

**CULTURAL DIFFERENCES IN THE RESPONSE TO  
FEEDBACK IN FRIENDSHIPS:  
EXPLORING THE MECHANISMS OF CONNECTEDNESS,  
AGREEMENT/ AWARENESS, AND IMPROVABILITY**

by

Jeong Min Lee

A dissertation submitted to the Faculty of the University of Delaware in partial fulfillment of the requirements for the degree of Doctor of Philosophy in Psychology

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## **ABSTRACT**

Individuals use cultural blueprints to guide their interactions and experiences within cultural contexts; therefore, cultural contexts may foster the development of different practices involving friendship interactions. In this dissertation, I investigated cultural differences in the exchange of negative and positive feedback in everyday friendship interactions, and tested the mechanisms for the effect. Replicating the past preliminary studies, I found that across the three dissertation studies, Koreans and Chinese were more tolerant toward negative feedback compared to European-Americans. Study 4 found that priming one of the proposed mechanisms of this cultural difference, improbability mindset, did not affect participants' responses to feedback. Study 5 found that, while imagining being part of a low relational mobility campus organization did not lead to a different pattern of responses to negative and positive feedback than being part of a high relational mobility organization, people in the low relational mobility group reported feeling closer and greater positive emotions to receiving feedback in general. Finally Study 6 looked at pairs of real friends exchanging positive and negative feedback. A test of statistical mediation suggested that even after controlling for baseline levels of connectedness and awareness, the level of connectedness experienced after the feedback was the probable mediator of the cultural differences in the response to feedback.

## **Chapter 1**

### **INTRODUCTION**

You run into Sophia, whom you have not seen in a few weeks, in the hallway. She notices that you are looking a little tired, and as you come closer, Sophia says, “How is everything going? You look kind of tired and pale today.”

Will you be offended, or will you feel cared for and perhaps a little grateful that she noticed? Your response to Sophia’s comment will probably depend on a variety of factors, such as how close you are, how much you agree with the comment, and how you interpret Sophia’s intentions.

Such friendship patterns are culture-specific because cultural contexts foster different types of cultural norms and practices for friends (e.g., Adams & Plaut, 2003; Gudykunst, 1983; 1985). We use cultural blueprints to guide our interactions and experiences, and such blueprints may offer different scripts for everyday verbal exchanges, especially comments and feedback exchanged with close friends.

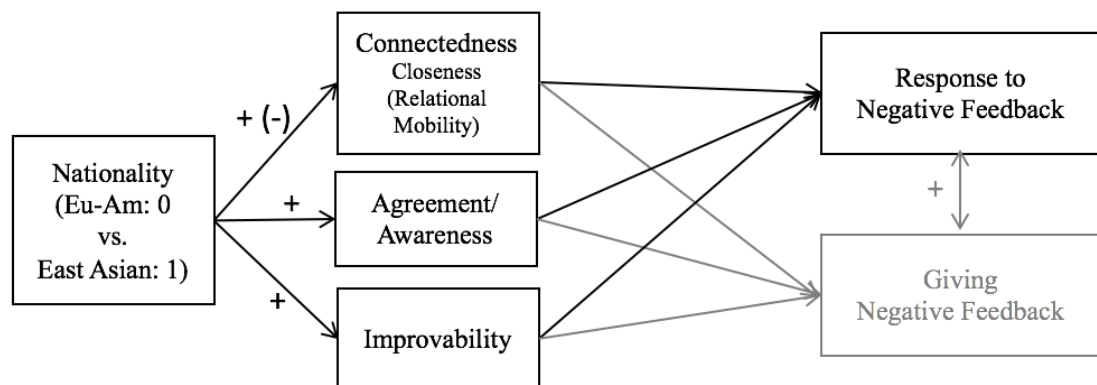
In Western or European-American cultural contexts, unsolicited observations like Sophia’s may be insulting or threatening, but in East Asian or Korean cultural contexts, the same statements may be seen as sensitive, supportive, and even helpful. I argue that in East Asian cultural contexts, people will be more receptive of and respond more favorably to negative feedback from close friends, and I offer three potential explanations.

Research on support, advice, teasing, and nagging suggest that cultures differ in how people interact and communicate in close relationships. For example, when teased with negative feedback, Asian-Americans, compared to European-Americans, attribute greater affiliative motivations to the teaser, and also rate that the teasing experience makes them feel happier and closer to the teaser (Campos, Keltner, Beck, Gonzaga, & John, 2007). Nagging or controlling behavior by a parent also seems to be linked to more positive consequences for East Asian than European-American children (Chao, 1994; Chao & Tseng, 2002; but see Pomerantz & Wang, 2008). Nagging may not necessarily strain the relationship because East Asian children feel greater levels of closeness or interdependence with their parents (Fu & Markus, 2014).

While past work has studied cultural differences in behaviors such as teasing, support-giving in friends (e.g., H. S. Kim, Sherman, & Taylor, 2008), and nagging and controlling parents, there have been no studies examining feedback exchanged in an everyday context among friends, such as pointing out a friend's tired face, weight gain, or poor study habits. I predicted that these types of everyday feedback will be received differently in different cultural contexts. Previous studies (Lee & Morling, 2016, see Preliminary Studies) have documented this cultural difference by consistently finding that negative feedback exchanged in daily interactions among close friends were received more favorably in East Asian than Western cultural contexts. I also proposed and tested potential mediators of this cultural difference (see Figure 1). I predicted that East Asians would have relatively more positive reactions to negative feedback from friends because East Asian cultural contexts may foster higher

levels of connectedness in close friendships (e.g., Wheeler, Reis, & Bond, 1989), East Asian contexts encourage heightened awareness of how others view them (Cohen & Gunz, 2002; Heine, Takemoto, Moskaleiko, Laseleta, & Henrich, 2008), and East Asians hold more beliefs and motivations that qualities can be improved on with effort (Heine et al., 2001b). I proposed that these mechanisms are functional universals. That is, these mechanisms probably play the same function across all cultural contexts, but are accessible to different degrees across cultural contexts (Norenzayan & Heine, 2005).

Figure 1 Model of Cultural Differences in Response to Negative Feedback



### Culture and Connectedness

Connectedness can be operationalized into an interpersonal level of connectedness, such as feelings of closeness, or a sociocultural level of connectedness, which are levels of connectedness afforded by the cultural context, such as relational mobility. Research across a variety of studies looking at interpersonal and

sociocultural levels show that East Asian friendships are characterized by greater levels of connectedness and more connected, “stickier” ties. Such connectedness might lead to more positive responses to negative feedback because people feel that the relationship is secure enough to express and accept negative views.

**Indigenous concepts.** First, indigenous East Asian concepts such as *jeong* suggest that East Asian cultural contexts foster higher levels of connectedness than Western cultural contexts. *Jeong* in Korean culture is a strong attachment or bond manifested as unconditional loyalty and commitment, often without reason (Chung & Cho, 2001, 2006). In contrast to love, *jeong* is not an emotion that is merely felt; it is a complex feeling that permeates the whole individual. Furthermore, *jeong* not only resides within oneself (i.e., I am a person with *jeong*), but also resides between two people (i.e., There is “sticky” *jeong* between us), and results in a greater sense of “we” and a reduced sense of “I” (Chung & Cho, 2001, 2006).

The Japanese interpersonal phenomenon of *amae*, or requesting favors with the expectation that they will be met, can also signify high levels of intimacy and connectedness (Niiya, Ellsworth, & Yamaguchi, 2006; Niiya & Harihara, 2012). Japanese participants who read vignettes about a hypothetical close friend engaging in *amae* felt closer to the friend than participants who read the non-*amae* condition. They also were more likely to interpret this request for help as an indication of how close the friend felt towards them (Niiya et al., 2006) and feelings of closeness toward the requester mediated the relationship between the magnitude of the favor and positive emotions for Japanese participants (Niiya & Ellsworth, 2012). This was also true of

self-generated situations in which Japanese participants recalled being the engager and recipient of *amae* (Niiya & Harihara, 2012). This suggests that at least for people with positive attitudes towards *amae*, *amae* is used as an interpersonal tool to signal connectedness with others.

Mutually beneficial relationships in Western cultural contexts have often been studied in the communal/ exchange relationship tradition (e.g., Clark & Mills, 1979). Relationships with communal norms, such as family, close friends, and romantic partners, have a mutual concern for each other's welfare, and give benefits based on need without any debt. On the other hand, relationships with exchange norms, such as business colleagues or acquaintances, give benefits with the expectation of receiving benefits in return, regardless of need (Clark & Mills, 1979). Although communal norms have traditionally been linked to close relationships and exchange norms have been linked to distant relationships, recent studies have suggested that cultural contexts may differ in the norms preferred in relationships. When asked to think about their closest friend or read vignettes about friends, Indian (South Asian cultural contexts are relatively collectivistic; Hofstede, 2001) participants placed greater emphasis on communal norms than Americans, while American participants had a greater emphasis on exchange norms than Indians (Miller et al., 2014). Furthermore, *amae* can be differentiated from communal norms by its concern for reciprocation and record keeping (intimacy and trust in exchange for helping) and from simple exchange relationships (Clark & Mills, 1979) or equality matching relationships (Fiske, 1992) by the presence of an inappropriate request that cannot be easily matched or

reciprocated (Niiya et al., 2006). Complex indigenous concepts of *jeong* and *amae* cannot easily be matched onto categorizations of Western relationships.

**Theories about the self in relation to others.** Broadly accepted theoretical approaches suggest that East Asian friendships have greater degrees of connectedness and may be characterized by closer, more permanent ties. Theoretically, based on Triandis' (1995) conceptualization of individualism and collectivism, people from collectivistic cultural contexts should have closer relationships with their ingroup members than people from individualistic cultural contexts. Collectivistic cultural contexts emphasize strong ingroup identities, and therefore encourage cultural members to see ingroups as an extension of themselves. This is also supported by Markus and Kitayama's (1991) conceptualization of an interdependent self-view, in which one's ingroup not only overlaps with oneself, but there is a strong border separating one's ingroup from an outgroup. In contrast, independent self-views, enabled by Western cultural contexts, have fluidity between one's ingroup and outgroup, and individuals are encouraged to develop and maintain an identity separate from one's ingroup. Their personal identity moves with them from group to group, but a healthy individualist's identity is not supposed to become "overidentified" with any group. Supporting this theory, Chinese rated themselves as feeling greater overlap with their close friends than Canadians using a modified version of the Inclusion of Others in the Self (IOS; Aron, Aron, & Smollan, 1992) scale (H. Z. Li, 2002; H. Z. Li, Zhang, Bhatt, & Yum, 2006).



Studies examining friendship behaviors also support these perspectives. In comparing Korean, Indonesian (collectivistic comparison group), and American participants, Koreans also reported friendship behaviors consistent with Markus and Kitayama's (1991) interdependent view of the self and Triandis' (1995) collectivism. Compared to Americans and Indonesians, Koreans preferred having exclusive friendships (e.g., "I would rather spend time alone with my friend than be with him/her in a group"), and reported interacting with a smaller group of people as their ingroup. They also had stronger negative reactions when these exclusivity norms were violated (French, Bae, Pidada, & Lee, 2006). Koreans also reported knowing their closest friends for longer periods of time and having more personal disclosure with close friends (French et al., 2006). Similarly, Hong Kong Chinese students, compared to American students, reported having interactions with fewer people, but had a greater number of interactions with these small networks and reported higher levels of intimacy (assessed by response scale ranging from superficial to meaningful) in these interactions (Wheeler, Reis, & Bond, 1989).

**Relational mobility.** A concept examined in European-American and East Asian cultural contexts (e.g., Japan) called relational mobility supports the idea that East Asian cultural contexts afford more permanent ties than European-American contexts. Relational mobility is a socio-ecological approach to examining differences in a variety of psychological and behavioral constructs, and is defined as "the amount of opportunities people have in a given society or social context to select new relationship partners when necessary (Yuki et al., 2007, p. 3)". It was initially

theorized that cultural differences in relational mobility could explain differences between generalized trust in Japan and the U.S. (Yamagishi & Yamagishi, 1994). That is, the U.S. being a society with high relational mobility could explain why Americans report and perhaps need to have a greater belief that people are generally trustworthy. Japan, on the other hand, does not need general trust to such extent because it is a low relational mobility society and relationships do not shift as much (Yamagishi & Yamagishi, 1994).

The 12-item relational mobility scale assesses people's perceptions of the three components of relational mobility in their contexts: the amount of opportunities that people have to meet new people in their context, opportunities for people have to choose their own relationships, and the tendency for people to be bound (not be able to leave) to their relationships (Yuki et al., 2007).

Across multiple studies, Japanese self-reported perceiving lower relational mobility in their contexts, compared to Americans (Yuki et al., 2007). North Americans contexts also show behaviors tied to higher relational mobility, such as belonging to groups with more flexible boundaries, compared to East Asian contexts (see Schug, Yuki, Horikawa, & Takemura, 2009 for review). Furthermore, relational mobility explained cultural differences in a variety of friendship behaviors. A context with high relational mobility would enable behaviors that would allow people to form and commit themselves to new relationships. For example, it explained why Americans perceived greater similarity with their friends (Schug, Yuki, & Maddux, 2010) and reported disclosing greater amounts of personal information to their close

friends (Schug et al., 2009) than Japanese. In a recent study, three distinct factors of social stickiness (bounded-ness of a relationship/ group), difficulty of entry (presence or lack of opportunities to create form relationships), and lack of freedom to choose were identified (San Martin, 2014). San Martin argued that the social stickiness factor, in particular, was linked to collectivism and awareness of others in their context (San Martin, 2014).

Although not directly examining East Asian cultural contexts, research on independent (American) and interdependent (West African) constructions of the self and relationships also provides insight into how close, more permanent ties could be linked to the exchange of negative feedback. Independent cultural contexts see relationships as a coming-together of two inherently separate individuals, while relationships are seen as a connection between two inherently linked individuals in interdependent cultural contexts (Adams & Plaut, 2003; Adams, Anderson, & Adonu, 2004). Adams and colleagues argue that the desire for, as well as the function of closeness and intimacy in close relationships is universal (functional universal), but specific definitions of these constructs or how they are practiced are culture or context-specific (Adams et al., 2004; Pike, 1954). Compared to interdependent cultural contexts that enable close relationships that one is “stuck with,” independent cultural contexts may facilitate more direct expressions of closeness, such as self-disclosure, to help build intimacy and create additional close relationships (Adams et al., 2004). Furthermore, cultural contexts differ in the defining features of closeness in friendship. Participants in North American settings were more likely to say that

sharing personal feelings was important as a friend than participants in West African settings (52% of participants vs. 32%), whereas participants in West African settings were more likely than participants in North American settings to state that instrumental help, including giving advice, was integral to friendship closeness (Adams & Plaut, 2003).

In sum, connectedness with one's close others in East Asian cultural contexts will be greater than those of Western cultural contexts. Evidence from indigenous concepts, broadly accepted theoretical approaches to understanding the relation between self and others, and conceptualizations of socio-ecological constructions of relationships, can help explain why negative feedback may be exchanged at a lower rate and seen as detrimental to friendships in cultural contexts with independent constructions (Western) compared to contexts with interdependent constructions (East Asian) of the self.

Contexts with lower levels of connectedness (high relational mobility) that are less socially sticky and enable greater opportunities for new relationships may have relatively more fragile friendships than contexts with greater levels of connectedness (low relational mobility), in which relationships are relatively more stable and more socially sticky. If a person in a high relational mobility context does not like the feedback they receive from a friend, they can respond to it negatively (e.g., anger) and can simply leave that relationship for a new one. This may not be the case in a low relational mobility context—negative feedback between friends may be received more favorably (e.g., with improvement motivations and interpreting it as good intentions)

because people cannot easily leave their relationships. Negative feedback can also be seen as less threatening in a low relational mobility context because it is less likely to be a sign of rejection or dismissal in a tightly bound relationship.

### **Culture and Agreement/ Awareness**

East Asian cultural contexts may foster differing degrees of self- and other-awareness compared to Western cultural contexts. I propose that when people are aware of others' intentions and what others are thinking about them, especially when people are aware of others' sensitivities, negative feedback will be less of a surprise, and may also be delivered more carefully.

Research has shown that East Asians tend to have heightened awareness of others and focus on how they are viewed by others more than North Americans. In East Asian cultural contexts, people habitually attend to how others view them as if through a mirror (Heine et al., 2008). For example, when asked to recall memories in which they were at the center of attention, such as memories of "giving an individual public presentation (taken from Nigro & Neisser, 1983, p. 6)," Asian-Canadian participants reported greater third-person than first-person memories, compared to Canadian participants (Cohen & Gunz, 2002). East Asian participants' private evaluations of their task performance also differed based on their score that they thought was publicly known to others, while American participants' private evaluations of themselves were relatively unaffected by their score that they thought were shown to others (Y. H. Kim, Cohen, & Au, 2010). When people are used to

seeing themselves from the perspective of others, negative feedback from friends may be less surprising, and thus have reduced negative impact. Another manifestation of awareness is through dignity vs. face culture. Western cultural contexts, in general, carry norms of dignity culture, in which an individual's personal worth is not determined by others and cannot be taken away (Y. H. Kim et al., 2010). In contrast, East Asian cultural contexts follow norms of face cultures in which face is socially determined and an individual must work to gain and maintain face by meeting social standards (e.g., Heine, 2005; Y.H. Kim et al., 2010).

I speculate that when people are chronically vigilant to how others see them, they may receive negative feedback more positively because they are already aware of their flaws. In fact, East Asians wrote more negative than positive self-descriptions compared to European-Americans (Eu-Ams), suggesting that East Asians may already be aware of their weaknesses and are sensitive towards how others see them in given social situations (Kanagawa, Cross, & Markus, 2001).

Attunement to others also suggests that feedback can be delivered with more or less skill and sensitivity. East Asian, compared to Western, cultural contexts, elaborate the value of preserving harmony in relationships (Markus & Kitayama, 1991) and being sensitive to others. For example, Korean *noon-chi* is “a communicative strategy that is used when one needs to figure out the intention, desire, mood, and attitude of another person without resorting to the exchange of explicit verbal messages” (Choi & Choi, 1990, cf. Lim & Choi, 1996). *Noon-chi* is similar to the Western strategy of reading between the lines or the Japanese phrase *sasshi*, which means guessing what

someone means (Nishida, 1996) and *kuuki yomeru hito*, a (positively evaluated) person who can “read the air.” Having *noon-chi* means that people are careful not to say things that may hurt another person’s feelings or damage face (Lim & Choi, 1996), as well as knowing what kind of feedback their partner is open to receiving.

In sum, I speculated that if East Asians attend more to the perspectives of others, they may also be more likely to be less surprised by feedback or be more understanding of feedback from their close friends. Additionally, accepting negative feedback may be easier when it is delivered sensitively and matches one’s expectations (Swann & Read, 1981).

### **Culture and Improvability**

East Asian cultural contexts foster greater beliefs about improvability compared to Western cultural contexts. I predict that when people are motivated to work on their personal shortcomings or hold implicit beliefs that things can be improved on with effort, negative feedback may be responded to more favorably.

Support for this part of the model comes from research regarding motivations for self-improvement and implicit beliefs about malleability. Positive self-regard, or self-enhancement, refers to the tendency to emphasize positive aspects, while downplaying negative aspects of oneself (e.g., Sedikides & Strube, 1997). While the desire to be seen as a “good” cultural member is thought to be universal (e.g., Heine et al., 1999), research suggests that North Americans are especially motivated by enhancing the self, when compared to East Asians. (Heine et al., 1999; but see

Sedikides, Gaertner, & Toguchi, 2003). Cultural differences in friendship feedback may be linked to cultural differences in self-enhancement and self-improvement, as described next.

