial expressiveness. If facial feedback was inexpressive, that is, the interactive partner’s expressions remained constant during the interaction, individuals were more likely to engage in a face-to-face interaction. However, participants tended to avoid face-to-face interactions in order to avoid negative facial feedback when the partner had a more expressive face.

The intensity of the anticipated emotion was shown to moderate the effect of facial expressiveness on choice of face-to-face interactions, over other types of interactions. The effect was stronger when the anticipated embarrassment was high and weaker when anticipated embarrassment was low.

In summary, this experiment investigated under what situations individuals strategically choose face-to-face interactions over impersonal ones. In this experiment, participants chose only between face-to-face interactions and email exchange. It will be interesting to explore how individuals choose between face-to-face interactions and other forms of interactions (phone conversation, text messages, etc.) in future research. It will also be interesting to test other boundary conditions of the effect.

This experiment focused on the anticipated emotion of embarrassment. It should be noted that the results were unique to this experiment and this specific emotion. Other emotions (e.g., sadness, anger, disappointment, etc.) could have differential effects on participants’ choice of face-to-face interactions over impersonal interactions.
CHAPTER 9
FURTHER EXPLORATION OF FACE-TO-FACE INTERACTIONS

This chapter documents additional data collected for the purpose of dissertation studies which help to further examine the effect of face-to-face interactions. The first set of data explores the effect of face-to-face interactions on individual decision problems other than compliance. The second set of data explores the effect of anticipated emotions on individual choice of face-to-face interactions over impersonal ones.

The Effect of Face-to-Face Interactions on Other Decisions

*Design and Procedure.* During experiment 1, the experimenter not only made a request for the participants to come back the following week, but also asked the participants a series of other questions. I created five conditions where the experimenter and the participant interacted in different ways:

1. Participants went into an empty room, read a written request, and answered the request via a paper-pencil questionnaire (written request group);

2. Participants read and answered the written request, and understood that the experimenter could read their identity information including the participant’s name, department, and course numbers (identity knowledge group);
(3) Participants read and answered a written request. A photo (a two-inch passport photo) of the experimenter’s face was printed on each page of the questionnaire (face on questionnaire group);

(4) The participant and the experimenter sat back-to-back in the experiment room, while the experimenter made the request by speaking to the participant (back-to-back group). To avoid the participant potentially feeling awkward about this method of interaction, the experiment explained to the participants beforehand that the study was designed as a “back-to-back” questioning session;

(5) The participant and the experimenter sat face-to-face in the experiment room, while the experimenter made the request by speaking to the participant (face-to-face group).

Money offered in the Ultimatum Game. During experiment 1, the experimenter and the participant played the Ultimatum Game together, via either questionnaire or conversation. The participant was asked to imagine that they needed to split $50 with the experimenter and was told the rules of the Ultimatum Game. The amount of money, out of $50, that was offered by the participant to the experimenter was used as the dependent variable.

For the Ultimatum Game question, I conducted a one-way ANOVA with the amount of money offered as the dependent variable and the different interaction conditions as the independent variable. The results showed a significant effect of the different interaction conditions \(F(4, 29) = 2.97, p < .03\). As predicted, the face-to-face group participants offered a higher amount of money \((M = $27)\) than the other four groups. The average amount of money offered in the rest of the four groups did not differ significantly \((p > .1)\). The results are plotted in figure 9.1.
Choice of Car Models. Another question used in experiment 1 was that participants were asked to choose between two cars: (1) A model representing a good brand but not comfortable to drive, and (2) A model without a good brand but very comfortable to drive. The percentage of participants choosing the first model was 21% for the written request group, 20% for the identity knowledge group, 25% for the face on questionnaire group, 27% for the back-to-back group, and 25% for the face-to-face group. There was no significant difference between participants’ choice of car models under the five different interaction conditions ($p > .1$).
Conclusion. This set of data showed that face-to-face interactions matter when participants were deciding how much money to offer the experimenter, but not when they were deciding which car they chose for themselves. This could be due to whether participants expected certain facial feedback from the experimenter when they made their choice. It was likely that participants chose to give the experimenter more money during face-to-face interactions than other interactions in order to avoid negative facial feedback. However, when selecting a car for themselves, the participants were not concerned with the potential feedback from the experimenter. Therefore, there was no difference between the face-to-face interactions and other forms of interaction groups with respect to this result. These results supported the contention that anticipation of facial feedback was the driver of the effect.