**Self-improvement motivations.** Heine and colleagues (1999; 2001b) argue that people socialized in East Asian cultural contexts are not as motivated to seek out self-esteem, but are rather characterized with a self-critical focus that seeks out “what is not yet good enough (Heine, 2005, p 97)”. It seems that East Asians, particularly Japanese do not value self-esteem to as great of an extent as Westerners. For example, some research shows that Japanese score lower on measures of self-esteem than North Americans (Diener & Diener, 1995; Heine et al., 1999) and Japanese do not seem to be as prone to self-enhancing biases as European Americans (e.g., Markus & Kitayama, 1991). Japanese in fact, even seem to show “reverse compensatory self-enhancement”, in which they adopted an overall critical, self-improving attitude after failing at one task, rather than boosting their self-esteem by thinking about other positive aspects about themselves. After receiving failure feedback on a creativity task, Japanese participants rated themselves as ranking lower on other unrelated traits, while Canadians displayed self-enhancement by rating themselves as being ranking higher than their peers on other traits, regardless of if they received failure or success feedback (Heine, Kitayama, & Lehman, 2001a). In another study, participants were told that the goal of the study was to make a judgment on how their performance on a task compared to the average student at their school. They were given feedback on their score, as well as the average student’s score after each trial, and they could stop



the task once they had enough information to make their decision. Overall, Japanese were more likely to make self-critical judgments about themselves, even when they had received feedback that they were better than average, whereas Canadians were more likely to make self-enhancing judgments about themselves in general (Heine, Takata, & Lehman, 2000). These divergent ratings of oneself were also linked to behavior. Participants were either given success or failure feedback on a first task and then were given an opportunity to complete a follow-up task. American participants who were given failure feedback persisted for less time on the second task than Americans who were given success feedback, while Japanese participants showed the opposite pattern of persisting for a longer period of time when they received failure feedback on the first task (Heine et al., 2001b). In addition, Japanese participants rated that the task was more important and diagnostic of their abilities after receiving failure (vs. success) feedback, while American participants showed the opposite pattern (Heine et al., 2001b).

Based on the results of these studies, Heine and colleagues (1999, 2001b) conclude that these self-critical judgments about oneself are not necessarily indicative of East Asians having lower levels of self-esteem, but rather suggestive that people from East Asian cultural contexts pay attention to and are highly vigilant of negative aspects of themselves with the goal to improve upon these qualities. Therefore, cultural differences on the emphasis of self-improvement suggest that individuals in East Asian cultural contexts may not necessarily dislike or disengage from negative feedback from close others, but rather appreciate them as a reminder or first notice that

there are things that could be improved upon. As shown by East Asian participants rating the failed task as more important than the success task (Heine et al., 2001b), negative information about oneself can be interpreted a valuable source of information that should not be avoided. Accepting negative feedback may be interpreted as an ill-suited strategy in Western cultural contexts that emphasize boosting one's self-esteem, but this practice may ultimately lead to positive outcomes in East Asian cultural contexts (Heine et al., 2001a).

**Implicit self-theories.** Another factor to consider is whether people view attributes about themselves as fixed and stable, or malleable and susceptible to change. This line of research originally comes from studies of American students about intelligence in academic settings. People implicitly hold conceptions about the nature of intelligence on whether it is increasable and controllable, or is fixed and remains stable throughout a lifetime (Dweck & Leggett, 1988). These beliefs in turn, are related to types of goals that people pursue. For example, students who indicated that intelligence (or "smartness") was something that could be increased, were more likely to hold (Bandura & Dweck, 1985, cf. Dweck & Leggett, 1988), as well as prefer (Dweck & Bempechat, 1983) goals of pursuing something new and different, compared to students who indicated that intelligence was something that stays the same.

The implicit theory of self has been extended beyond intelligence to a broader sense; people with an entity view of the self believe that even personality traits and qualities are inborn and a part of the self that cannot be changed. For example, some

people believe that they are “not a sports person” and were just not born with athletic abilities. On the other hand, people with an incremental view of the self believe that qualities and traits are malleable and can be improved with effort. As an example, some people believe that if they practice hard enough, they can improve on their athleticism (Dweck, Hong, & Chiu, 1993).

Some research suggests that there may not be cultural differences in entity and incremental theorists, but only individual differences. American and Hong Kong Chinese did not differ on their endorsement of self-report items measuring an entity theory of moral character, such as “Whether a person is responsible and sincere or not is deeply ingrained in their personality. It cannot be changed very much” (Chiu, Hong, & Dweck, 1997). However, this study did not assess an incremental view separately, based on the assumption that people who endorsed the entity items were the same people who disagreed with the incremental items. Examining beliefs about academic achievement in school-age children, parents of children, and teachers, shows that people from East Asian cultural contexts (Japan, China) were more likely than people from Norm American to cite effort and hard work versus ability (Holloway, 1988; Stevenson, Chen, & Lee, 1993). Furthermore, behavioral research suggests that there are indeed cultural variations in which view of the self is predominant. People from East Asian cultures are more practiced in holding incremental views of themselves while people from Western cultures seem to have more entity views of themselves. For example, Japanese who failed on a task persisted on a subsequent task more than those who had succeeded, while Canadians persisted on a task for longer when they

succeeded (Heine et al., 2001b). Paralleling these results Chinese children performed better than American children on a second task after receiving failure feedback on the first task, and actual negative comments from their mothers predicted this improvement (Ng, Pomerantz, & Lam, 2007). This suggests that East Asians thought they could improve their performance through effort and working harder, while Westerners focused on the task only when they thought it was something they were good at because they believe efforts would not necessarily help them. Along with a self-critical and self-improvement focus, if East Asians believe that their attributes are malleable, they may be more likely to be vigilant towards and even appreciate negative feedback from others.

## **Chapter 2**

### **PRELIMINARY STUDIES**

#### **Study 1: Responses to Feedback from a Close Friend**

Study 1 examined cultural differences in response to negative and positive feedback from close friends by collecting actual examples of such feedback from students in Korea and the U.S. I predicted that Koreans would recall relatively less negative and more positive responses than Eu-Ams to receiving negative feedback from their friends, while Eu-Ams would have more positive responses than Koreans to receiving positive feedback from their friends. I also predicted that Koreans, compared to Eu-Ams, would feel higher levels of connectedness and agreement/awareness toward the negative feedback, as well as perceive greater helpful intentions and social sensitivity of their friends. Finally, I used a correlational model to test the extent to which the two mediators (connectedness, agreement/ awareness) explain cultural differences in responses to negative feedback.

The results from Study 1 supported the hypothesis that although students from the U.S. and Korea reported receiving similar types of negative and positive feedback from friends, their responses to the feedback would differ. While overall, people preferred positive feedback to negative, Korean responses can be characterized as relatively more receptive to negative feedback from their close friends, compared to Eu-Ams. Open-ended responses indicated that Koreans responded with less rejecting responses toward negative feedback, such as feeling upset and defensive towards, or

ignoring the feedback from their friend. Korean ratings of close-ended responses to negative feedback were also more similar to positive feedback, compared to Eu-Ams. In addition, results showed correlational support for connectedness (feelings of closeness) as a mechanism for cultural differences in response to negative feedback. Closeness mediated the cultural differences in response to negative feedback, with Koreans reporting stronger feelings of closeness toward the feedback giver than Eu-Ams after receiving negative feedback, and these increased feelings of closeness were associated with less negative and more positive emotional responses to negative feedback. Counter to our predictions, results for agreement/awareness did not support mediation.

### **Study 2: Manipulating the Connectedness Mediator**

The purpose of the Study 2 was to examine the proposed mechanism of connectedness in cultural responses to negative feedback. Correlational Study 1 found that connectedness statistically mediated cultural differences in emotional response to negative feedback. In Study 2, connectedness was manipulated by varying the level of relational closeness with the feedback-giver using vignettes. Manipulating levels of relational closeness implies that I conceive of the mechanism of connectedness as a functional universal—that is, when the feedback is from a close relationship partner, there may be no cultural differences in response to the feedback.

The results of Study 2 replicated the finding that students from the U.S. responded more negatively to criticism from friends, compared to students from

Korea. Koreans did not feel more connected after negative feedback, as found in Study 1, but this may have been due to the way I assessed *changes* in feelings of closeness as a DV, which may have been confusing for participants. An examination of relational closeness as a potential mechanism for explaining cultural responses to feedback showed that regardless of nationality, people responded more favorably to critical feedback from close friends, compared to that from acquaintances and strangers. Negative feedback from a close friend seems to be less upsetting and is perceived as more helpful than feedback from an acquaintance or stranger. Our prediction that relational closeness would function the same in both cultural groups was also mostly supported.

### **Study 3: Manipulating the Agreement Mediator**

In Study 3, I aimed to replicate the same cultural effect and experimentally test our second proposed mechanism: agreement/awareness. That is, I expected that when the receiver of feedback personally agreed with the content of the negative feedback, they would respond more favorably to it than negative feedback they did not agree with. Furthermore, I used Study 3 to probe cultural differences in the frequency of receiving such feedback. I asked people to rate how often they received feedback similar to that in the vignettes. Because, according to some theorists, culture should also be measured through consensus judgments, (Chiu, Gelfand, Yamagishi, Shteynberg, & Wan, 2010; Wan, Torelli, & Chiu, 2010; Zou, Tam, Morris, Lee, Lau, & Chiu, 2009), I also examined perceived norms via their estimated likelihood that

this type of feedback would occur in their own cultural context. On both measures (personal frequency and perceived norms) I predicted that Koreans would report higher frequencies of negative feedback in their cultural contexts compared to Eu-Ams.

Study 3 again replicated that overall, students from Korea report greater levels of connectedness, and that they respond to critical vignettes with relatively less negative and more positive emotional responses compared to students in the U.S. As predicted, Koreans also reported that negative feedback would happen more frequently, whether to them personally or to people in their own culture. The manipulated mechanism of agreement/awareness tested the prediction that feedback that the receiver agrees with may not be as upsetting, and may be exchanged more readily than feedback that the receiver does not agree with. I found that, as predicted, people felt overall less negative emotions toward feedback they agreed with, and rated feeling closer to the feedback-givers from agreement vignettes more favorably. Additionally, people rated feedback depicting agreement as more likely to occur in their own personal lives, as well as for other members of their cultural context, compared to feedback depicting non-agreement. Finally, examining the level of agreement suggested that agreement might function in a similar way across cultural contexts.



## **Chapter 3**

### **OVERVIEW OF DISSERTATION STUDIES**

The three preliminary studies showed that there are cultural differences in the responses to negative and positive feedback. Across all three studies I consistently found that East Asians responded in a more favorable manner toward negative feedback relative to European-Americans. Overall, compared to European-Americans, East Asians seem to have lower negative and greater positive emotional reactions, feel closer to the feedback-giver, and think that the feedback-giver has good intentions.

The goals of the dissertation studies were to further investigate the proposed model of cultural differences, focusing on the reception of negative feedback. The model proposes three mechanisms: connectedness, implicit beliefs about improvability, and agreement/ awareness. Because I have attempted to examine agreement/awareness (Study 2) and connectedness (Study 3) through manipulation in previous studies, Study 4 examined the final component of the model—beliefs about malleability and improvability in aspects of the self—by manipulating implicit beliefs. This method was selected because Spencer, Zanna, and Fong (2005) argue that manipulating constructs are a sound method of examining mediation. Study 5 continued to explore mechanisms of the model by manipulating a different (sociocultural) component of closeness—relational mobility, or beliefs about the opportunities to form new relationships or get out of existing relationships. Finally, Study 6 took place in the lab setting with real friend pairs to examine responses to feedback as the feedback occurs (as opposed to recalling a previous piece of feedback or imagining receiving a piece of feedback from a vignette).

## Chapter 4

### STUDY 4: EXAMINING IMPROVABILITY AS A MECHANISM

The goal of this study was to examine whether differences in improvement motivations might explain cultural differences in response to negative feedback from friends. To study whether beliefs about improvability could be a mechanism to explain this difference, I manipulated implicit beliefs.

Past studies have successfully manipulated implicit beliefs of entity and incremental beliefs. For example, in one study an entity mindset was activated by participants reading a paragraph about a speech given at the American Psychological Association's annual convention saying, "...in most of us, by the age of ten, our character has set like plaster and will never soften again.' He reported numerous large longitudinal studies which show that people 'age and develop, but they do so on the foundation of enduring dispositions" (Chiu et al., 1997, p. 27). An incremental mindset was activated by participants reading a paragraph saying, "...no one's character is hard like a rock that cannot be changed...He reported numerous large longitudinal studies which show that people can mature and can change their character. He also reported research findings showing that people's personality characteristics can be changed even in their late sixties" (Chiu et al., 1997, p. 27). Another more recent study manipulated these beliefs by showing participants an excerpt from a *Psychology Today* article that either discussed how "research supports the notion that mental skill abilities can increase by up to 70–80% if athletes practice

them regularly” or presented “statistics on how mental skills abilities cannot be improved by a substantial amount” (Shaffer, Tenenbaum, & Eklund, 2015, p. 468).

I predicted a replication of the consistent findings from past studies, finding that East Asian participants respond more favorably to negative feedback than European Americans (Nation x Feedback Valence). I also predict that across all participants, those who are primed with the passage about incremental mindset would be more likely to respond positively to feedback, particularly negative feedback, compared to those who read the entity mindset passage (Feedback Valence x Implicit Beliefs Prime). Finally, I will examine whether there are cultural differences in the way improvability mindset impacts response to feedback. If improvability mindset functions in the same manner across cultural contexts, I expect that there will be no significant 3-way interaction between Nation x Feedback Valence x Improvability Prime.

## **Method**

### **Participants**

Participants consisted of 60 female undergraduates taking PSYC 100 at a Mid-Atlantic university who have indicated that they are White/ Caucasian ( $M = 18.58$  years,  $SD = .79$ ) and 70 Korean female undergraduates from a Korean nursing college ( $M = 21.42$  years,  $SD = 2.92$ ). The adequacy of the sample size was determined by using G\*Power 3.1 (Faul, Erdfelder, Lang, & Buchner, 2007), a power analyses tool. Effect sizes from previous studies have ranged from partial  $\eta^2 = .077$  to .393. After

converting  $\eta^2$  into effect size  $f$  (.29 to .80), I selected the more conservative effect size  $f = .29$  and input it into G\*Power, along with an alpha error probability of .05, power of .95, 8 groups (2x2x2 Mixed ANOVA design), and a moderate correlation of .3 between the two measures. G\*Power determined that the sample size of 104 would be adequate. More participants than required were recruited for the study because I expected that some participants would have to be excluded for not carefully reading or disagreeing with the passage.

### **Procedure**

Participants were told that the goal of the study was to examine how people read and rate online articles from their own and others' perspectives. First, participants were randomly assigned to receive either the manipulated incremental or entity mindset passage. They were told that the passage was an excerpt taken from a *Psychology Today* article and that they would be asked to rate how much their best friend and themselves would agree with the content of the article. After reading through the passage, participants indicated how much they personally agreed with the content and wrote a few sentences about a time in which what they read in the article was true in their own lives. They were then asked to write down the initials of their best friend and indicate how much they thought their friend would agree with the content of the passage. This part was included as part of the cover story for why they would imagine receiving feedback from their later in the study. Participants then answered a few memory questions to make sure they read through the passage carefully.

Participants were then directed to complete the next part of the study in which they were presented with six passages about a target receiving feedback from their close friend. They were asked to imagine that they were the ones receiving the feedback in the vignettes from their own close friend, specifically the one they were thinking about the previous question. Participants rated their responses to each of the feedback scenarios on emotional responses, connectedness, agreement/ awareness, and improvability. After completing the feedback task, participants rated how much the passage was in line with the implicit theories measure and indicated their own level of agreement with the implicit theories measure as a manipulation check, and responded to the relational mobility scale.

### **Measures and Materials**

**Manipulation of improvability.** Using methodology inspired by past studies (e.g., Chiu et al., 1997; Shaffer et al., 2015), I created *Psychology Today* passages that manipulated beliefs toward improvability by supporting an incremental or entity mindset (Figure 2). The passage supporting an incremental mindset was titled: “Can people ever really change? Research says yes.” The passage supporting an entity mindset was titled: “Can people ever really change? Research says not much.” The passages were similar in length, structure, and organization, and both provided “empirical” support from studies, as well as a quote from a “reputable” psychologist. After reading the passages, participants indicated their level of agreement with the content of the passage from 1 (*Strongly disagree*) to 7 (*Strongly agree*) and wrote about a time in which the content of the paragraph was true for their own lives.

Figure 2 Study 4: Passages Manipulating Improvability

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In the study, participants who had goals of changing aspects of their personality and daily behavior were unsuccessful in changing toward the direction that aligned with their goals. Similarly, a longitudinal study conducted over a span of four years from the University of Oxford found that found that aspects of the self which were thought to be relatively stable did not change significantly over time.

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In the study, participants who had goals of changing aspects of their personality and daily behavior were successfully able to change in the direction that aligned with their goals. Similarly, a longitudinal study conducted over a span of four years from the University of Oxford found that aspects of the self which were thought to be relatively stable changed significantly over time.

**Manipulation check.** To ensure that participants read through the paragraphs carefully, I checked responses to two memory questions about the passage (e.g., When discussing research about how much a person can potentially improve, what percentage did the article say?). As a manipulation check, participants also rated the extent to which the passage they read agreed with the 3-item non-domain specific implicit theories measure (“The kind of person someone is something very basic about them and it can’t be changed very much”, Chiu et al., 1997). The implicit theories measure has been shown to reliably classify incremental and entity beliefs. All items were answered on a scale from 1 (*Strongly disagree*) to 7 (*Strongly agree*) with higher scores indicating greater entity beliefs. The passage rating of the items had good internal reliability (Eu-Am  $\alpha = .93$ , Korea  $\alpha = .73$ ). Participants also indicated their own personal ratings on the implicit theories measure by rating how they would personally rate these items (Personal: Eu-Am  $\alpha = .83$ , Korean  $\alpha = .74$ ).

**Response to feedback vignettes.** To examine whether manipulated implicit theories would impact responses to feedback, participants read vignettes in which a close friend gives a target positive and negative feedback. Participants were asked to imagine that they were the target of the feedback. Three types of feedback topics were created (personality, academics, lifestyle) and a positive and negative feedback scenario was created for each of the topics. The topic and feedbacks were of everyday nature; that is, feedback that people might exchange with their friends on a regular basis. For example, in a positive feedback for academics, participants imagined that

their close friend told them “...you work better under pressure and that you’ll do great on the paper”, while in a negative feedback scenario, participants imagined that their friend told them “...it is difficult to work under pressure ... you would do better on the paper if you hadn’t procrastinated” (see Table 1 for all vignettes). Participants saw all six vignettes (both positive and negative feedback vignettes for all three scenarios) and the order of the vignettes was randomized.



Table 1 Feedback Vignettes Used in Studies 4 and 5

	Positive Feedback	Negative Feedback
Personality	You're talking to your friend (your fellow campus organization member) about a small argument you got into with another friend (another member). Your friend (fellow member) tells you that you're only upset about this because you're such a thoughtful and caring person.	You're talking to your friend (your fellow campus organization member) about a small argument you got into with another friend (member). Your friend (fellow member) tells you that you're only upset about this because you worry too much about what other people think and take things too personally.
Academics	You're at the library working on a paper the night before the deadline because you procrastinated. Your friend (a member of your campus organization) sees you working and tells you that, he/she knows you work better under pressure and that you'll do great on the paper.	You're at the library working on a paper the night before the deadline because you procrastinated. Your friend (a member of your campus organization) sees you working and tells you that it is difficult to work under pressure and that you would do better on the paper if you hadn't procrastinated.
Lifestyle	While working out at the gym, you run into your friend (a member of your campus organization). He/She comments on how you're always working out and leading a healthy lifestyle.	While working out at the gym, you run into your friend (a member of your campus organization). He/She comments on how you're never at the gym, and you should work out more to lead a healthier lifestyle.

**Emotional response.** After imagining receiving the feedback in the vignettes from their close friend, participants rated their positive (happy, supported, grateful) and negative emotional responses (sad, offended, annoyed) on a 1 (Not at all) to 7 (Extremely) scale. Both showed good internal reliability for positive (positive emotions: Eu-Am  $\alpha = .83$ , Korea  $\alpha = .85$ , negative emotions: Eu-Am  $\alpha = .73$ , Korea  $\alpha =$

.84) and negative feedback vignettes (positive emotions: Eu-Am  $\alpha = .81$ , Korea  $\alpha = .77$ , negative emotions: Eu-Am  $\alpha = .74$ , Korea  $\alpha = .75$ ).

**Connectedness.** Connectedness was measured by feelings of closeness after receiving the comment, which was responded to on a -100 (*The furthest I can ever imagine being with someone*) to +100 (*The closest I can ever imagine being with someone*) scale to reduce ceiling effects.

**Agreement/ awareness.** Agreement/ awareness was measured with three items of level of agreement with comment, perceived helpful intentionality of the feedback-giver, and perceived level of awareness of the feedback-giver. All items were responded to on a 1 to 7 scale using anchors respective to each item (e.g., *Not helpful at all*, *Extremely helpful*), and there was good internal reliability for the three items (Positive vignettes: Eu-Am  $\alpha = .80$ , Korea  $\alpha = .91$ , Negative vignettes: Eu-Am  $\alpha = .76$ , Korea  $\alpha = .88$ ).

**Improvability.** Although implicit beliefs were manipulated, participants indicated whether they would want to work on the content of the feedback on a 1 (*Not at all*) to 7 (*Extremely*) scale.

**Relational mobility.** As an exploration of another measure of connectedness, I included the 12-item Relational Mobility Scale (Schug et al., 2010; Yuki et al., 2007) which assesses the perceived amount of opportunity to meet new interaction partners, select own relationships and groups, and tendency for people to not be bound to current relationships and groups. All items are measured on a 1 (*Strongly disagree*) to 7 (*Strongly agree*) scale with higher numbers indicating greater perceived relational

mobility. The 12 items have also been factor analyzed into subscales of lack of freedom to choose, difficulty of entry, and social stickiness (San Martin, 2014). Because I was primarily interested in looking at social stickiness as a component of connectedness, four items in the social stickiness factor were reverse-coded so higher numbers would indicate greater perceived levels of social stickiness. The overall relational mobility scale (Eu-Am  $\alpha = .75$ , Korea  $\alpha = .62$ ) and the social stickiness factor (Eu-Am  $\alpha = .60$ , Korea  $\alpha = .55$ ) had only marginally strong internal reliability; however, I used the scale based on the theoretical model and factor structure of relational mobility (San Martin, 2014; Yuki et al., 2007).

## **Results**

### **Manipulation of Improvability**

Before analyzing the data, I first checked whether participants read through the prime carefully. All participants got at least one of the memory check questions correct and were thus included in all further analyses. I also wanted to make sure that participants from both nations agreed with the content of paragraphs to the same extent. There was no Nation x Improvability Prime interaction for agreement of the passage ( $F(1, 125) = .03, ns$ ), suggesting that there were no cultural differences in how much participants agreed with the entity and incremental primes. There were no cultural differences in agreement with the content of the paragraphs, (Eu-Am:  $M = 4.67, SD = 1.16$ , Korea:  $M = 4.86, SD = 1.57, t(128) = -.78, ns$ ). However, participants overall agreed more with the content of the incremental passage than the entity

passage (Entity:  $M = 4.35$ ,  $SD = 1.42$ , Incremental:  $M = 5.22$ ,  $SD = 1.24$ ,  $t(127) = -3.72$ ,  $p < .0001$ ). For further analysis, I only selected participants who indicated that they at least moderately agreed with the content of the article (selected 4 or above on the personal agreement item). This excluded 8 Eu-Ams (59-51) and 15 Koreans (70-55) from analysis.

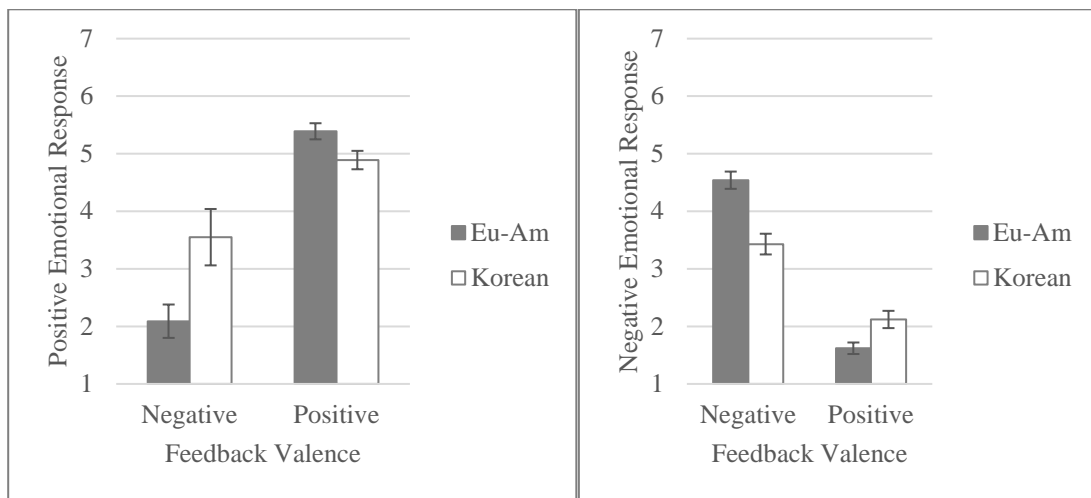
There was a significant difference in how much participants thought the Improvability Prime passages agreed with the entity measures (Entity:  $M = 5.20$ ,  $SD = 1.19$ , Incremental:  $M = 3.02$ ,  $SD = 1.37$ ,  $t(96) = 8.24$ ,  $p < .0001$ ), suggesting that participants, who at least moderately agreed with the paragraphs, read through the paragraphs carefully. Participants who received the entity passage also personally endorsed a significantly greater entity mindset compared to participants who received the incremental passage (Entity:  $M = 4.72$ ,  $SD = 1.11$ , Incremental:  $M = 3.70$ ,  $SD = 1.32$ ,  $t(95) = 4.04$ ,  $p < .0001$ ). In all, these results suggest that the passages primed entity and incremental mindset in the intended direction.

### **Replication of Previous Studies (Nation x Feedback Valence)**

**Emotional response.** Replicating results from Preliminary Studies 1-3, there was a significant Nation x Feedback Valence interaction predicting negative and positive emotional responses (negative emotions:  $F(1, 99) = 43.16$ ,  $p < .0001$ ,  $\eta_p^2 = .30$ , positive emotions:  $F(1, 102) = 54.68$ ,  $p < .0001$ ,  $\eta_p^2 = .35$ , Figure 3). While both Koreans and Eu-Ams responded with less positive and greater negative emotions to negative feedback, Koreans had a smaller difference in their emotional responses to negative and positive feedback, compared to Eu-Ams (Eu-Am: positive emotions

$t(58) = -20.15, p < .0001$ , negative emotions  $t(58) = 16.27, p < .0001$ , Korean: positive emotions  $t(67) = -7.30, p < .0001$ , negative emotions  $t(64) = 8.22, p < .0001$  ). All means and standard deviations are presented in Table 2.

Figure 3 Study 4: Cultural Differences in Emotional Response to Negative and Positive Feedback



As expected, there was a main effect of Feedback Valence in that people reported less negative and more positive emotions toward positive feedback, compared to negative emotions (negative emotions:  $F(1, 99) = 299.73, p < .001, \eta_p^2 = .75$ , positive emotions  $F(1, 102) = 305.61, p < .0001, \eta_p^2 = .75$ ). Of less interest, there was also a main effect of Nation for positive emotions ( $F(1, 102) = 7.13, p = .009, \eta_p^2 = .07$ , Koreans higher), but not for negative emotion ( $F(1, 99) = 3.27, ns$ ).

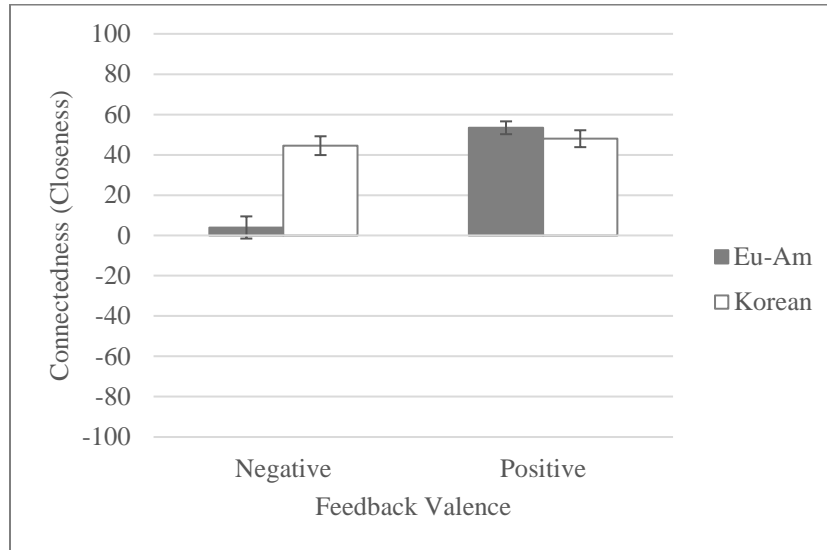
Table 2 Study 4: Compared to European-Americans (Eu-Am), Koreans Respond Less Negatively to Negative Feedback

	Eu-Am (0)		Korean (1)		2-way interaction		
DVs:	$M_{\text{neg}}$ ( <i>SD</i> )	$M_{\text{pos}}$ ( <i>SD</i> )	$M_{\text{neg}}$ ( <i>SD</i> )	$M_{\text{pos}}$ ( <i>SD</i> )	<i>F</i>	<i>df</i>	$\eta_p^2$
Primary DVs							
Positive emotional response	2.09 (.88)	5.39 (1.00)	3.55 (1.35)	4.89 (1.24)	54.68**	(1, 102)	.35
Negative emotional response	4.53 (1.07)	1.62 (.69)	3.43 (1.28)	2.12 (1.03)	43.16**	(1, 99)	.30
Connectedness and Agreement/ Awareness DVs							
Feelings of closeness	3.95 (38.87)	53.41 (22.49)	44.53 (33.63)	47.99 (29.61)	39.94**	(1, 100)	.29
Agreement/ Awareness	3.89 (.94)	5.39 (.74)	4.59 (1.17)	4.87 (1.12)	24.65**	(1, 102)	.20

Note: \*\* < .0001, \* < .05

**Connectedness.** There was also a significant interaction between Nation x Feedback Valence predicting levels of feelings of closeness,  $F(1, 100) = 39.94$ ,  $p < .0001$ ,  $\eta_p^2 = .29$  (Figure 4). Eu-Ams reported a significant difference in their feelings of closeness for negative and positive feedback, while Koreans did not report feeling significantly different in closeness for positive and negative feedback (Eu-Am:  $t(57) = -9.52$ ,  $p < .0001$ , Korean  $t(66) = -.56$ , *ns*).

Figure 4 Study 4: Cultural Differences in Feelings of Closeness After Negative and Positive Feedback



There was a main effect of Feedback Valence, with people rating greater feelings of closeness after positive than negative feedback ( $F(1, 100) = 52.88, p < .0001, \eta_p^2 = .35$ ). Supporting our predictions that Koreans would have greater levels of connectedness than Eu-Ams, there was a main effect of Nation with Koreans overall reporting feeling greater levels of closeness than Eu-Ams ( $F(1, 100) = 11.79, p = .001, \eta_p^2 = .11$ ).

**Agreement/ awareness:** The Nation x Feedback Valence interaction was significant for agreement/ awareness,  $F(1, 102) = 24.65, p < .0001, \eta_p^2 = .20$ . Eu-Ams reported greater levels of agreement/ awareness for positive than negative feedback, while there was no significant difference between the two types of feedback for Koreans (Eu-Am:  $t(58) = -10.19, p < .0001$ , Korean:  $t(67) = -1.17, ns$ ). Of less interest,

there was a main effect of Feedback Valence, with people overall rating greater agreement/ awareness in the positive feedback vignettes compared to negative ones ( $F(1, 102) = 51.34, p < .0001, \eta_p^2 = .36$ ). There was no main effect of Nation  $F(1, 102) = .34, ns$ .

### **Examining Implicit Beliefs as a Mechanism (Feedback Valence x Improvability Prime)**

Although I had predicted that people who read the incremental mindset passage would show more positive and less negative responses to negative feedback, compared to people who read the entity mindset passage (mirroring the nation differences in response to feedback), the results did not support my predictions.

There were no significant Feedback Valence x Improvability Prime interactions for negative emotional response ( $F(1, 99) = 1.19, ns$ ), positive emotional response ( $F(1, 102) = .98, ns$ ), connectedness ( $F(1, 100) = 1.86, ns$ ), and agreement/ awareness ( $F(1, 102) = .40, ns$ ).

Furthermore, there was only a significant main effect of Feedback Valence, as presented in the earlier results, and no significant main effect of the manipulated Improvability Prime (negative emotions:  $F(1, 99) = .16, ns$ , positive emotions:  $F(1, 102) = 1.92, ns$ , connectedness:  $F(1, 100) = .93, ns$ , agree/aware:  $F(1, 102) = .02, ns$ ), suggesting that the Improvability Prime did not affect responses to negative and positive feedback.

### **Does Improvement Mindset Function Similarly Across Cultural Contexts? (Nation x Feedback Valence x Improvability Prime)**



The purpose of examining the three-way interaction between Nation x Feedback Valence x Improvability Prime was to demonstrate that the mechanism of improvability functions similarly across both Eu-Am and Korean cultural contexts. Most of the three-way interactions were non-significant (negative emotions:  $F(1, 97) = .02, ns$ , connectedness:  $F(1, 98) = 2.14, ns$ , agreement/ awareness:  $F(1, 100) = 3.81, ns$ ). The three-way interaction was only significant for positive emotional response ( $F(1, 100) = 6.73, p = .011, \eta_p^2 = .06$ ) with a significant Nation x Improvability Prime interaction for only Positive Feedback, which is not an interesting or notable finding. However, since the Improvability Prime did not function as predicted (with incremental prime leading to more positive responses to negative feedback than the entity prime), I cannot interpret the non-significant three-way interactions as improvability functioning the same way across cultures.

### **Testing the Model of Cultural Differences in Response to Feedback**

Since manipulation of improvability did not work out as expected, I decided to collapse across the two priming conditions and examine the entire proposed model of cultural differences in response to feedback as an exploratory analysis. Note that this is not true mediation, but rather statistical mediation because there is no temporal precedence of connectedness coming before emotional responses to feedback.

To examine the differences in response to positive and negative feedback *within* each nation (looking at the slope difference), I calculated difference scores for the positive and negative version of each of the topics for each of the participants (e.g., negative emotional response to positive feedback topic #1 – negative emotional

response to negative feedback topic #1). A composite score was created, averaging across the three topics. Depending on if the differences are positive or negative scores, larger numbers for difference scores can either indicate a larger difference (e.g., 3 vs. 1) between responses to positive feedback and negative feedback *or* more zero-like difference (e.g., -.7 vs. -.2) between responses to positive feedback and negative feedback.

Nation predicting Differences in emotional response to positive and negative feedback was entered into a path model using Mplus (Muthén & Muthén, 1998-2017), and all the proposed mechanisms (connectedness: feelings of closeness, relational mobility, improvement motivation, agreement/ awareness) were entered into the model simultaneously as mediators. All the proposed mechanisms were allowed to be associated to one another (see Table 3 for correlations between all the variables). Finally, I bootstrapped 2000 samples to test my model.

Table 3 Study 4: Correlations Between Proposed Mediators and Differences in Emotional Responses to Positive and Negative Feedback

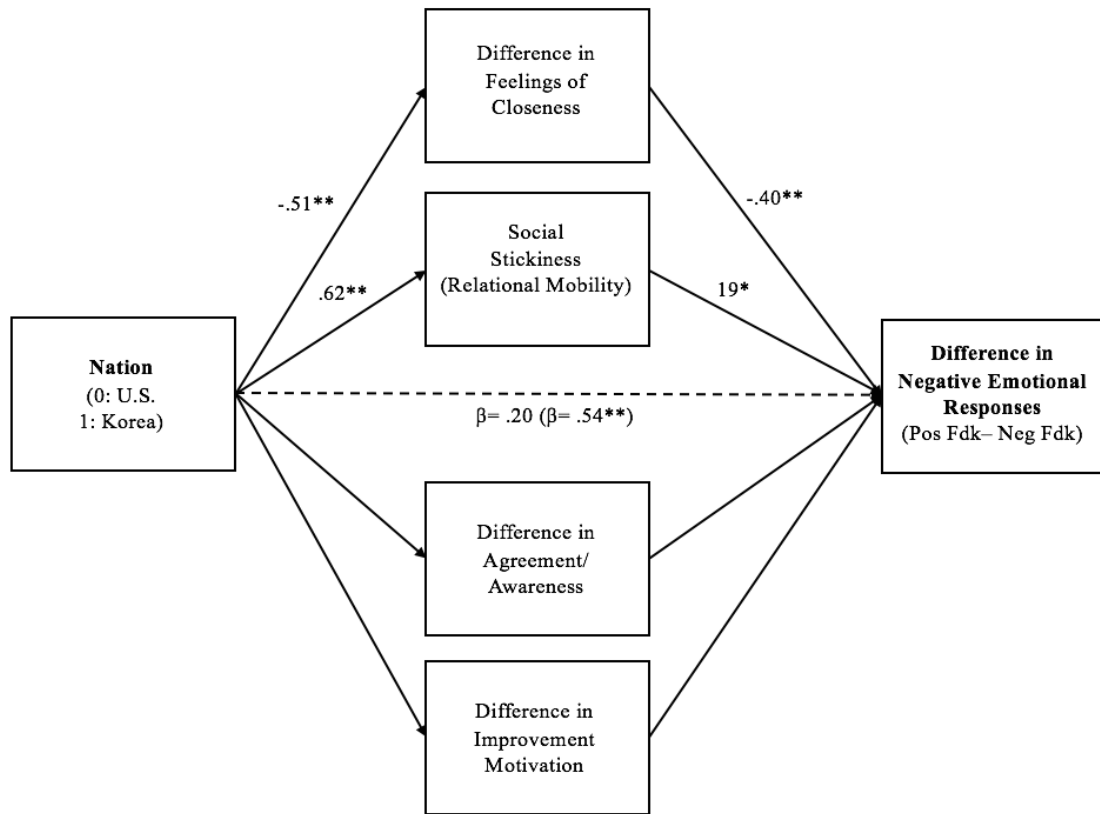
	Difference in positive emotional responses	Difference in negative emotional responses	Difference in feelings of closeness	Social stickiness	Difference in agreement/ awareness
Difference in positive emotional responses					
Difference in negative emotional responses	-.79**				
Difference in feelings of closeness	.69**	-.64**			
Social stickiness	-.40**	.37**	-.31**		
Difference in agreement/ awareness	.67**	-.61**	.83**	-.32**	
Difference in improvability	.12	-.13	.28**	.06	.34**

**Differences in negative emotional response.** I first ran a test of partial mediation, allowing Nation to predict the differences in negative emotional response (including the direct effect). Therefore, I could not test for model fit because all possible paths were estimated. The association between Nation and Difference in Negative Emotional Responses (direct effect) was reduced from  $\beta = .54$ ,  $SE = .25$ ,  $p < .0001$  to  $\beta = .20$ ,  $SE = .10$ ,  $ns$ . The indirect effect of Nation and Difference in Negative

Emotions through Difference in Feelings of Closeness was significant ( $\beta = .17$ ,  $SE = .06$ ,  $p = .005$ , 95% CI [.19, .96]), suggesting that the cultural differences in differential response in negative emotions to positive and negative feedback (slope) could be partially explained by differences in the feelings of closeness after receiving positive and negative feedback.

To test if connectedness fully mediated the cultural differences in differential response to feedback, I then tested a full mediation model by fixing the direct effect to zero. The model had slightly worse fit than the saturated model with  $\chi^2(1) = 3.90$ ,  $p = .05$ , RMSEA = .15, 90% CI [.01, .32], CFI = .99, TLI = .87, SRMR = .02. Although RMSEA is above the cutline for a good fitting model ( $RMSEA < .05$ ), based on theoretical approaches and simulation models, Kenny, Kaniskan, & McCoach (2015) argue that RMSEA should not be considered for small  $df$  models, particularly for small sample sizes. The model is a 1 degree of freedom model, so RMSEA may be falsely showing poor model fit. Therefore, the model could be interpreted and I found a significant indirect effect of Difference in Feelings of Closeness ( $\beta = .20$ ,  $SE = .07$ ,  $p < .0001$ , 95% CI [.08, .34]) and Social Stickiness ( $\beta = .2$ ,  $SE = .05$ ,  $p = .02$ , 95% CI [.03, .22]), suggesting that cultural differences in the different levels of closeness felt after feedback, as well as cultural differences in perceived social stickiness explained cultural differences in differential negative emotional responses to feedback (Figure 5).