The Effect of Embarrassment Level and Type on Choice of Face-to-Face Interactions

Design and Procedure. An experiment was conducted to investigate whether the level and type of embarrassment affected individual choice of face-to-face interaction over impersonal interactions (e.g., an email exchange). I had a 2 (embarrassment type: embarrassing others vs. embarrassing self) by 2 (anticipated embarrassment level: high vs. low) between-subject design for the experiment.

One hundred and ten undergraduate students attended this study by completing paper-pencil questionnaires. For the embarrassing others condition, the participants were told to imagine that they were the leader of a study group. One of the group members was not in a position to finish his or her part of the work and the participant was obligated to talk to the group member regarding this issue. For the embarrassing self condition, the participants were told to imagine that
they were the group member responsible for doing the work and had to talk to their group leader about this situation. For the high embarrassment condition, the group member was assumed to have not done the work at all, and that the problem was serious. For the low embarrassment condition, the group member was assumed to have completed the work, but not very well, and that the problem was not too serious. Participants were then asked to choose whether they wanted to engage in a face-to-face conversation (vs. an email exchange) with the group member (or leader). Participants indicated their choice by circling either “face-to-face interactions” or “email conversation” on the questionnaire. The choice of a face-to-face interaction (over an email exchange) was used as the dependent variable.

*Choice of Face-to-Face Interactions.* I analyzed the result using logistic regression, with choice of face-to-face interaction as the dependent variable and embarrassment type and embarrassment level as two independent variables. The results indicated that there was a significant interaction between embarrassment type and expected embarrassment level ($\chi^2 (2) = 3.93, p < .05$). The results showed that when the expected embarrassment level was high, participants largely chose to engage in face-to-face interaction ($M = 64\%$ vs. $59\%$). However, when the potential embarrassment level was low, participants were much more likely to engage in face-to-face interactions, in the embarrassing self situation ($M = 80\%$) over the embarrass others situation ($M = 42\%, \chi^2 (2) = 5.92, p < .01$). The results are shown in figure 9.2.
Conclusion. This experiment showed that the type of embarrassment (embarrassing others vs. embarrassing self) affected individual choice of whether to engage in face-to-face interactions. The effect could be moderated by intensity of anticipated embarrassment. These result added to our understanding of how individuals strategically choose to engage in, or avoid, face-to-face interactions.

One interesting finding was that most participants chose to engage in face-to-face interactions when the scenario was potentially embarrassing for self, but not when the scenario was potentially embarrassing for others. It was likely that participants were more concerned about
the anticipated embarrassment from their partner’s face, but less concerned about the anticipated embarrassment on their own face during the face-to-face interactions.

In summary, this chapter showed that the effect of face-to-face interactions could be extended beyond individual choice of compliance. Face-to-face interactions mattered when participants intended to avoid anticipated negative feedback. Moreover, individuals strategically chose to engage in or avoid face-to-face interactions depending on the type and level of anticipated emotions. This chapter added into our understanding of the effect of face-to-face interactions, and further supported anticipation of facial feedback as driver of the effect.
CHAPTER 10

GENERAL DISCUSSION AND CONCLUSIONS

Summary of Research

Face-to-face interactions have been one of the most pervasive types of interpersonal interactions (Kendon et al. 1975). This type of interactions is also one of the central features in individual interactions, including sales, promotions, negotiations, and customer service. This thesis examines the role of face-to-face interactions in choice, in particular, the effect of face-to-face interactions on individual compliance with requests compared with other forms of requests making. I propose that when dealing with a face-to-face request, individuals expect facial feedback from their interactive partner in response to their decisions and behaviors. In anticipation that a particular facial feedback could be negative, individuals are less likely to reject a request in order to avoid experiencing such a feedback.

With five experiments (four lab experiments and one field experiment), I demonstrated that individuals were more likely to comply with requests under face-to-face interactions than other types of interactions due to anticipated facial feedback. I also showed that anticipated facial feedback, not necessarily real feedback, could be a driver of the effect of face-to-face interactions on individual choices. The effect of the thesis was moderated with situational factors such as sensitivity to face, the expressiveness, timeliness, and consistency of facial expressions. Individuals only considered the facial feedback from their interactive partner as diagnostic when
the feedback was expressive, timely, and consistent with expectations.

A summary of the experimental findings is listed in table 10.1.