Figure 5 Study 4: Social Stickiness and Difference in Feelings of Closeness After Positive and Negative Feedback Fully Mediate Cultural Differences in Negative Emotional Response to Feedback

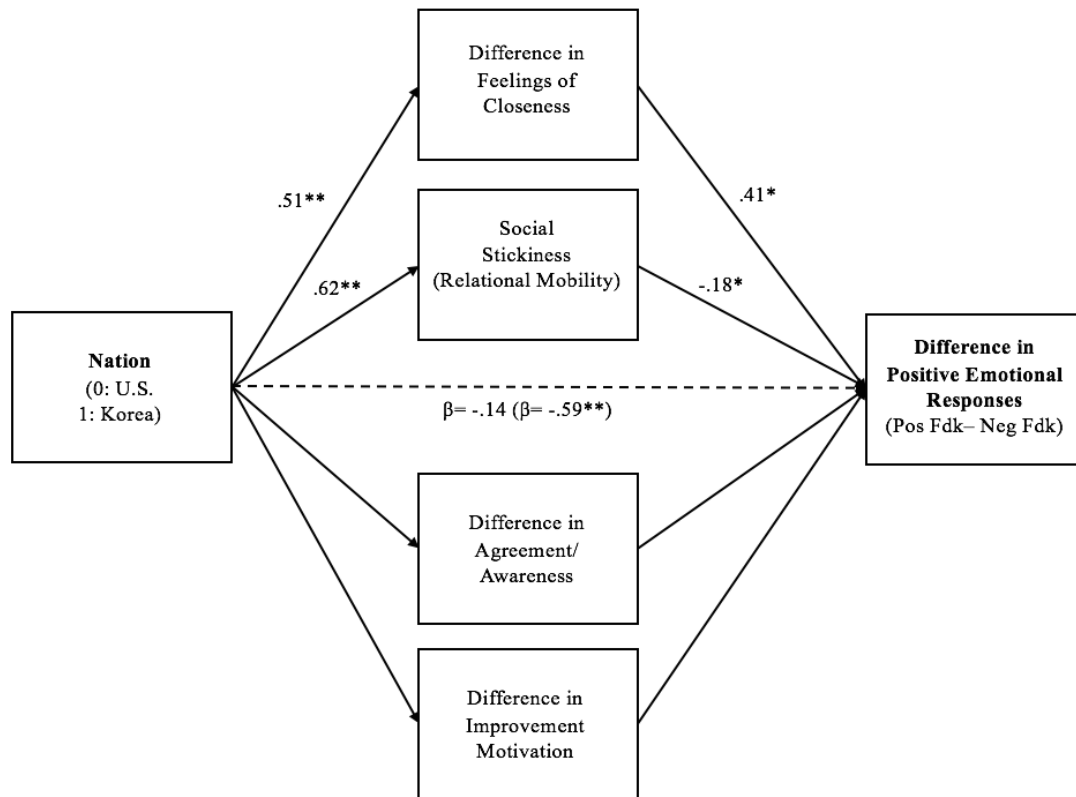


Note: All proposed mechanisms were allowed to be associated with one another in the model.

**Differences in positive emotional response.** The association between Nation and difference in positive emotional responses was reduced from  $\beta = -.59$ ,  $SE = .27$ ,  $p < .0001$  to  $\beta = -.14$ ,  $SE = .09$ ,  $ns$ . The indirect effect through difference in feelings of closeness was significant ( $\beta = -.19$ ,  $SE = .08$ ,  $p = .008$ , 95% CI [-.33, -.05]), suggesting that cultural differences in differential positive emotional responses to positive and negative feedback were partially mediated by cultural differences in feelings of closeness.

I then tested if the mechanisms could fully mediate cultural differences in differential positive emotional responses to feedback by fixing the direct effect to zero. The full mediation model had relatively good fit with  $\chi^2(1) = 2.10$ , RMSEA = .09, 90% CI [.00, .27], CFI = .997, TLI = .95, SRMR = .01. Although RMSEA is slightly above the cutline, I did not consider RMSEA for this  $df=1$  model. Therefore, I interpreted the model and found that the same two indirect effects of Difference in Feelings of Closeness ( $\beta = -.21$ ,  $SE = .07$ ,  $p = .005$ , 95% CI [-.36, -.06]) and Social Stickiness ( $\beta = -.11$ ,  $SE = .05$ ,  $p = .02$ , 95% CI [-.21, -.03]) were significant mediators in the model (Figure 6).

Figure 6 Study 4: Social Stickiness and Difference in Feelings of Closeness After Positive and Negative Feedback Fully Mediate Cultural Differences in Positive Emotional Response to Feedback



Note: All proposed mechanisms were allowed to be associated with one another in the model.

### Discussion

Study 4 largely replicated the previous findings that while Eu-Ams and Koreans tend to prefer positive feedback from friends, Eu-Ams show a greater preference (steeper slopes) for positive over negative feedback, compared to Koreans. Koreans showed a reduced difference in their emotional responses, connectedness, and agreement/ awareness.

Although memory quiz questions, ratings of entity mindset of the passage, personal ratings of entity mindset after reading the passage, and agreement of the passages seemed to indicate that the manipulation of improbability through passage primes worked, I did not find the predicted Feedback Valence x Improbability Prime interaction. I had predicted that people exposed to the passage reporting research that people had great potential for improvement to show more favorable responses to feedback, particularly negative feedback, but all results regarding the Improbability Prime were not significant. This suggests that participants may have read through the passage carefully, correctly rated it as being relatively higher or lower on entity mindset, but the prime was not strong enough to shift participants' personal beliefs about improbability (the mean personal endorsement of entity mindset was 4.72 for the Entity Passage vs. 3.0 for the Incremental Passage) or that shifting personal beliefs about improbability to this small amount is not enough to carry over to affect responses to negative and positive feedback. This may also suggest that improbability is not a mechanism that can explain differential responses to negative and positive feedback.

Because there were no differences between the Improbability Prime groups, I tested for statistical mediation using the proposed mediators in the study. Replicating the mediation results from Study 1, I found that connectedness (Difference in Feelings of Closeness between Positive and Negative Feedback, Social Stickiness) was a significant mediator that fully explained cultural differences in response to negative and positive emotional responses to feedback.



## **Chapter 5**

### **STUDY 5: EXAMINING RELATIONAL MOBILITY AS A MECHANISM**

The goal of this study was to take another approach to examining connectedness by looking at the sociocultural construct of relational mobility. While Study 3 examined the mechanism of connectedness by manipulating the interpersonal level of connectedness through manipulating relational closeness (close friend vs. acquaintance vs. stranger), examining the sociocultural level of connectedness through relational mobility (Yuki et al., 2007; Yuki & Schug, 2012) would allow me to examine how perceived opportunities to form new relationships in one's cultural context (i.e. how sticky the relationships are perceived to be) could impact people's responses to feedback.

Recent studies have successfully manipulated relational mobility using priming passages. For example, participants read about a highly relationally mobile company that had many departments in several locations, in which employees worked together in temporary teams that switched members often. The low relational mobility company was a small company with a low turnover rate and employees working together for extended periods of time (L. M. Li, Adams, Kurtis, & Hamamura, 2015; L. M. Li, Hamamura, & Adams, 2016). Another study manipulated relational mobility by having participants think and write about the last time they talked with their family (priming low relational mobility) or someone they had not previously met (priming high relational mobility) for at least 30 minutes (Yuki, Sato, Takemura, & Oishi, 2013).

The current study manipulated people's perceptions of the opportunity to form new relationships, as well as the perceptions of being "stuck" in a group in a relevant context (i.e., college campus organization) using priming passages. Again, I expected to replicate previous findings that East Asians would have less differences between their responses to negative and positive feedback than European-Americans (Nation x Feedback Valence), but furthermore I predicted that people primed with low relational mobility would respond more favorably to negative feedback than people primed with high relational mobility (Feedback Valence x Relational Mobility Prime). In addition, if relational mobility is the mechanism for cultural differences in responses to negative feedback, I should expect that there would be no significant 3-way interaction between Nation x Feedback Valence x Relational Mobility Prime.

## **Method**

### **Participants**

I recruited 120 female undergraduates from PSYC 100 courses in a Mid-Atlantic university who have indicated that they are White/ Caucasian. At the end of the week of data collection, 111 participants completed the study ( $M = 18.74$  years,  $SD = .84$ ). I also requested 120 Korean females aged 18 through 29 years through an online crowd-sourcing company, Qualtrics Panels, and received a final sample of 129 Korean female participants ( $M = 23.44$  years,  $SD = 3.24$ ). Before I received the dataset from Qualtrics Panels, participants were already removed from the data if they

indicated they were male, under the age of 18 or over the age of 30, or were tagged as speeding during the survey (completing the study under 300 seconds).

As with study 4, G\*Power 3.1 (Faul et al., 2007) determined the adequacy of the sample size. Using the smallest effect size from Study 4 of partial  $\eta^2 = .06$  (effect size  $f = .025$ ) with an alpha error probability of .05, power of .95, and 8 groups (2x2x2 Mixed ANOVA design), the program determined that the sample size of 120 would be adequate. However, more participants were recruited for the study for two practical reasons. First, Qualtrics Panels had a minimum of recruiting 100 respondents and the quote given for 100 vs. 120 respondents were very similar. Second, I expected that some participants may need to be removed before analysis for low quality responses, such as not passing the memory quiz.

## **Procedure**

The general procedure for this study was identical to Study 4, except that in Study 5, participants imagined that the feedback was coming from another member of the campus organization in this study (vs. feedback from a close friend). As with Study 4, participants were shown a series of positive and negative feedback vignettes about personality (scenario 1), academic (scenario 2), and lifestyle (scenario 3) feedback. Everyone received both the positive and negative feedback vignette for the personality and academic scenarios, making it a within-groups design (see Table 4 for order of feedback vignettes presented). However, due to an error, participants received *either* the positive or negative feedback vignette for the lifestyle feedback vignette, making it a between-groups design and not able to include in the same analysis as the

first two scenarios. Therefore, there were two sets of analyses conducted for each of the dependent variables. The first set of analyses with personality and academic scenarios were conducted as a Mixed ANOVA design and the second set of analyses with the lifestyle scenario were conducted as a between-groups ANOVA design.

Table 4 Study 5: Order of Feedback Vignettes Presented to Participants

Order 1	Order 2	Order 3	Order 4
Scenario 1 Positive			
Scenario 2 Negative			
Scenario 3 Positive	Scenario 3 Positive	Scenario 3 Negative	Scenario 3 Negative
Scenario 1 Negative	Scenario 2 Positive	Scenario 1 Negative	Scenario 2 Positive
Scenario 2 Positive	Scenario 1 Negative	Scenario 2 Positive	Scenario 1 Negative

## Measures and Materials

**Passage manipulating relational mobility.** Using methodology similar to Study 4, I created passages priming high or low relational mobility in a campus organization context. The content and general structure of the passages are a modified version of the passages created by L. M. Li et al. (2015) and included the three components of relational mobility: amount of opportunity to meet new interaction partners, opportunities for people to select own relationships and groups, tendency for people to not be bound to current relationships and groups (Yuki et al., 2007). The

social stickiness of the group (San Martin, 2014) was especially emphasized. After reading the passage, participants wrote about the type of relationship they would have with another member of the campus organization they read about, and wrote about a time in which they were part of a club or organization like this one.

#### High Relational Mobility Passage

Imagine that you have been accepted into a popular campus organization. The club is large with multiple chair-positions and many new members that join each year. Once you join the club, you can choose to stay or leave during your time in college, and members often lose with one another after graduating from college.

The club has a fluid structure in which members come together on temporary teams to work on particular projects. The teams separate once the project is complete, and members are encouraged to select different team members for the next set of projects. In other words, members work in teams that change frequently, and they have frequent opportunities to meet and work with different members of the club.

#### Low Relational Mobility Passage

Imagine that you have been accepted into a popular campus organization. The club is small with one chair-position and a small, loyal set of members. Once you join the club, you will have to stay as a member during your time in college, and members often maintain

their relationships with other members long after graduating from college.

The club has a stable structure in which members work together as an interconnected unit for an extended period of time across multiple projects. The teams often stay together after one project is complete and begin a new set of projects together. In other words, members are linked to each other in a small network with overlapping ties, and they have frequent opportunities to interact with the same set of members.

**Manipulation check.** Participants responded to two memory check questions to make sure they read through the paragraph carefully (e.g., “How many chair positions does this campus organization have?”).

***Relational mobility.*** To make sure relational mobility was primed successfully, participants also responded to questions about relational mobility in the campus organization context they read about using the 12-item Relational Mobility Scale (Schug et al., 2010; Yuki et al., 2007). Social stickiness items (San Martin, 2014) were reverse-coded so that higher numbers indicated greater levels of social stickiness. Participants also responded to their personal perceptions of relational mobility in general. Internal reliability for ratings of relational mobility in the campus organization was adequate for Eu-Ams ( $\alpha = .68$ ), but very low for Koreans ( $\alpha = .38$ ). Internal reliability for personal perceptions of relational mobility in their context was

better (Overall relational mobility: Eu-Am  $\alpha = .82$ , Korea  $\alpha = .60$ , Social stickiness: Eu-Am  $\alpha = .78$ , Korea  $\alpha = .68$ ).

**Response to feedback.** Participants imagined that they were part of the campus organization that they had just read about and that another member of the organization (same age, sex, year in college) was the one giving them the feedback. Participants then answered the same questions on emotional responses, connectedness, agreement/ awareness, and improvability for each of the feedback vignettes. The items asked after each of the vignettes were identical to the previous study. Therefore, only internal reliability for items that were computed will be reported below.

**Emotional response.** Both Eu-Am and Koreans showed adequate internal reliability for the first two positive vignettes (positive emotions: Eu-Am  $\alpha = .80$ , Korea  $\alpha = .81$ , negative emotions: Eu-Am  $\alpha = .69$ , Korea  $\alpha = .78$ ) and first two negative feedback vignettes (positive emotions: Eu-Am  $\alpha = .85$ , Korea  $\alpha = .85$ , negative emotions: Eu-Am  $\alpha = .81$ , Korea  $\alpha = .71$ ). The third feedback scenario also had good internal reliability for positive feedback (positive emotions: Eu-Am  $\alpha = .81$ , Korea  $\alpha = .74$ , negative emotions: Eu-Am  $\alpha = .76$ , Korea  $\alpha = .96$ ) and negative feedback (positive emotions: Eu-Am  $\alpha = .87$ , Korea  $\alpha = .85$ , negative emotions: Eu-Am  $\alpha = .82$ , Korea  $\alpha = .69$ ).

**Agreement/ awareness.** There was adequate internal reliability for the three items across the first two vignettes (positive vignettes: Eu-Am  $\alpha = .60$ , Korea  $\alpha = .79$ , negative vignettes: Eu-Am  $\alpha = .70$ , Korea  $\alpha = .83$ ). The third feedback also had decent

internal reliability (positive vignettes: Eu-Am  $\alpha = .67$ , Korea  $\alpha = .80$ , negative vignettes: Eu-Am  $\alpha = .66$ , Korea  $\alpha = .83$ ).

**Improvability.** Participants responded to one item on how much they would want to work on the content of the feedback on a 1 (*Not at all*) to 7 (*Extremely*) scale.

**Entity mindset.** As an exploratory measure, I included a measure of entity mindset, which serves as a proxy for one of the proposed mechanisms in the model, overall beliefs toward improvability. Participants responded to the 3-item non-domain specific implicit theories measure (Chiu, Hong, & Dweck, 1997). There was good internal reliability for both Eu-Ams ( $\alpha = .84$ ) and Koreans ( $\alpha = .73$ ).

## Results

### Manipulation of Relational Mobility

Before analyzing the data, I wanted to make sure that there were no differences in how participants were primed. First, I looked at responses to the memory check questions. Only participants who had at least one of the two memory check items correct were included in the final sample, which removed 13 Eu-Am (111-98) and 24 Korean (129-118) participants. I also checked to see whether people who read about the campus organization with high relational mobility would rate the organization as having higher relational mobility than people who read about the low relationally mobile organization. The high relational mobility organization was not rated as being significantly higher in overall relational mobility (Low relational mobility  $M = 4.40$ ,  $SD = .86$ , High relational mobility  $M = 4.57$ ,  $SD = .87$ ,  $t(239) = -1.60$ ,  $ns$ ), but was rated



as being lower in social stickiness (Low relational mobility  $M= 4.03$ ,  $SD= 1.06$ , High relational mobility  $M= 3.54$ ,  $SD= 1.09$ ,  $t(239)= 3.52$ ,  $p= .001$ ) than the lower relational mobility organization.

### **Replication of Previous Studies (Nation x Feedback Valence)**

**Emotional response.** For the first set of analyses (with only the personality and academic scenarios), replicating past results from Studies 1-4, there was a significant Nation x Feedback Valence interaction predicting negative and positive emotional responses (negative emotions:  $F(1, 215)= 47.29$ ,  $p< .0001$ ,  $\eta_p^2= .18$ , positive emotions:  $F(1, 214)= 59.05$ ,  $p< .0001$ ,  $\eta_p^2= .22$ , Figure 7). Koreans had a smaller difference in emotional responses to negative and positive feedback, compared to Eu-Ams (Eu-Am: positive emotions  $t(109)= -20.91$ ,  $p< .0001$ , negative emotions  $t(110)= 15.45$ ,  $p< .0001$ , Korean: positive emotions  $t(129)= -10.99$ ,  $p< .0001$ , negative emotions  $t(129)= 9.88$ ,  $p< .0001$ ). All means and standard deviations are presented in Table 5.

Figure 7 Study 5: Cultural Differences in Emotional Response to Negative and Positive Feedback

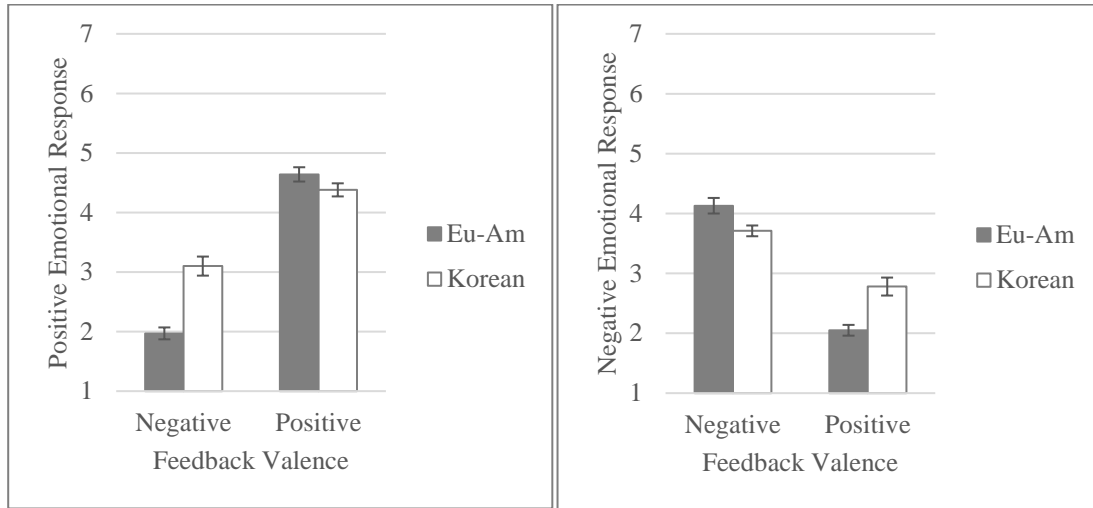


Table 5 Study 5: Compared to European-Americans (Eu-Am), Koreans Respond Less Negatively to Negative Feedback

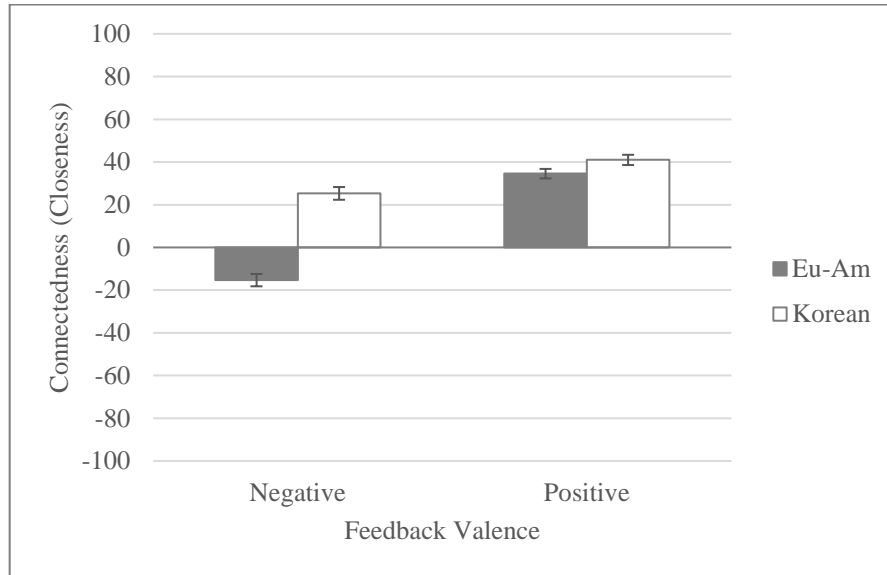
		Eu-Am (0)		Korean (1)		2-way interaction		
DVs:		$M_{neg}$ ( <i>SD</i> )	$M_{pos}$ ( <i>SD</i> )	$M_{neg}$ ( <i>SD</i> )	$M_{pos}$ ( <i>SD</i> )	F	<i>df</i>	$\eta_p^2$
Primary DVs								
Positive emotional response	Scenario 1 & 2	1.97 (.99)	4.64 (1.18)	3.10 (1.18)	4.38 (1.15)	59.05**	(1, 214)	.22
	Scenario 3	1.67 (.90)	5.49 (1.19)	2.42 (1.27)	4.89 (1.27)	17.55**	(1, 214)	.08
Negative emotional response	Scenario 1 & 2	4.13 (1.26)	2.05 (.88)	3.71 (1.01)	2.78 (1.06)	47.29**	(1, 215)	.18
	Scenario 3	4.99 (1.55)	1.17 (.50)	4.05 (1.37)	1.63 (1.12)	17.85**	(1, 212)	.08
Connectedness, Agreement/ Awareness, Improbability DVs								
Feelings of closeness	Scenario 1 & 2	-15.31 (28.74)	34.54 (22.23)	25.40 (32.49)	40.98 (26.17)	61.54**	(1, 216)	.22
	Scenario 3	-30.33 (41.08)	32.44 (21.04)	-5.90 (48.04)	37.26 (24.78)	4.04*	(1, 211)	.02
Agreement/ Awareness	Scenario 1 & 2	3.71 (1.05)	4.80 (.75)	4.44 (1.11)	4.63 (.92)	41.25**	(1, 216)	.16
	Scenario 3	3.52 (1.41)	5.10 (.93)	3.35 (1.39)	4.78 (1.09)	.20	(1, 214)	
Improbability	Scenario 1 & 2	4.12 (1.21)	3.83 (1.14)	4.51 (1.26)	4.28 (1.18)	6.47*	(1, 216)	.03
	Scenario 3	3.94 (1.51)	3.39 (1.79)	3.47 (1.59)	4.85 (1.58)	19.06**	(1, 213)	.08

As expected, there was a main effect of Feedback Valence in that people reported less negative and more positive emotions toward positive feedback, compared to negative emotions (negative emotions:  $F(1, 215) = 329.07, p < .001, \eta_p^2 = .61$ , positive emotions:  $F(1, 214) = 474.76, p < .0001, \eta_p^2 = .69$ ). Of less interest, there was also a main effect of Nation for positive emotions ( $F(1, 214) = 12.09, p = .001, \eta_p^2 = .05$ , Koreans higher), but not for negative emotion ( $F(1, 215) = 1.72, ns$ ).

Similar results emerge for the second set of analyses with the third scenario (lifestyle). There was a significant Nation x Feedback Valence interaction for negative emotions ( $F(1, 212) = 17.85, p < .0001, \eta_p^2 = .08$ ) and positive emotions ( $F(1, 214) = 17.55, p < .0001, \eta_p^2 = .08$ ). There was also a main effect of Feedback Valence for negative emotions ( $F(1, 212) = 359.60, p < .0001, \eta_p^2 = .63$ ) and positive emotions ( $F(1, 214) = 380.92, p < .0001, \eta_p^2 = .64$ ), suggesting that overall, people responded with more negative emotions and less positive emotions toward negative, compared to positive feedback. There was no main effect of Nation for both negative ( $F(1, 212) = 2.12, ns$ ) and positive emotions ( $F(1, 214) = .20, ns$ ), suggesting that Eu-Ams and Koreans did not respond differently in terms of negative and positive emotions to feedback overall.

**Connectedness.** There was also a significant interaction predicting levels of feelings of closeness ( $F(1, 216) = 61.54, p < .0001, \eta_p^2 = .22$ , Figure 8). Similar to the pattern of results for emotional response, Eu-Ams reported more extreme differences in feelings of closeness after receiving negative and positive feedback, compared to Koreans (Eu-Am:  $t(111) = -14.57, p < .0001$ , Korean  $t(129) = -5.63, p < .0001$ ).

Figure 8 Study 5: Cultural Differences in Feelings of Closeness After Negative and Positive Feedback



Of less interest, there was a main effect of Feedback Valence and Nation, with overall people rating greater feelings of closeness after positive than negative feedback ( $F(1, 216) = 224.43, p < .0001, \eta_p^2 = .51$ ), and Koreans overall reporting feeling greater levels of closeness than Eu-Ams ( $F(1, 216) = 58.04, p < .001, \eta_p^2 = .21$ ).

The third scenario had the same results with a significant Nation x Feedback Valence interaction ( $F(1, 211) = 4.05, p = .046, \eta_p^2 = .02$ ), main effect of Feedback Valence ( $F(1, 211) = 118.08, p < .0001, \eta_p^2 = .36$ ), and main effect of Nation ( $F(1, 211) = 9.01, p = .003, \eta_p^2 = .04$ ).

**Agreement/ awareness.** The Nation x Feedback Valence interaction was significant for agreement/ awareness,  $F(1, 216) = 41.25, p < .0001, \eta_p^2 = .16$ . Eu-Ams

reported more extreme differences in levels of agreement/ awareness toward negative and positive feedback, compared to Koreans (Eu-Am:  $t(111) = -9.08, p < .0001$ , Korean:  $t(129) = -2.31, p = .022$ ). There was a main effect of Feedback Valence, with people overall rating greater agreement/ awareness in the positive feedback vignettes compared to negative ones ( $F(1, 216) = 82.40, p < .0001, \eta_p^2 = .28$ ). There was also a main effect of Nation, with Koreans rating greater levels of agreement and awareness toward feedback overall, than Eu-Ams ( $F(1, 216) = 6.20, \eta_p^2 = .03$ ).

Surprisingly, there was not a significant Nation x Feedback Valence interaction for the third scenario,  $F(1, 214) = .20, ns$ . There was main effect of Feedback Valence ( $F(1, 214) = 81.53, p < .0001, \eta_p^2 = .28$ , positive feedback higher), but no main effect of Nation ( $F(1, 214) = 2.14, ns$ ).

**Improvability.** There was a significant Nation x Feedback Valence interaction ( $F(1, 216) = 6.47, p = .012, \eta_p^2 = .03$ ) for how much participants indicated they would want to work on the feedback they received, with Eu-Ams reporting a more extreme difference in their response to positive and negative feedback compared to Koreans (Eu-Am:  $t(111) = 2.11, p = .037$ , Korean:  $t(129) = -1.66, ns$ ). There was no main effect of Feedback Valence ( $F(1, 216) = .77, ns$ ), but there was a main effect of Nation with Koreans reporting that they could work on the content of the feedback more overall than Eu-Ams ( $F(1, 216) = 20.15, p < .0001, \eta_p^2 = .09$ ).

There was a different pattern of results for the third scenario for improvability of the feedback. The Nation x Feedback Valence interaction was significant ( $F(1, 213) = 19.06, p < .0001, \eta_p^2 = .08$ ), but surprisingly for the third scenario on lifestyle

(between-groups), there was a greater difference in reported improbability between positive and negative feedback for Koreans than Eu-Ams. Koreans reported greater improbability for positive feedback than negative feedback, while the pattern was surprisingly in the opposite direction for Eu-Ams. Eu-Ams reporting greater improbability for negative than positive feedback was a surprising, but isolated finding. There was a main effect of Nation ( $F(1, 213) = 5.01, p = .026, \eta_p^2 = .02$ , Koreans higher), but no main effect of Feedback Valence ( $F(1, 213) = 3.63, ns$ ).

### **Examining Relational Mobility as a Mechanism (Feedback Valence x Relational Mobility Prime)**

Although I had predicted that participants primed with low relational mobility would have smaller differences in their responses to negative and positive feedback compared to participants primed with high relational mobility (mirroring the Nation x Feedback Valence interaction), I did not find this result. There were no significant Feedback Valence x Relational Mobility Prime interactions for negative emotions ( $F(1, 214) = .23, ns$ ), positive emotions ( $F(1, 213) = 1.53, ns$ ), connectedness ( $F(1, 215) = .96, ns$ ), agree/ aware ( $F(1, 215) = .12, ns$ ), or improbability ( $F(1, 215) = 1.06, ns$ ), suggesting that primed relational mobility did not moderate participants' responses to negative and positive feedback.

Perhaps, not surprisingly, there was however a significant main effect of Relational Mobility Prime predicting positive emotions ( $F(1, 213) = 6.47, p = .012, \eta_p^2 = .03$ ) and connectedness ( $F(1, 215) = 5.53, p = .03, \eta_p^2 = .03$ ) with participants primed with low relational mobility reporting greater positive emotions and greater

feelings of closeness overall, compared to participants primed with high relational mobility. There was also a marginally significant main effect of Relational Mobility predicting agree/aware ( $F(1, 215) = 3.81, p = .052, \eta_p^2 = .02$ ), with greater levels of agreement/ awareness reported by participants primed with low relational mobility than those primed with high relational mobility. The Relational Mobility Prime did not predict negative emotional responses ( $F(1, 214) = .00, ns$ ).

The results were the same for the third scenario with no significant Feedback Valence x Relational Mobility Prime interactions for negative emotions ( $F(1, 211) = .02, ns$ ), positive emotions ( $F(1, 213) = .56, ns$ ), connectedness ( $F(1, 210) = .66, ns$ ), agree/ aware,  $F(1, 213) = .13, ns$ ), and improvability ( $F(1, 212) = .02, ns$ ). There was also a significant main effect of Relational Mobility Prime for positive emotions ( $F(1, 213) = 3.94, p = .048, \eta_p^2 = .02$ ) and connectedness ( $F(1, 210) = .66, p = .026, \eta_p^2 = .02$ ), with individuals primed with low relational mobility reporting greater positive emotions and feelings of closeness. There was no significant main effect of Relational Mobility Prime for negative emotions ( $F(1, 211) = 1.30, ns$ ), agree/aware ( $F(1, 213) = 1.45, ns$ ), and improvability ( $F(1, 212) = .72, ns$ ).

### **Does Relational Mobility Function Similarly Across Cultural Contexts? (Nation x Feedback Valence x Relational Mobility Prime)**

I had predicted a non-significant three-way interaction between Nation x Feedback Valence x Relational Mobility, which would suggest that Relational Mobility would function similarly across cultural contexts. All of the three-way interactions were not significant (negative emotions:  $F(1, 212) = .01, ns$ , positive



emotions:  $F(1, 211) = .07, ns$ , closeness:  $F(1, 213) = .07, ns$ , agreement/ awareness:  $F(1, 213) = .56, ns$ , improvability:  $F(1, 213) = 3.33, ns$ ). Although there was a significant difference in positive emotional response and greater feelings of closeness between the Relational Mobility Prime groups, the prime did not lead to differential responses to negative and positive feedback (Feedback Valence x Relational Mobility Prime). Therefore, I cannot interpret the non-significant three-way interactions as evidence for Relational Mobility as a mechanism of cultural differences in response to feedback.

### **Discussion**

Study 5 also replicated the general pattern of results from previous studies using two sets of analyses; one set was within-groups design and one set was between-groups for Feedback Valence). Compared to Eu-Ams, Koreans showed a more favorable response in terms of emotional response and connectedness to hypothetical negative feedback from a member of a campus organization they were part of. There were different results for the first and second set of analyses for agreement/ awareness and improvability, which could be due to the lower level of demand for the third scenario (because participants received either positive or negative), or due to the topic of feedback.

Although participants rated the low relational mobility campus organization as being lower in relational mobility and higher in social stickiness, the Relational Mobility Prime did not lead to differential response to negative and positive feedback.

However, there was a main effect of the Relational Mobility Prime with participants in the low relational mobility group reporting that they would feel greater positive emotions and feeling greater levels of closeness after imagining receiving feedback in general from another campus organization member, compared to participants in the high relational mobility group, suggesting that people may have more favorable responses to feedback overall when they feel like they are part of a group with stronger, stickier ties.

## Chapter 6

### STUDY 6: IN-THE-MOMENT-RESPONSES TO FEEDBACK FROM A CLOSE FRIEND

In this study, I attempted to increase the experimental realism of the study as much as possible by looking at real pairs of friends. Rather than participants recalling and reporting their past interactions with friends or responding to a hypothetical situation, I examined in-the-moment responses to feedback received from an actual close friend. Participants would respond to questions immediately after receiving each type of feedback from their friend and their facial expressions were recorded throughout the entire session.

Although the interaction would occur between actual pairs of friends, the type of feedback that participants received from their friend was bogus feedback assigned to them, to ensure that negative feedback would actually occur during the interaction (in order to examine cultural differences in response to *negative* feedback). Post-feedback levels of connectedness, as well as perceived agreement/ awareness between friends, and improvability after feedback were measured to examine the potential mechanisms of the model. Pre-feedback levels of connectedness and perceived awareness was also measured to control for baseline differences in connectedness and awareness.

I expected to replicate the pattern of results from the preliminary studies and find that overall, East Asians would respond more favorably to negative feedback from their friends compared to European-Americans, but there will be reduced cultural

differences in response to positive feedback (Nation x Feedback Valence). I expected to replicate this pattern of results not only for self-reported emotional responses, but also coded facial expressions after feedback. In addition, because there is temporal precedence in this study, I could examine whether baseline measures of connectedness and agreement/ awareness predict differential responses feedback.

In this study, I recruited Chinese international students rather than Korean students. It was challenging to recruit Koreans for an in-person study due to the fewer number of Korean students enrolled in PSYC100, the English-learning exchange program, or at the entire University of Delaware. While I do not assume that Koreans and Chinese are, and will always behave in the same way, based on some shared historical and philosophical background, as well as conversations with other Chinese students give me reason to predict that the same dynamic would apply for Chinese participants. Chinese participants in previous studies (Zhong, Morling, & Lee, 2016) also largely responded to feedback vignettes in the same way as Korean participants, giving further support that I could expect the pattern of results for Chinese to be similar to Koreans.

## **Method**

### **Participants**

Participants consisted of 66 female European-American undergraduates enrolled in PSYC 100 at a Mid-Atlantic university and 42 female Chinese students enrolled in PSYC100, enrolled in an English-learning exchange program, or recruited

through advertising from the same university. Because I was unable to recruit as many participants as I initially planned, I used G\*Power 3.1 (Faul et al., 2007) to determine post-hoc the adequacy of the sample size. Effect sizes ranged from effect size  $f = .20$  to  $f = .53$ . Inputting effect size of .2 led to power of .84 and inputting effect size of .5 led to power of 1.00.

Participants who indicated during the pretesting period that they had a close friend currently enrolled in PSYC100 were recruited first. If a participant did not have a close friend in PSYC100, they were asked to bring with them a close friend currently enrolled as a student at the same university. Participants from the English-learning exchange program were recruited at least two weeks after the start of the program so they would have had time to create friendships within the program. Participants who were not enrolled in PSYC100 were compensated \$5 for their participation.

## **Materials**

**Feedback stimuli.** To ensure that all participants received one piece of positive and negative feedback, I created the feedback stimuli that participants received. While participants thought that the feedback was coming from their friend sitting in the other room, they actually received feedback on the topic of their choice that was created for the study.

Participants could select from 12 topics to receive feedback about: hair, makeup, sense of style, grades, study habits, workout habits, eating habits, spending habits, cleanliness, personality, hobbies, and relationships. These topics were created based on the examples of feedback that participants in preliminary Study 1 had

actually received from their own friends. I created positive and negative feedback for each topic that were phrased as a statement (e.g., “I don’t think you’ve been handling stress well lately”, “You seem to be handling stress really well lately”; see Table 6 for full list of stimuli). The feedback did not contain any advice or explicit suggestions for improvement.

Table 6 Study 6: Positive and Negative Feedback Based on Topic Choice

Topic	Negative Feedback	Positive Feedback
Hair	Your hair is kind of frizzy today.	Your hair looks really good today.
Makeup	Your makeup is looking a little dull today.	Your makeup looks really good today.
Sense of style	What you’re wearing is a little boring today.	What you’re wearing looks really good today.
Grades	It seems like you’re struggling in your classes.	It seems like you’re doing really well in your classes.
Study habits	I’ve noticed that you’ve been procrastinating lately.	I’ve noticed that you’ve been studying really hard lately.
Workout habits	I haven’t really seen you working out lately.	I’ve noticed that you seem to be working out .
Eating habits	I haven’t really seen you eating healthy lately.	I’ve noticed that you seem to be eating really healthy lately.
Spending habits	I don’t think you’ve been really smart with your spending lately.	I think you’ve been really smart with your spending lately.
Tidiness	I don’t think you’ve been really organized lately.	You seem to be really organized lately.
Personality	You’ve been really sensitive about things lately.	You’ve been really understanding about things lately.
Stress level	I don’t think you’ve been handling stress very well lately.	You seem to be handling stress very well lately.

**Baseline Connectedness.** Baseline connectedness before feedback exchange was measured on an interpersonal level of closeness and relationship quality, as well

as on a sociocultural level of perceived relational mobility. Participants also reported how long they have known their friend, and the length of friendship was converted to months.

**Relationship quality.** To assess the quality of friendship of the friend pairs, participants responded to their length of friendship, feelings of closeness (-100 *The furthest I can ever imagine being with someone* to + 100 *The closest I can ever imagine being with someone*), and Inclusion of Others in the Self Scale (Aron et al. 1992).

**Relational mobility.** The Relational Mobility Scale (Schug et al., 2010; Yuki et al., 2007), which has been translated and used in different cultural contexts, was used to examine participants' perceptions of how readily new relationships can be formed and old relationships can be terminated. Based on a recent study, three separate subscales of relational mobility were computed: social stickiness (bounded-ness of a relationship/ group), difficulty of entry (presence or lack of opportunities to create form relationships), and lack of freedom to choose (San Martin, 2014). The internal reliability of the overall scale was good for Eu-Ams ( $\alpha = .80$ ) but not as good for Chinese ( $\alpha = .57$ ). Internal reliability for the items measuring social stickiness was better (Eu-Am  $\alpha = .78$ , Chinese  $\alpha = .65$ ).