**TABLE 10.1**

**A SUMMARY OF EXPERIMENTAL FINDINGS**

<table>
<thead>
<tr>
<th>No.</th>
<th>Design</th>
<th>Manipulation</th>
<th>Main Findings</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Lab experiment with between-subject design.</td>
<td>Five different interpersonal interaction types.</td>
<td>Participants were more likely to comply with requests during face-to-face interactions than other types requests. Results ruled out alternative explanations that face-to-face interactions could influence compliance by (1) identity effect, (2) effect of face, (3) the mere presence effect, and (4) voice feedback.</td>
</tr>
<tr>
<td>2</td>
<td>Field experiment with between-subject design in a beauty salon.</td>
<td>Promotion type (face-to-face vs. written request) × sensitivity (sensitivity to face vs. sensitivity to hair).</td>
<td>Customers were more likely to buy a membership card of the salon with a face-to-face promotion than a written promotion when they were sensitized to face. However, the difference decreased when the customer was more sensitive to hair instead of face.</td>
</tr>
<tr>
<td>3</td>
<td>Lab experiment with between-subject design.</td>
<td>Facial expressiveness (expressive vs. blank) × sensitivity (sensitivity to face vs. sensitivity to production).</td>
<td>Participants were more likely to comply with requests when anticipated facial feedback was expressive rather than inexpressive, particularly when they were more sensitive to the face of the interactive partner. This experiment indicated that anticipated facial feedback, rather than real facial feedback, was the underlying mechanism of the effect of face-to-face interactions.</td>
</tr>
<tr>
<td>4</td>
<td>Lab experiment with between-subject design.</td>
<td>Six different facial expressiveness conditions.</td>
<td>Participants were more likely to comply with requests only when facial feedback from their interactive partner was diagnostic (expressive, timely, and consistent). This experiment further supported that anticipated facial feedback, rather than real facial feedback, was the underlying mechanism of the effect of face-to-face interactions.</td>
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<tr>
<td>5</td>
<td>Lab experiment with between-subject design.</td>
<td>Facial expressiveness (expressive vs. same) × anticipated embarrassment (high vs. low).</td>
<td>Participants were more likely to avoid face-to-face interactions when anticipated facial feedback from their interactive partner was expressive than inexpressive when anticipated embarrassment is high. This difference was reduced when anticipated embarrassment was low. This experiment showed that individuals strategically chose to engage in or avoid face-to-face interactions depending on anticipated facial expressiveness and emotion intensity.</td>
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</table>
Relationship with Other Theories

My research on the effect of face-to-face interactions on compliance operates in a domain which is also served by other theories. In this section, I will discuss the relationship of the current research in the context of related theories.

*Impression Management Theory.* One reason why individuals comply with requests is that they seek to manage a favorable impression (Leary 1996). Some individual choice problems regarding compliance can be explained by a need for impressing others, i.e., impression management theory. Impression management is the process through which people try to control the impressions that other people form of them (Leary and Kowalski 1990), since such impressions have implications on how people perceive, evaluate, and treat each other. Impression management theory predicts that individuals often monitor and regulate the impressions others have of them and try to present a desirable image of themselves (Goffman 1959). Leary (1996) suggests that impression management (or self-presentation) is a central aspect of everyday interactions, since people’s outcome in life depends heavily on how they are perceived and evaluated by other people.

Individuals may easily engage in impression management during face-to-face interactions since they can directly monitor the impressions others form of them during such interactions. However, when it comes to individual compliance during face-to-face interactions, it seems there are more factors beyond the goal of presenting desirable images.
While individuals have a goal of impressing someone during any type of interpersonal interaction, face-to-face interactions provide a feedback mechanism that is more immediate and salient. Furthermore, one of the key elements during face-to-face interactions is the role of facial expressiveness. The current research suggests that facial expressiveness of a narrator in a video can make individuals more or less likely to comply with requests. When there is no active goal of managing self-impression, the current research shows that anticipation of facial feedback still drives individual choice of compliance.

Therefore, this thesis shows effects that cannot be completely accounted by impression management theory. However, it is possible that individuals still maintain an unconscious goal of impressing a partner from the video. How to integrate the effect of face-to-face interactions and impression management can be an interesting future research problem.

Social Norms. Norms have been conceptualized in different perspectives, and social norms are deemed as the behavioral expectations within a group or society (Cialdini and Trost 1998). Social norms have been defined by Axelrod (1984) as “the rules that a group uses for appropriate and inappropriate values, beliefs, attitudes and behaviors.” Social norms can be both explicit and implicit (Cialdini and Trost 1998). Failure to follow the norms can result in punishments, since social norms indicate established and approved ways of doing things (Cialdini and Trost 1998).