**Baseline Agreement/ Awareness.** Baseline agreement/ awareness was measured with 5 items assessing how much participants provided support and tried to be aware of their friend's needs (e.g., "How much do you think about your friend's needs, wants, and preferences?"), as well as 3-items assessing how much their friend

understood and were aware of their needs (e.g., “How much does your friend try to understand you better by imagining how things look from your perspective?”). The items were selected and modified from the Self-Dyadic Perspective Taking Scale and Other-Dyadic Perspective Taking Scale (Long, 1990; Long & Andrews, 1990, 1990). Both participants’ perceived awareness of their friends (Eu-Am:  $\alpha = .86$ , China:  $\alpha = .87$ ) and friends’ perceived awareness (Eu-Am:  $\alpha = .88$ , China:  $\alpha = .90$ ) had good internal reliability.

**Rating of feedback.** Participants rated the two pieces of feedback in terms of its valence, frequency of occurrence and how much they accepted the feedback.

**Valence rating of feedback.** Participants first rated the valence of the feedback they received on a -10 (*The most negative comment my friend has ever given me*) to +10 (*The most positive comment my friend has ever given me*) scale.

**Frequency.** To examine how often participants received positive and negative feedback in their daily lives, participants responded to how often their friends gave them comments like this on a response scale of 1 (*Never*), 2 (*Rarely/ Few times a year*), 3 (*Few times a month*), 4 (*Few times a week*), 5 (*Almost every day*), 6 (*All the time/ Multiple times a day*).

**Acceptance of feedback.** Participants reported how much they would accept or reject this piece of feedback on a -10 (*Completely reject*) to +10 (*Completely accept*) scale.

**Response to feedback.** After receiving feedback from their friend, participants responded to a variety of items assessing their feelings toward the feedback, their



relationship with their friend, agreement and perceived awareness of their friend, and their improvement motivations.

***Emotional response.*** Participants rated their positive (happy, supported, grateful) and negative emotional responses (sad, offended, annoyed) to the feedback on a 1 (*Not at all*) to 7 (*Extremely*) scale. Cronbach's alpha for the emotional responses are as follows: Positive feedback (positive emotions: Eu-Am  $\alpha = .82$ , China  $\alpha = .81$ , negative emotions: Eu-Am  $\alpha = .52$ , China  $\alpha = .87$ ), Negative feedback (positive emotions: Eu-Am  $\alpha = .79$ , China  $\alpha = .86$ , negative emotions: Eu-Am  $\alpha = .75$ , China  $\alpha = .89$ ). The lower internal reliability for Eu-Am negative emotions toward positive feedback suggests that I needed to test hypotheses about "sad and annoyed" separately from "offended".

***Connectedness.*** Connectedness after feedback was measured with two separate items. One item assessed post-feedback feelings of closeness measured on a -100 to +100 scale, and the second item assessed the extent to which receiving the feedback changed the relationship on a -10 (*My relationship feels worse*), 0 (*No change to my relationship*), +10 (*My relationship feels better*) scale.

***Agreement/ awareness.*** Agreement/ awareness in the relationship regarding the feedback was measured with six separate items asking about agreement to the feedback, the extent to which participants were already thinking about the feedback they received, perceived helpful intentions and sensitivity of the friend, the extent to which the friend was trying to see things from their perspective, and how much their friend knows them (e.g., "Based on the comment you received, how well do you think

your friend knows you?”). All items were responded to on a 1 to 7 scale using anchors respective to each item. Cronbach’s alpha for agreement/ awareness are as follows: Positive feedback (Eu-Am  $\alpha = .55$ , China  $\alpha = .84$ ), Negative feedback (Eu-Am  $\alpha = .80$ , China  $\alpha = .93$ ). The lower internal reliability for Eu-Am response to positive feedback suggested that agreement (agreeing to the feedback and having already thought about the feedback) may need to be treated differently from awareness (perceived helpful intentions, sensitivity of friend, perceived perspective-taking, and extent to which friend knows you) in this study.

***Improvability.*** Improvability was measured with two items addressing the extent to which the feedback they received was something they could work on, or made them feel like they wanted to improve themselves (e.g., “How much do you think the content of the feedback is something you could work on?”, “How much do you feel like you want to improve yourself after receiving this feedback?”). These items were responded to on a 1 to 7 scale using anchors respective to each item. There was decent internal reliability for Eu-Ams for Positive feedback  $\alpha = .68$ , but not for Chinese  $\alpha = .35$ , suggesting that the two items should be treated separately for positive feedback. There was good internal reliability for response to Negative feedback for both Eu-Ams ( $\alpha = .76$ ) and Chinese ( $\alpha = .86$ ).

***Perceived consensus ratings of feedback exchange.*** Measuring culture at the level of perceived consensus (Chiu et al., 2010; Wan et al., 2010; Zou et al., 2009), participants thought about fellow members in their culture and rated the likelihood that people’s friends would give negative and positive feedback, and how comfortable

“fellow members of their culture” would feel about giving negative and positive feedback to their friends. All items were responded to on a 1 (*Not at all*) to 7 (*Very*) scale.

**Self-esteem.** To address the potential issue that cultural differences in response to negative feedback may be due to cultural differences in self-reported measures of self-esteem (see Heine et al., 1999), participants rated their state self-esteem at the end of the study using a 20-item scale measuring self-esteem on different aspects of their self-concept (performance, appearance, social domains; Heatherton & Polivy, 1991). Internal reliability was good for Eu-Ams (Performance  $\alpha=.85$ , Appearance  $\alpha=.87$ , Social  $\alpha=.86$ ), but was poor for Chinese (Performance  $\alpha=.57$ , Appearance  $\alpha=.38$ , Social  $\alpha=.41$ ). Only the performance domain of self-esteem was used for the analysis because the other domains of self-esteem did not have good internal reliability for Chinese participants.

**Coding of facial expressions after feedback.** To examine behavioral responses to feedback, video footage of participants’ faces was coded. A research assistant noted the range of time from when the participant first saw the feedback on the screen to when they moved onto the items after the feedback (noted by the click sound on the trackpad to get to the page with the feedback and the click sound on the trackpad to move onto the next page). Three events were coded: baseline (approximately 30 seconds after the beginning of the study), first event (positive feedback), and the second event (negative feedback).

For each of the events, coders coded overall valence in the facial expression, and global impressions of anger, amusement, embarrassment, discomfort, and confusion/ surprise, as done in Cohen, Nisbett, Bowdle, & Schwarz, 1996. With the exception of overall valence, which was measured on a -10 (*Very negative*), 0 (*Neutral*), +10 (*Very positive*) scale, all items were responded to a on 0 (*Not at all*) to +10 (*Very*) scale with anchors respective to the item. The occurrence of smiling, laughing were also coded as No (0) or Yes (1). As exploratory items, shifting gaze to the right (amusement), shifting gaze down (embarrassment), head movement down (embarrassment), first head movement and gaze shift to the left (embarrassment) were also coded based on the behaviors associated with these emotions from Keltner (1995).

The coding was completed by coders from the same cultural background as the participants. The Chinese coder was an experimenter in the study and therefore knew the overall purpose of the study, but the Eu-Am coders were blind to the purpose of the study, as well as the different conditions in the study. Using the coding method from Keltner (1995), one person from each culture coded all of the participants and another person coded 13 participants to determine inter-rater agreement. Using the calculation of inter-rater agreement from Cohen et al. (1996), Pearson correlation coefficient  $r$  between the two coders were calculated for the items rated on the continuous scale. Cohen's kappa was calculated for inter-rater agreement for items coded as 0 or 1 ( $\kappa = 1.00$  is interpreted as 100% agreement).

***European-American facial expressions.*** For ratings of the response to positive feedback in Eu-Ams, there was a strong agreement between the two coders for ratings of overall valence ( $r = .68, p = .01$ ), amusement ( $r = .90, p < .0001$ ), and confusion/surprise ( $r = .60, p = .03$ ). There was low agreement for ratings of embarrassment ( $r = .29, ns$ ), and discomfort ( $r = -.33, ns$ ). Agreement for ratings of anger could not be calculated because one coder rated 0 for all 13 videos. There was perfect inter-rater agreement for smiling ( $\kappa = 1.00$ ). There was no agreement for laughing because one coder rated 0 for all videos ( $\chi^2$  cannot be calculated,  $\kappa = 0$ ).

For ratings of the response to negative feedback in Eu-Ams, there was also strong agreement for ratings of overall valence ( $r = .67, p = .006$ ) and amusement ( $r = .89, p < .001$ ), and a marginal level of agreement for discomfort ( $r = .52, p = .066$ ). There was low agreement for ratings of embarrassment ( $r = .37, ns$ ), confusion/surprise ( $r = .33, ns$ ), and agreement could not be calculated for anger because one coder rated 0 for all videos. There was perfect inter-rater agreement for smiling ( $\kappa = 1.00$ ), but low to fair inter-rater agreement for laughing ( $\kappa = .35$ ).

***Chinese facial expressions.*** For ratings of response to positive feedback in Chinese, there was strong agreement between the coders for overall valence ( $r = .93, p < .0001$ ), amusement ( $r = .93, p < .0001$ ), embarrassment ( $r = .79, p = .008$ ), and confusion/surprise ( $r = .87, p < .0001$ ). Agreement for anger and discomfort could not be calculated because at least one of the coders rated 0 for all 13 videos. There was perfect inter-rater agreement for smiling ( $\kappa = 1.00$ ) and laughing ( $\kappa = 1.00$ ).

For ratings of response to negative feedback in Chinese, there was strong agreement between coders for overall valence ( $r = .90, p < .0001$ ), amusement ( $r = .96, p < .0001$ ), and confusion/ surprise ( $r = .89, p < .0001$ ). Agreement for anger, embarrassment, and discomfort could not be calculated because one of the coders rated 0 for all 13 videos. There was moderate agreement for the coding of smiling ( $\kappa = .41$ ) and laughing ( $\kappa = .53$ ).

In summary, only the variables that showed decent inter-rater agreement were used for analysis (rated overall valence of facial expression, amusement, smiling). Gaze shifts and head movements were rare and difficult to code for both Eu-Ams and Chinese participants, because participants were looking at a computer screen when they received the feedback. Thus, they were not included in further analysis.

**Feedback-giver intentions.** Although it is not the goal in this study to examine the feedback-giver's perspective, participants were still asked to give their friend a piece of feedback and respond to items about their feelings and intentions as part of the cover story. Participants wrote about why they chose to send this particular feedback to their friend, and responded to four closed-ended questions about their intentions of sending this feedback to their friend (e.g., "I sent my friend this feedback to make him/her feel good about him/herself") on a 1 (*Strongly disagree*) to 7 (*Strongly agree*) scale. These items were inspired by previous research showing cultural differences in the motivations to increase closeness and increase self-esteem by providing social support to friends (Chen, Kim, Mojaverian, & Morling, 2012). Participants also rated how they felt about giving their friend this feedback (awkward,

helpful, warm, supportive, mean, empathetic) on a 1 (*Not at all*) to 7 (*Extremely*) scale. Because it was beyond the scope the dissertation, I did not analyze these results.

All experimental materials for Chinese participants were translated into Chinese, and a native speaker of Chinese conducted the lab sessions to ensure that participants understand all experimental procedures.

### **Procedure**

Pairs of friends were recruited to come into the lab together for the study. Participants were told that the purpose of the study was to look at how real friends exchange feedback with each other, and that they would be exchanging feedback on two topics. Participants were told that they would be communicating with each other from different rooms using an online program and that I would be filming them during the interaction with a webcam. After reading and signing the consent form giving permission to be filmed, the pair was separated into different rooms, each with a computer and a webcam. Although participants were guided to think that the interaction will involve a give and take process of exchanging feedback, they actually went through the exact same process in parallel. Participants were asked to choose option A or B to decide whether they would be giving or receiving feedback first, but both participants were told that they would be the ones receiving feedback first, and that their friends would be the ones giving the feedback first.

The program first asked participants to read through a list of topics and select one topic to receive their first piece of feedback. Participants selected their own topics based on the Institutional Review Board's suggestion that participants should have

some control over the feedback they received. After they select the topic they would like to or be okay with receiving feedback on and were presumably waiting for their friend to send them feedback on that topic, participants responded to questions on their baseline connectedness. Afterwards the screen displayed a message saying that their feedback was ready and on the next page the feedback given to them by their friend was displayed.

The first piece of feedback that the participants received was always a positive comment on the topic of their choice. The order of feedback was not randomized because positive feedback is more likely to be the baseline expectation in a friendship. I was concerned that receiving negative feedback first would affect the responses to the following positive feedback (making negative feedback the baseline expectation). After reading the first piece of feedback, participants rated the valence of the feedback, their emotional responses to the feedback, frequency of feedback of this type, and responded to a series of items assessing connectedness, agreement/awareness, and improvability.

Participants were then asked to select a second topic from the list to receive feedback on, and were prompted to send a piece of feedback on the topic chosen by their friend. The topic that their friend chose was always “study habits”. After sending feedback, participants answered several questions about why they chose to give this type of feedback and how they felt giving this feedback to their friend.

Participants then viewed the second piece of feedback on the topic of their choice, which was always be negative and responded to the same items they saw after



positive feedback. Finally, participants completed the state self-esteem scale and were told their friend did not select second topic and the study would end here.

At the conclusion of the study, both participants were brought back into the main room and were debriefed about the purpose and deception involved in the study. Experimenters emphasized that bogus feedback was given to them for the sake of the study and for ethical reasons (to not potentially harm the friendship and make participants uncomfortable by making them give negative feedback). The experimenter also talked to both participants together at the end of the study to ensure to the best of the experimenter's ability that the two participants feel good about themselves, and their relationship before leaving the lab.

## **Results**

### **Analysis Approach**

The design of the study was a 2 (Nation: European-American vs. Chinese) x 2 (Feedback Valence: Negative vs. Positive) mixed design. Since the dyads can be seen as indistinguishable (same nation, sex, length of relationship; see Kenny, 2015) I first examined if the data should be treated as nested by assessing the dependence (Intraclass correlation coefficient; ICC) of the data. If dependence existed in the data, I would analyze the data using Multilevel Modeling using MIXED models on SPSS; if there was no dependence in the data, I would analyze the results using MIXED Analysis of Variance.

I first looked at whether the data indicated that this would be a three-level nested model, with the two pieces of feedback nested within a person, and two people nested within a dyad. While the empty model for calculating ICC for a three-level model did not converge for many of the DVs (e.g., positive and negative emotional response), there were some DVs that suggested that I should treat the data as nested. Post-feedback relationship quality (ICC= 43.82% people nested within dyad, ICC= 12.62% feedback nested within person) and improvement motivation (ICC= 2.66% people nested within dyad, ICC= 8.89% feedback nested within person) were treated as a three-level model. Post-feedback closeness (ICC= 9.45%), frequency of feedback (ICC= 10.29%), awareness (ICC= 15.54%), and comfort level of giving feedback (ICC= 5.82%) was treated as a two-level model with people nested within a dyad. Therefore, all analyses were run using MIXED models on SPSS for parsimony in analysis.

### **Cultural Differences in Baseline Measures**

First I looked at cultural differences in the baseline measures of connectedness (feelings of closeness, Inclusion of Others in the Self, perceptions of social stickiness) and baseline measures of self to friend awareness and friend to self awareness. As expected, Chinese responded perceiving lower levels of relational mobility (Eu-Am  $M= 5.08$ ,  $SD= .62$ , Chinese  $M= 3.51$ ,  $SD= .52$ ,  $t(106)= 13.55$ ,  $p< .0001$ ) and greater levels of social stickiness (Eu-Am  $M= 3.30$   $SD= .84$ , Chinese  $M= 4.08$ ,  $SD= .71$ ,  $t(106)= -4.99$ ,  $p< .0001$ ) than Eu-Ams. However, Eu-Ams unexpectedly responded with greater levels the interpersonal connectedness measure of self and friend overlap

on the IOS scale (Eu-Ams  $M= 5.05$ ,  $SD= .1.07$ , Chinese  $M= 4.07$ ,  $SD= .1.31$ ,  $t(106)= 4.21$ ,  $p< .0001$ ). Eu-Ams also rated that their friend had greater awareness of their wants and needs compared to Chinese (Eu-Ams  $M= 5.62$ ,  $SD= .93$ , Chinese  $M= 4.81$ ,  $SD= 1.19$ ,  $t(106)= 3.94$ ,  $p= .012$ ). Although Eu-Ams reported knowing their friends for a longer period of time (Eu-Ams  $M= 40.67$  months,  $SD= 65.66$ , Chinese  $M= 19.19$  months,  $SD= 13.02$ ,  $t(72.84)= 2.58$ ,  $p< .0001$ ). There were no significant differences between Eu-Ams and Chinese for feelings of closeness (Eu-Ams  $M= 75.35$ ,  $SD= 16.43$ , Chinese  $M= 71.36$ ,  $SD= 17.66$ ,  $t(106)= 1.20$ ,  $ns$ ) and self-friend awareness (Eu-Ams  $M= 5.50$ ,  $SD= .89$ , Chinese  $M= 5.20$ ,  $SD= .1.20$ ,  $t(106)= 1.46$ ,  $ns$ ). For analysis of the key dependent variables (emotional response) and post feedback connectedness, I controlled for length of friendship, baseline feelings of closeness, and IOS. For analysis of agreement and awareness, I controlled for baseline self-friend awareness and friend-self awareness.

### **Rating of Feedback**

**Valence rating of feedback.** There was a significant Nation x Feedback Valence interaction predicting subjective ratings of the feedback ( $B= -3.57$ ,  $SE= .92$ ,  $p< .0001$ , 95% CI[-5.39, -1.75]). As expected, positive feedback was rated as more positive for both Eu-Ams and Chinese (Main effect of Feedback Valence:  $B= 9.17$ ,  $SE= .57$ ,  $p< .0001$ , 95% CI[8.05, 10.29]), but this difference was greater for Eu-Ams than Chinese. There was also a main effect of Nation, with Chinese rating the feedback overall more positive than Eu-Ams ( $B= 2.51$ ,  $SE= .67$ ,  $p< .0001$ , 95% CI[1.18, 3.83]). All means and standard deviations are presented in Table 7.

Table 7 Study 6: Compared to European-Americans (Eu-Am), Chinese Rate Negative Feedback as More Frequent and Likely to Occur in One's Cultural Context

DVs:	Simple Slope (Negative Feedback= 0, Positive Feedback= 1)						2-way Interaction (Eu-Am slope is greater than Chinese slope)		
	Eu-Am (0)			Chinese (1)			B	SE	95% CI
	M <sub>neg</sub> (SE)	M <sub>pos</sub> (SE)	B	SE	M <sub>neg</sub> (SE)	M <sub>pos</sub> (SE)	B	SE	
Primary DVs									
Rated valence of feedback	-2.23 (.41)	6.94 (.39)	9.17**	.57	.28 (.53)	5.88 (.50)	5.60**	.73	-3.57** [ -5.39, -1.75]
Frequency of feedback	2.32 (.15)	4.03 (.15)	1.71**	.16	2.37 (.19)	2.85 (.19)	.48*	.20	-1.23** [ -1.73, -.73]
Acceptance of feedback	4.74 (.41)	8.03 (.41)	3.47**	.55	5.75 (.52)	6.15 (.52)	.40	.68	-3.07* [ -4.79, -1.34]
Perceived Consensus DVs									
Likelihood of feedback occurrence	3.73 (.15)	6.14 (.15)	2.41**	.18	3.76 (.19)	4.68 (.19)	.92**	.30	-1.49** [ -2.08, -.90]
Comfort level of feedback exchange	3.20 (.20)	6.36 (.20)	3.17**	.19	4.03 (.25)	4.73 (.25)	.71*	.31	-2.46** [ -3.07, -1.85]

**Frequency of feedback.** There was a significant Nation x Feedback Valence interaction even after controlling for friendship length, baseline feelings of closeness, and IOS ( $B = -1.23$ ,  $SE = .25$ ,  $p < .0001$ , 95% CI[-1.73, -.73], see Table 7). Keeping their relationship length and quality constant, both Eu-Ams and Chinese reported that positive feedback like the one they just received occurred more frequently (Main effect of Feedback Valence:  $B = 1.71$ ,  $SE = .16$ ,  $p < .0001$ , 95% CI[1.40, 2.02]), but Eu-Ams reported greater differences between the frequency of positive and negative feedback (such that positive feedback was more frequent and negative feedback was less frequent). There were no overall cultural differences in the frequency of feedback occurrence ( $B = .05$ ,  $SE = .25$ ,  $ns$ , 95% CI[-.44, .54]), suggesting that the feedback used in the study were ones that were relatively common in both cultures.