There are some similarities between social norms and individual compliance. First, the principle of “social validation” for compliance suggests that people frequently look to other individuals for cues on what they should think, feel, and do (Cialdini 2001). Social norms can be
regarded as part of the “social validation.” Second, from the information processing perspective, both compliance and social norms are concerned with how certain factors affect decision making (Cialdini and Trost 1998). Third, expectations play a crucial role in both social norms and the current research.

The current research differs from social norms in both mechanism and predictions. Expectations in the current study are expectations of facial feedback from an interactive partner, while expectations in social norms are expectations from a certain group or a society. In the current research, individuals display different likelihoods of compliance as a result of factors such as sensitivity to face and facial expressiveness. The literature on norms does not suggest how sensitivity to face or certain body parts affects behavioral expectations within a group. When there are no social norms for compliance, i.e., the requests are from videos rather than from an interpersonal conversation, the current research predicts that individuals still have a tendency to comply due to anticipated facial feedback.

Dual Process Models of Persuasion. Communication and persuasion literatures show that communication modality affects how a message is processed (Guadagno and Cialdini 2007). Dual process models of persuasion, such as the elaboration likelihood model (Petty and Cacioppo 1984) and the heuristic-systematic model (Chaiken 1980; Chaiken and Chen 1999), have differential predictions for persuasion on the basis of communication mode. Verbal persuasive communications, including face-to-face interactions, are more likely to be peripherally or heuristically processed. The studies from Chaiken and Eagly (1983) indicate that people process more communicator cues when the message is visual and verbal-based and fewer
cues when the message is written. Videotapes and audiotapes can help enhance communicator-related information (Chaiken and Eagly 1983).

The studies from the communication literature focus on how individuals interpret messages differently during face-to-face interactions, compared to other types of interactions (Chaiken and Eagly 1983; Guadagno and Cialdini 2007). This thesis looks at face-to-face interactions directly to explore their effect on individual choice, particularly the choice of compliance. Instead of focusing on the information processing perspective, the current research focuses on anticipated facial feedback and facial expressiveness during face-to-face interactions. The current research also shows that without actual face-to-face interactions, anticipation of facial feedback can still prompt individuals to comply with a request as long as the expected facial feedback is expressive, timely, and consistent. These findings add important insights to the communication literature and dual process models of persuasion.

Theoretical Contributions

This thesis provides a new understanding of how face-to-face interactions and facial expressiveness impact individual choice. In contrast to previous research, I examine the feedback mechanism that such interactions create, and the role of facial expressiveness. By providing an account in which the anticipation of feedback plays a role, this research provides a way of extending “face effects” to faceless transactions. Moreover, I identify and test the effect of three dimensions of facial expressiveness on individual choice, thereby adding to marketing literature, compliance literature, and communication literature.
Building on previous literature on compliance, this research furthers our understanding of factors which influence compliance and persuasion. With five experiments, I show that individuals are more likely to comply with requests during face-to-face interactions than in situations without face-to-face interactions. I also examine the boundary conditions and show that the moderation of sensitivity-to-face, expressiveness, timeliness, and consistency of facial feedback can strengthen or weaken the effect. I identify anticipation of facial feedback as one important driver of individual compliance.

Classical compliance research has indicated that group pressure can influence individual compliance, such as size of the group disagreeing with the individual (Asch 1951) and reactions from confederates (Milgram 1964, 1965). This research suggests that anticipated or actual facial feedback during such group contact could be an underlying mechanism for the effect of group pressure. When the size and reactions of the group members increase, facial feedback from those members will also increase, leading to a higher likelihood of individual compliance.

This thesis also sheds light on the effect of anticipated facial feedback on individual choice of face-to-face interaction over impersonal interactions (e.g., an email exchange). The experimental findings show that individuals can utilize their prediction of facial feedback to strategically choose to engage in or avoid face-to-face interactions. Both anticipated facial feedback and intensity of emotions affect the strategic choice of face-to-face interactions over impersonal ones.

In this thesis, experiments are conducted with participants from both an Asian City (experiment 2) and a North American city (experiments 1, 3, 4 and 5). This seems to indicate that the effect of face-to-face interactions is a universal one across different cultures. On the other hand, there can be individual or group differences of the effect across different personalities,
cultures, races, genders, and ages, etc. For instance, research by Heine and Lehman (1997) suggests that in collectivistic cultures individuals are more likely to behave inconsistently with respect to their personal choices. Individualistic cultures, on the other hand, drive their people to behave consistently with respect to their personal choices (Petrova et al. 2007). Therefore, the effect of face-to-face interactions on compliance can be stronger in collectivistic cultures than in individualistic cultures. Future studies will be interesting in exploring the individual and group differences of the effect.