**Acceptance of feedback.** There was a significant Nation x Feedback Valence interaction for acceptance of feedback ( $B = -3.07$ ,  $SE = .87$ ,  $p = .001$ , 95% CI[-4.79, -1.34]). Eu-Ams accepted positive feedback to a greater degree than negative feedback, but Chinese accepted positive and negative feedback equally. Of less interest, there was a main effect of Feedback Valence ( $B = 3.47$ ,  $SE = .55$ ,  $p < .0001$ , 95% CI[2.39, 4.55]) and Nation ( $B = 1.01$ ,  $SE = .68$ ,  $ns$ , 95% CI[-.34, 2.36]) with people overall accepting positive feedback more than negative feedback, and Chinese accepting feedback overall more than Eu-Ams.

### **Response to Feedback**

**Emotional response to feedback.** Controlling for friendship length, baseline feelings of closeness, and IOS, there was a significant Nation x Feedback Valence for

positive emotions ( $B = -1.42$ ,  $SE = .29$ ,  $p < .0001$ , 95% CI[-1.99, -.84]), sad and annoyed emotions ( $B = 1.06$ ,  $SE = .29$ ,  $p < .0001$ , 95% CI[.49, 1.64]), and offended emotions ( $B = 1.40$ ,  $SE = .32$ ,  $p < .0001$ , 95% CI[.77, 2.04]). Replicating the results from past studies, both Eu-Ams and Chinese had less positive and greater negative emotions toward negative than positive feedback, but the difference in response to the two types of feedback was larger for Eu-Ams (Figure 9). All means and standard deviations are presented in Table 8.

Figure 9 Study 6: Cultural Differences in Emotional Response to Negative and Positive Feedback

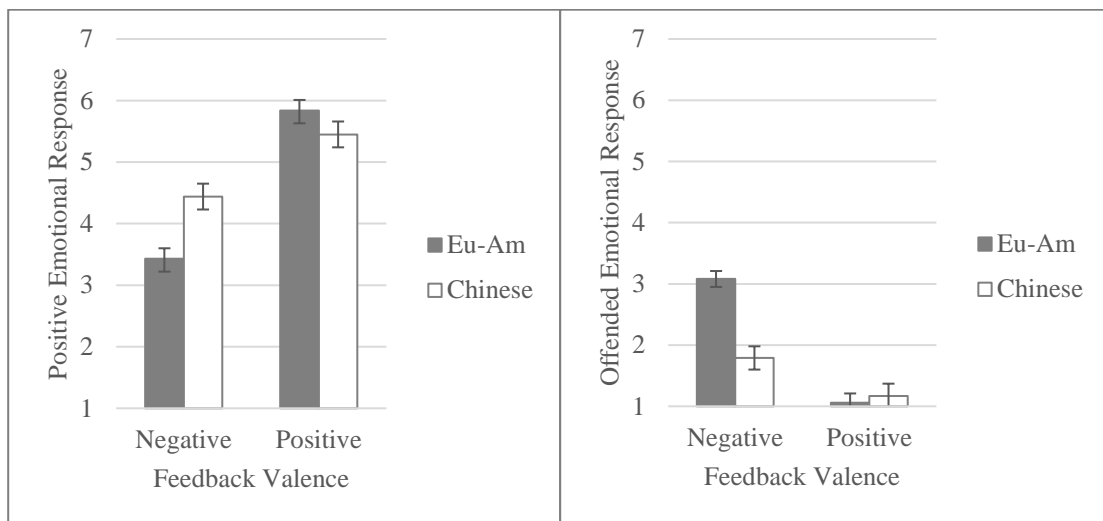


Table 8 Study 6: Compared to European-Americans (Eu-Am), Chinese Respond Less Negatively to Negative Feedback

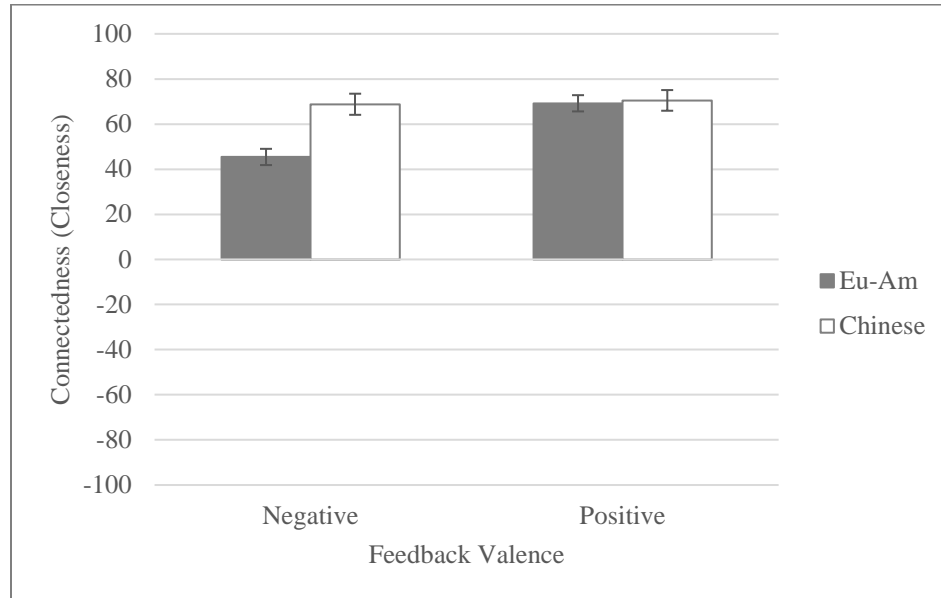
DVs:	Simple Slope (Negative Feedback= 0, Positive Feedback= 1)					2-way Interaction (Eu-Am slope is greater than Chinese slope)				
	Eu-Am (0)					Chinese (1)				
	M <sub>neg</sub> (SE)	M <sub>pos</sub> (SE)	B	SE		M <sub>neg</sub> (SE)	M <sub>pos</sub> (SE)	B	SE	
Primary DVs										
Positive emotional response	3.43 (.17)	5.84 (.17)	1.06**	.28		4.44 (.21)	5.45 (.21)	1.02**	.26	-1.40** [.33 -2.06, -.75]
Sad & annoyed emotional response	3.03 (.14)	1.11 (.14)	-1.92**	.18		2.05 (.17)	1.20 (.18)	-.86**	.23	1.06** [.49, 1.64]
Offended emotional response	3.08 (.13)	1.06 (.15)	-2.03**	.20		1.79 (.19)	1.17 (.20)	-.62*	.32	1.40** [.77, 2.04]
Connectedness, Agreement/ Awareness, Improvability DVs										
Feelings of closeness	45.43 (3.60)	69.22 (3.60)	23.79**	4.85		68.79 (4.68)	70.50 (4.58)	1.71	6.16	-22.08* [.784 -37.57, -6.59]
Relationship quality	.52 (.55)	2.23 (.46)	1.70*	.54		6.36 (.60)	6.56 (.58)	.20	.58	-1.50 [.79 -3.07, .07]
Agreement	4.48 (.19)	4.56 (.19)	.99	.26		4.67 (.24)	4.73 (.24)	.06	.33	-.04 [.79 -1.87, .79]
Awareness	4.27 (.14)	4.86 (.14)	.59*	.18		5.41 (.18)	5.61 (.18)	.21	.23	-.38 [.29 -1.96, .19]
Improvement motivation	5.22 (.22)	3.35 (.22)	-1.87**	.24		5.36 (.28)	3.79 (.28)	-1.57**	.30	.38 [.38 -1.45, 1.05]
Work on	5.67 (.19)	4.24 (.19)	-1.45**	.24		5.74 (.23)	5.60 (.23)	-.14	.31	1.30* [.39 .54, 2.07]

Of less interest, there was a main effect of Feedback Valence with people responding with overall less positive emotions  $B = 2.43$ ,  $SE = .18$ ,  $p < .0001$ , 95% CI[2.07, 2.79] and greater negative emotions (sad and annoyed:  $B = -1.92$ ,  $SE = .18$ ,  $p < .0001$ , 95% CI[-2.28, -1.56], offended: ( $B = -2.03$ ,  $SE = .20$ ,  $p < .0001$ , 95% CI[-2.42, -1.63]) for negative than positive feedback. There was also a main effect of Nation with Eu-Ams overall reporting more positive ( $B = 1.04$ ,  $SE = .27$ ,  $p < .0001$  95%, CI[.51, 1.56]) and less negative emotions (sad and annoyed:  $B = -.98$ ,  $SE = .23$ ,  $p < .0001$ , 95% CI[-1.43, -.52], offended:  $B = -2.03$ ,  $SE = .20$ ,  $p < .0001$ , 95% CI[-2.42, -1.63]).

**Post feedback connectedness.** Controlling for friendship length, baseline feelings of closeness, and IOS, there was a significant Nation x Feedback Valence interaction for post feedback feelings of closeness ( $B = -22.08$ ,  $SE = 7.84$ ,  $p = .006$ , 95% CI[-37.57, -6.59], Figure 10).



Figure 10 Study 6: Cultural Differences in Feelings of Closeness After Negative and Positive Feedback



While Eu-Ams reported feeling significantly closer to their friend after receiving positive compared to negative feedback, even after controlling for baseline connectedness, there was no difference in feelings of closeness after positive and negative feedback for Chinese. The Nation x Feedback Valence interaction for post feedback relationship quality was not significant, but it trended in the predicted direction with Eu-Ams reporting that their relationship felt better after positive compared to negative feedback, and Chinese reporting no significant difference in their relationship quality between positive and negative feedback ( $B = -1.50$ ,  $SE = .79$ ,  $p = .061$ , 95% CI[-3.07, .07]). Chinese participants reported that that their relationship

would get better after both positive ( $M= 5.65$ ,  $SD= .58$ ) and negative ( $M= 6.36$ ,  $SD= .60$ ) feedback, while Eu-Ams reported that their relationship would not change after negative feedback ( $M= .52$ ,  $SD= .55$ ) and would only get slightly better after positive feedback ( $M= 2.23$ ,  $SD= .46$ ). The more extreme points of the scale used by Chinese participants on this item gives some support that the cultural differences in this study are not just due to response biases (moderacy or extremity bias).

There was a main effect of Feedback Valence with people overall feeling closer and reporting that their relationship felt better with positive compared to negative feedback (closeness:  $B= 23.79$ ,  $SE= .18$ ,  $p< .0001$ , 95% CI[-2.28, -1.56], relationship quality:  $B= 1.70$ ,  $SE= .54$ ,  $p= .002$ , 95% CI[.63, 2.77]). There was also main effect of Nation with Chinese feeling closer and reporting an increase in relationship quality after feedback overall, compared to Eu-Ams (closeness:  $B= 23.36$ ,  $SE= 4.85$ ,  $p< .0001$ , 95% CI[11.38, 35.34], relationship quality:  $B= 5.84$ ,  $SE= .84$ ,  $p< .0001$ , 95% CI[4.16, 7.51]).

**Post feedback agreement and awareness.** Controlling for baseline self-friend awareness and friend-self awareness, there was no significant Nation x Feedback Valence interaction for agreement to feedback ( $B= -.04$ ,  $SE= .42$ ,  $ns$ , 95% CI[-.87, .79]) or perceived awareness ( $B= -.38$ ,  $SE= .29$ ,  $ns$ , 95% CI[-.96, .19]). There was no main effect of Feedback Valence for agreement to feedback ( $B= .10$ ,  $SE= .26$ ,  $ns$ , 95% CI[-.42, .62]) or Nation ( $B= .47$ ,  $SE= .31$ ,  $ns$ , 95% CI[-.14, 1.09]), but overall people rated greater awareness for positive than negative feedback ( $B= .59$ ,  $SE= .29$ ,  $p=.001$ ,

95% CI[.23, .95]) and Chinese felt greater awareness for feedback overall compared to Eu-Ams ( $B = 1.14$ ,  $SE = .24$ ,  $p < .0001$ , 95% CI[.67, 1.60]).

**Post feedback improvability.** There was a significant Nation x Feedback Valence interaction for how much people thought they could work on the content of the feedback ( $B = 1.30$ ,  $SE = .39$ ,  $p = .001$ , 95% CI[.54, 2.07]). Mirroring the results of Study 5, Eu-Ams reported feeling like they could work on the content of the negative more than positive feedback. However, Chinese thought they could work on both the content of the positive and negative feedback equally. There was no significant interaction for the item measuring motivations to improve oneself after feedback ( $B = .30$ ,  $SE = .38$ ,  $ns$ , 95% CI[-.45, 1.05]).

There was a main effect of Feedback Valence for both improvability DVs with people reporting greater improvement motivations ( $B = -1.87$ ,  $SE = .24$ ,  $p < .0001$ , 95% CI[-2.34, -1.40]) and reporting that they could work on the content ( $B = -1.45$ ,  $SE = .24$ ,  $p < .0001$ , 95% CI[-1.93, -.97]) of negative feedback compared to positive feedback. There were no nation differences (improvement motivation:  $B = .05$ ,  $SE = .30$ ,  $ns$ , 95% CI[-.54, .64], work on:  $B = .14$ ,  $SE = .36$ ,  $ns$ , 95% CI[-.57, .85]).

### **Perceived Consensus Ratings of Feedback Exchange**

The Nation x Feedback Valence interaction for likelihood and comfort level of feedback exchange were both significant (likelihood:  $B = -1.49$ ,  $SE = .30$ ,  $p < .0001$ , 95% CI[-2.08, -.90], comfort:  $B = -2.46$ ,  $SE = .31$ ,  $p < .0001$ , 95% CI[-3.07, -1.85], see Table 7). Both Eu-Ams and Chinese reported that positive feedback was likely to occur and was more comfortable than negative feedback for people in their cultural

context, but this difference was larger for Eu-Ams. Of less interest, there was a main effect of Feedback Valence for both DVs (likelihood:  $B = 2.41$ ,  $SE = .18$ ,  $p < .0001$ , 95% CI[2.08, 2.77], comfort:  $B = 3.17$ ,  $SE = .19$ ,  $p < .0001$ , 95% CI[2.79, 3.54], positive feedback higher). There was no main effect of Nation for likelihood ( $B = .03$ ,  $SE = .24$ ,  $ns$ , 95% CI[-.44, .51]), but Eu-Ams reported feeling perceiving greater comfort about giving feedback in their cultural context compared to Chinese ( $B = .83$ ,  $SE = .32$ ,  $p = .012$ , 95% CI[.19, 1.47], Eu-Am higher).

### **Facial Expressions After Feedback**

First, I examined whether facial expressions of overall valence and amusement would be associated with self-reports of positive and negative emotional responses. These facial expressions were selected because they had relatively good inter-coder agreement in both cultures. Surprisingly, there was no significant correlation between facial expressions and self-reported emotional responses to positive feedback both Chinese and Eu-Ams. There were also no significant correlations between facial expressions and self-reported emotional responses to negative feedback for Chinese. However, coded valence and amusement of facial expressions after negative feedback were significantly correlated in for Eu-Ams. Rated valence of expression was positively associated with self-report positive emotional response ( $r = .50$ ,  $p < .0001$ ), and negative associated with self-report sad and annoyed emotions ( $r = -.37$ ,  $p = .004$ ) and offended emotions ( $r = -.31$ ,  $p = .013$ ). Rated amusement of facial expression was positively associated with self-report positive emotions ( $r = .49$ ,  $p < .0001$ ), sad and annoyed emotions ( $r = -.39$ ,  $p = .002$ ), and offended emotions ( $r = -.30$ ,  $p = .019$ ).

Using MIXED ANOVA, I then examined whether there were cultural differences in facial expressions of overall valence and amusement after positive and negative feedback. Although facial expressions were only correlated for Eu-Am response to negative feedback, based on the results from self-reported emotions, I had predicted that Chinese, compared to Eu-Ams, would be rated as having more positive affect and greater expressions of amusement after negative feedback. I predicted reduced differences between Chinese and Eu-Ams in emotional response to positive feedback. However, there was no significant Nation (of Participants) x Feedback Valence for overall valence rating of facial expression ( $F(1, 99) = .24, ns$ ) and amusement ( $F(1, 99) = .01, ns$ ). Based on self-report results, I expected that there would be overall greater expressions of amusement and positive affect after positive, compared to negative feedback. However, surprisingly, there was no main effect of feedback type for overall valence ( $F(1, 99) = 1.32, ns$ ) and amusement ( $F(1, 99) = 1.44, ns$ ). Eu-Ams were rated to be more amused overall than Chinese ( $F(1, 99) = 8.41, p = .005, \eta_p^2 = .08$ ). An exploratory examination of percentages coded as smiling revealed that after negative feedback 59.4% of Eu-Ams smiled, compared to 73% Chinese. After positive feedback, 59.4% of Eu-Ams smiled, compared to 62.5% Chinese.

### **Testing the Model of Cultural Differences in Response to Feedback**

**Statistical mediation model.** To examine if the proposed mechanisms could explain cultural differences in the difference in response to positive and negative feedback, I calculated difference scores as I did in Study 4 (e.g., positive emotional response to positive feedback – positive emotional response to negative feedback). In

Study 5, because positive feedback always came before negative feedback, the difference scores can be seen as a change in the response from positive and negative feedback. Therefore, a larger score can either indicate greater change between positive and negative feedback (if the differences are positive scores, e.g., 3 vs. 1) *or* more zero-like change (if the differences are negative scores, e.g., -1 vs. -3). Note that this is not true mediation, but rather statistical mediation because there is no temporal precedence (the proposed mechanisms and emotional responses were measured at the same time).

Nation predicting Change in emotional response to positive and negative emotional feedback was entered into a path model using Mplus (Muthén & Muthén, 1998-2017), and the mechanisms that were part of this study (Connectedness: Change in feelings of closeness, Social stickiness, Agreement/ Awareness: Change in perceived awareness, Improvability: Change in beliefs that one could work on the feedback) were entered into the model simultaneously as mediators. All the proposed mechanisms were allowed to be associated with one another (see Table 9 for correlations between mechanisms and emotional responses) , and I controlled for baseline measures of friendship length, connectedness (closeness, IOS), and awareness (perceived friend's awareness to one's needs). Finally, the pairs of friends were clustered into pairs for analysis.