Managerial Implications

The current research has managerial implications in personal selling, customer service, employee training, and online transactions.

Since face-to-face situations are often central to interactions with individuals, my research provides great implications for marketing managers, particularly those in the service industries and departments. Voice training has a long history in customer service and telemarketing. Companies help to modulate the voices of their staff in pacing, emphasis, etc. to generate a better impact on their customers. In learning the role of facial expressiveness in compliance, managers could provide effective facial expressiveness training for their service and sales staff. Training for facial expressions to become more demonstrative, timely, and consistent could help increase the likelihood of customer compliance. Moreover, instead of asking the salespeople and service staff to always keep smiling to customers, managers can train them to have a more expressive face. Without being rude to customers, employees with both positive and
negative facial expressions are likely to get more customers to comply with their requests of sales or other nature. This can enhance the performances for marketers in both the personal selling and the customer service settings.

The current research also enlightens marketers on when to engage customers in face-to-face interactions and personal selling, and when not to. Face-to-face interactions and personal selling work most effectively when customers receive expressive, timely, and consistent facial feedback from staff or salespeople. However, face-to-face interactions and personal selling are best avoided when selling potentially embarrassing products such as cigarettes, alcohol, condoms, sex toys, etc. In these cases the customers are likely to anticipate negative facial feedback from salespeople during face-to-face interactions, and potentially give up on the purchase.

The effectiveness of face-to-face interactions also suggests that companies could add face-to-face elements to their largely faceless telephone transactions and online purchases. In effect, many companies (e.g., Cisco, IKEA, and Continental airlines) note the significance of face-to-face interactions with the addition of virtual agents to their websites. Virtual agents are online customer service representatives with human-like appearances and responses (Wooters and Marcu 2009). I suggest that in order to create an effective interaction between the virtual agent and the individual over the Internet, the virtual agents need to have expressive faces which can respond both timely and consistently to the individual.
Limitations and Future Research

It is not clear which types of negative facial expressions (e.g., disgust, sadness, or anger), are driving the effect in the research. It is also not clear why individuals feel the need to avoid certain negative expressions. In experiment 1 the participants were notified that there was no additional reward or penalty whether they complied with the request or not. In experiments 3 and 4, participants watched videos as simulations of face-to-face interactions rather than experiencing the real interactions. The narrator in the video did not see the choices of the participants during the experiment session. There was no indication that the narrator would act upon participants’ choices. These seem to indicate that participants were avoiding negative facial expressions themselves rather than the consequences indicated by the expressions (e.g., the experimenter’s ability to punish dissenters). More direct evidences in future studies are necessary to clarify these questions.

In my thesis, I mainly use negative feedback and emotions as the driver of the effect since negative emotions and feedback are often more impactful and motivating than positive ones (Baumeister et al. 2001). However, positive facial feedback and its effect are not explored. Future studies should examine the effect of positive feedback in motivating the effect of face-to-face interactions on individual compliance.

Due to lack of mediation tests in the experiments, the process evidence is somewhat indirect in the thesis (Baron and Kenny 1986). Future research should include a more standard process analysis by mediation tests and direct measurement of anticipated feedback.

My thesis offers a first step in examining the intriguing role of face-to-face interactions
and facial expressiveness on individual choice. The current research, while confined by certain limitations, also opens doors to future research opportunities.

One research direction could be in the strategic choice of face-to-face interactions. In knowing that anticipated facial feedback influences individuals’ choices, when will they try to engage in, or avoid, a face-to-face interaction with an interactive partner? I have completed two experiments in this area and showed that participants could actively seek after or avoid face-to-face interactions due to anticipated facial feedback. They were less likely to choose face-to-face interactions when anticipating embarrassment from the partner’s face, particularly when their potential interactive partner’s face is expressive rather than blank.

Another ongoing experiment involves the addition of thought protocols from the participants during, and after, face-to-face interactions. This experiment could help to define the underlying process of the effect, as well as discover other important elements in such interactions.

Future studies could also investigate other boundary conditions for the effect of face-to-face interactions on individual choices. For instance, the number of individuals present during a face-to-face interaction could change the dynamics and anticipated feedback from such interactions. How individuals make decisions with a larger number of interaction partners during face-to-face contact would be an interesting research area. The current studies have only explored situations where the decision-maker and the interactive partner have no prior relationship. Interpersonal relationships should moderate the effect of face-to-face interactions. Everything else held constant, I anticipate that there would be different facial feedback from a family member versus, a friend, an adversary, or a stranger.
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