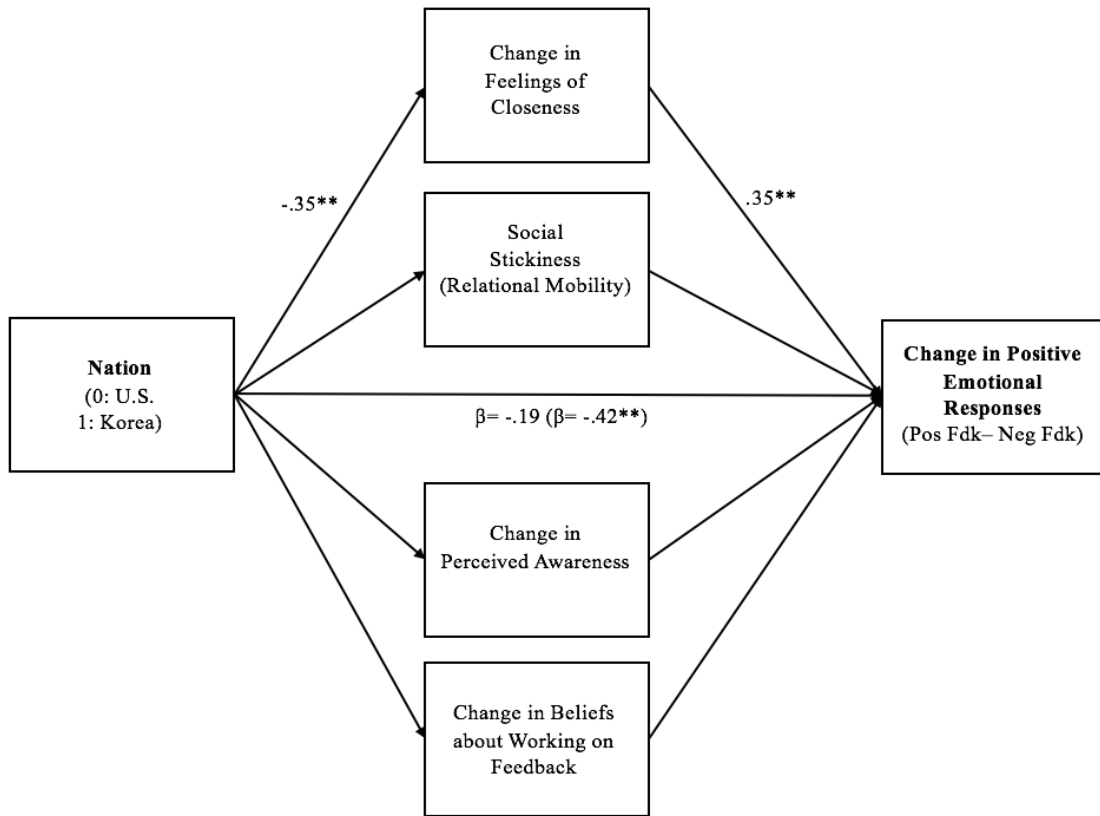
Table 9 Study 6: Correlations Between Proposed Mediators and Changes in Emotional Responses to Positive and Negative Feedback

	Change in positive emotional response	Change in sad/ annoyed emotional response	Change in offended emotional response	Change in feelings of closeness	Social stickiness	Change in perceived awareness
Change in positive emotional response						
Change in sad/ annoyed emotional response	-.63**					
Change in offended emotional response	-.55**	.76**				
Change in feelings of closeness	.55**	-.55**	-.47**			
Social stickiness	-.33**	.17	.24*	-.19		
Change in perceived awareness	.43**	-.48**	-.44**	.40**	-.02	
Change in wanting to work on content	-.08	.09	.08	.08	.22*	.05

*Change in positive emotional response.* Following the same procedure as Study 4, I first ran a test of partial mediation, allowing Nation to predict Change in positive emotional response to positive and negative feedback (including the direct effect in the model). The association between Nation and Change in positive emotional response was reduced from  $\beta = -.42$ ,  $SE = .29$ ,  $p < .0001$  to  $\beta = -.19$ ,  $SE = .11$ , *ns*. The indirect effect through Change in feelings of closeness was significant ( $\beta = -.12$ ,  $SE = .04$ ,  $p < .0001$ ), suggesting that the cultural difference in differential responses to positive and negative feedback could be in part explained by cultural differences in perceived social stickiness and feelings of closeness after positive and negative feedback (Figure 11).



Figure 11 Study 6: Changes in Feelings of Closeness Partially Mediates Cultural Differences in Positive Emotional Responses After Positive and Negative Feedback



Note: All proposed mediators were allowed to be associated with one another, and baseline measures of friendship length, connectedness (closeness, IOS), and awareness (perceived friend's awareness to one's needs) were controlled for in the model.

Even after controlling for baseline measures, Chinese compared to Eu-Ams, had a smaller (more zero-like) change in how close they felt to their friend after positive and negative feedback, and this smaller change in feelings of closeness was associated with smaller change in positive emotional responses to the feedback. That

is, Chinese felt close to their friends after feedback regardless of whether was positive or negative, and this partially explained why there were smaller changes in the emotional responses to feedback. The same results of connectedness as a mediator emerged even after controlling for Self-esteem (performance domain). Although this should be interpreted with caution because the scale was not as reliable for Chinese as it was for Eu-Ams, this pattern does give us initial evidence that cultural differences in response to feedback are not due to cultural differences in self-esteem. That is, Chinese did not respond more favorably to negative feedback from their friends because they have lower positive self-regard.

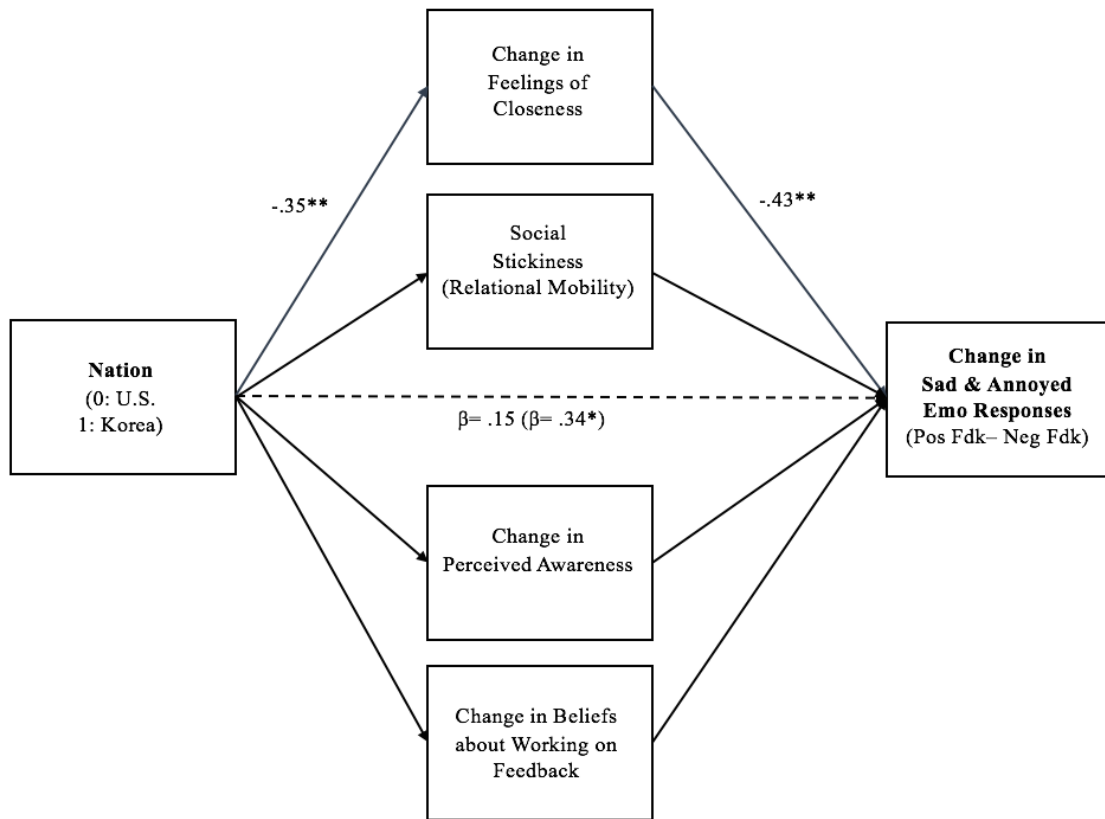
To test if Change in feelings of closeness fully mediated cultural differences in the Change in positive emotional response, I tested a full mediation model by fixing the direct effect to zero. The model had significantly worse fit than the saturated model as indicated by the  $\chi^2$  and TLI fit indices ( $\chi^2(1)= 4.49, p=.03$ , RMSEA= .18, 90% CI[.04, .36], CFI= .97, TLI= .40, SRMR= .02). Therefore, I did not interpret the full mediation model and concluded that Changes in feelings of closeness partially explained the cultural differences in the change of positive emotions toward positive and negative feedback.

***Change in negative emotional response.*** The test of partial mediation revealed that the direct effect from Nation to Change in sad and annoyed emotions was reduced from  $\beta=.34, SE=.29, p=.001$  to  $\beta=.15, SE=.11, ns$ . Replicating the results from Study 4, the indirect effect of Change in feelings of closeness was significant ( $\beta=.14, SE=.05, p=.005$ ). Even after controlling for baseline measures, Chinese had smaller

(more zero-like) changes in their feelings of closeness after positive and negative feedback, and these smaller changes were associated with more zero-like (less negative) change in their sad and offended emotional responses to the feedback. The same results emerged even after controlling for Performance Self-esteem.

To test whether Change in feelings of closeness could fully mediate cultural differences in the Change in sad and annoyed emotional responses between positive and negative emotions, I fixed the direct effect of Nation to Change in emotional responses to zero. Not considering RMSEA because of the small *df* model (Kenny et al., 2015), the full mediation model for Change in sad and annoyed emotional responses had decent fit with  $\chi^2(1) = 2.34$ , *ns*, RMSEA = .11, 90% CI [.00, .31], CFI = .99, TLI = .76, SRMR = .02. The indirect effect through Change in feelings of closeness was significant  $\beta = .15$ , *SE* = .05, *p* = .002, suggesting that Change in feelings of closeness after positive and negative feedback statistically, could fully explain cultural differences in Changes in sad and annoyed emotional responses from positive to negative feedback (Figure 12).

Figure 12 Study 6: Changes in Feelings of Closeness Fully Mediates Cultural Differences in Sad and Annoyed Emotional Responses After Positive and Negative Feedback



Note: All proposed mediators were allowed to be associated with one another, and baseline measures of friendship length, connectedness (closeness, IOS), and awareness (perceived friend's awareness to one's needs) were controlled for in the model.

The test of partial mediation for cultural differences in Change in offended emotions showed that the direct effect was only slightly reduced, from  $\beta = .39$ ,  $SE = .32$ ,  $p < .0001$  to  $\beta = .21$ ,  $SE = .11$ ,  $p = .05$ . While the sum of indirect effects was

significant,  $\beta = .18$ ,  $SE = .07$ ,  $p = .008$ ), the specific indirect effect of Change in feelings of closeness was only marginally significant ( $\beta = .09$ ,  $SE = .05$ ,  $p = .05$ ).

**An exploratory model with temporal precedence.** Although I had controlled for baseline measures of Connectedness (feelings of closeness, Inclusion of Others in the Self, Social stickiness) and Awareness (perceived level of friend's awareness for one's needs) mediators in the statistical mediation models above, I also tested a causal mediation model with temporal precedence of Nation coming before baseline measures, which came before response to the feedback. Controlling for friendship length, I included Baseline feelings of closeness, IOS, Social stickiness, and Friend's awareness of self into the model simultaneously as mediators. All mediators were allowed to be associated with one another.

Although I had expected that Chinese would report higher levels baseline connectedness and awareness, compared to Eu-Ams, Chinese reported greater levels only of social stickiness in their context. Surprisingly, Eu-Ams had reported greater baseline levels of self-other overlap (IOS) with their friend and greater perceived friend's awareness of their needs. Therefore, I did not expect that these baseline measures of connectedness and awareness would mediate cultural differences in emotional response to positive and negative feedback.

As expected, there was no reduction in the direct effect of Nation to Change in positive emotions ( $\beta = -.42$ ,  $SE = .29$ ,  $p < .0001$  to  $\beta = -.46$ ,  $SE = .11$ ,  $p < .0001$ ), Nation to Change in sad and annoyed emotions ( $\beta = .34$ ,  $SE = .29$ ,  $p = .001$  to  $\beta = .37$ ,  $SE = .11$ ,  $p = .001$ ), and Nation to Change in offended emotions ( $\beta = .39$ ,  $SE = .32$ ,  $p < .0001$  to  $\beta =$

.36,  $SE = .12$ ,  $p = .002$ ). There were no significant indirect effects (positive emotions  $\beta = .03$ ,  $SE = .05$ , *ns*, sad and annoyed emotions:  $\beta = -.04$ ,  $SE = .08$ , *ns*, offended emotions:  $\beta = .01$ ,  $SE = .07$ , *ns*), suggesting that the Baseline measures of connectedness and Baseline measures of awareness did not mediate cultural differences in differential response to positive and negative feedback.

### **Discussion**

The goal of Study 6 was to introduce experimental realism into the design by looking at responses to feedback between pairs of real friends. To ensure that negative feedback occurred during the study, all participants received bogus feedback that was created for the purposes of the study, but were feedback that could likely be exchanged on an everyday basis. Based on the debriefing and interview, the believability of the two pieces of feedback was high.

Replicating past studies using recalled and imagined feedback experiences, there was a significant cultural difference in response to negative and positive feedback. Even after controlling for baseline measures of connectedness and awareness, Chinese reported less extreme differences in their emotional responses and level of connectedness to negative and positive feedback, compared to Eu-Ams. The perceived consensus rating of likelihood of feedback occurrence and comfort level of feedback exchange in one's cultural context was also replicated, with Chinese rating that positive and negative feedback were more similar in their likelihood of occurrence and comfort level, compared to Eu-Ams.

Agreement and awareness and improvability had slightly different patterns of results. Although agreement and awareness emerged as one factor in Studies 4 and 5, the items did not cling together for Eu-Ams' response to positive feedback. Eu-Ams may not have agreed to the positive feedback they received because they thought it did not apply to them, but may have still rated that their friend knew them well and took their perspective.

Improvement motivation and wanting to work on the content of the feedback also emerged as two separate items for Chinese in response to positive feedback. Thinking that the content of the feedback is something that one could work on may be something different from feeling like you want to improve yourself in general after receiving positive feedback for Chinese participants. Mirroring the unexpected findings from Study 5, Eu-Ams thought they could work on the content of the negative feedback more than positive feedback. However, Chinese thought they could work on both the content of the positive and negative feedback equally. One explanation may be that after receiving positive feedback, East Asians feel that they will need to work just as hard to maintain the aspect of themselves they just received positive feedback on, as they feel they need to work to modify the aspect of themselves they received negative feedback on.

The results of the coded facial expressions were not as expected. Facial expressions were only significantly correlated with self-reported emotions for Eu-Am response to negative feedback. Therefore, the results of the facial expressions did not mirror the results of self-report. The only significant result of the coded facial

expressions were cultural differences in overall expressions of amusement. There could be two potential reasons for this. One reason may be due to cultural differences in the valuing of different intensity emotions (see ideal affect: Tsai, 2007) with Eu-Ams cultural contexts valuing affective states with greater arousal, such as excitement, and East Asian cultural contexts valuing affective states with lower arousal, such as calm. The overall cultural differences in amusement could also be because the coders of the facial expressions were also from different cultural backgrounds. While results from a meta-analysis of emotion recognition suggests that people are more reliable coders of the emotional expression of same-culture faces (Elfenbein & Ambady, 2002), there is also research suggesting that Eu-Ams tend to rate the same facial expressions of emotion as being more intense than East Asians do (Matsumoto & Ekman, 1989). Therefore, the Eu-Am coders coding Eu-Am facial expressions may have rated the emotional expressions as being greater in intensity (i.e., more amused) compared to the East Asian coders coding Chinese facial expressions.

Although this was not a statistically significant finding, one surprising trend was that both Eu-Ams and Chinese seemed to have more positive facial expressions after receiving negative, compared to positive feedback. Both Eu-Ams and Chinese were coded as being slightly more positive in valence and more amused after negative feedback, which was the opposite of my prediction. Incongruity theory suggests that people find humor “at what surprises them, is unexpected, or is odd in a nonthreatening way” (Berger, 1976; Deckers & Divine, 1981; McGhee, 1979, *cf.* Meyer, 2000, p. 313). The negative feedback may have elicited more amused



responses overall, because it mildly violated participants' expectations of the feedback they would receive from their friend, especially after receiving positive feedback earlier.

Another limitation was that the coding of facial expressions was difficult for this task in general. Participants were receiving feedback on a computer screen, so their eyes were pointing downward. They were also completing the tasks alone for 10-20 minutes, so many participants had relatively serious or neutral faces, compared to when they were in the room together with their friend. Future studies may consider having friends deliver bogus feedback to each other in person to be able to get a better camera angle and elicit more in-the-moment emotional responses.

Study 6 replicated the statistical mediation model from Study 4. Connectedness, specifically the interpersonal level of feelings of closeness, statistically mediated the cultural differences in positive and negative emotional responses to feedback (the change in response to positive and negative feedback). That is, Chinese felt close to their friend after receiving feedback regardless of the feedback valence, compared to Eu-Ams who felt much closer after receiving positive than negative feedback, and this smaller difference in feelings of closeness was associated with less extreme differences in emotional responses after positive and negative feedback. This result still held after controlling for self-esteem in the performance domain. Therefore, this means that self-esteem did not account for cultural differences in response to positive and negative feedback.

While I expected that cultural differences in baseline measures of connectedness and awareness would explain the cultural differences response to feedback, I did not find the expected result because there were either no cultural differences in the baseline measures or the cultural differences in the baseline measures were not in the expected direction. While Chinese reported perceiving greater levels of social stickiness in relationships in general, social stickiness did not significantly mediate cultural differences in response to feedback.

## **Chapter 7**

### **GENERAL DISCUSSION**

In this set of studies, I found that everyday types of negative feedback, such as commenting on a friend's study habits, workout habits, or personality, were received in a more favorable manner among East Asian (Koreans and Chinese), compared to European-American cultural contexts. While East Asians and Eu-Ams preferred positive over negative feedback in most cases, East Asians showed smaller differences in their responses across positive and negative feedback. I replicated the same pattern of results across six studies (three preliminary studies and three new studies conducted for this dissertation), using recall of previous experiences with one's own friends, imagining oneself in a hypothetical feedback situation, and responding in-the-moment to feedback "given" by one's real life friend in the next room.

I proposed and tested a model with three mechanisms of connectedness, agreement/ awareness, and improbability to explain the cultural differences in response to everyday feedback. Preliminary studies had established the mechanism of connectedness (closeness) and tested the mechanism of agreement. To address the mixed findings regarding improbability in three preliminary studies, Study 4 manipulated the mechanism of improbability by priming entity or incremental mindset, but improbability did not explain differential responses to negative and positive feedback. This was a surprising result because previous studies had found that incremental theorists tended to be motivated by setbacks and focus on putting in effort or strategy to address these setbacks, while entity theorists tended to show more

helpless responses, such as negative affect and abandonment of tasks (Henderson & Dweck, 1990; Zhao & Dweck, 1994, see Dweck, Chiu, & Hong, 1995 for review). Previous studies had also successfully primed participants' implicit theories (e.g., Chiu et al., 1997; Shaffer et al., 2015).

The non-significant results from Study 4 could be because the prime of entity and incremental mindset was too weak to largely shift their beliefs about improvability, or that a shift in beliefs about improvability to this amount was not enough affect responses to negative and positive feedback. Another possibility is that improvability is not a mechanism of cultural differences in response to feedback, in that improvability (motivation to work on the content of the feedback or improvement motivation) never emerged as a significant mechanism when testing the mediators in the statistical mediation model.

An exploratory test of statistical mediation revealed that the interpersonal level of connectedness was a probable mediator of the cultural difference in response to feedback. This replicates the findings from Study 1, in which after receiving negative feedback, Koreans felt closer to their friends than Eu-Ams, and increased feelings of closeness were associated with less negative and greater positive emotions. These results are also in line with past research on cultural differences in parenting, in which achievement pressure is associated with less negative outcomes in East Asians because East Asians feel greater levels of closeness, relatedness, or interdependence with their parents (e.g., Bao & Lam, 2008; Fu & Markus, 2014).

Study 5 manipulated relational mobility, which is the sociocultural level of connectedness. While primed levels of relational mobility did not lead to the expected difference in response to negative and positive feedback, people primed with low relational mobility did report greater feelings of connectedness and greater positive emotional responses, suggesting that being part of a group with stronger ties may lead to more favorable responses to feedback overall. Since the primes were about campus organizations that often worked in teams, participants imagining they were part a permanent working team may have felt closer and reported greater positive feelings to the other members overall. These results are in line with research showing that interdependent constructions of friendship in non-Western cultural contexts (e.g., West Africa), which are contexts with low relational mobility, emphasize instrumental help, such as advice-giving or perhaps feedback in general, as a key component of friendship closeness (Adams & Plaut, 2003). Given these results, it does not seem that exchanging everyday-nature feedback (e.g., "...you would do better on the paper if you hadn't procrastinated") is norm-violating behavior, as some studies show that low relational mobility contexts are associated with less willingness to defy social norms of the group (e.g., "Speaking your mind about an unpopular issue in a meeting at work", L. M. W. Li et al., 2015). At least in the context of members working together in a campus organization, feedback in general, does not seem to lead to negative responses.

Study 6 brought pairs of real friends into the lab and watched as they reacted to positive and negative feedback from their friend. Controlling for baseline measures of

connectedness and awareness, the cultural differences in response to negative and positive feedback replicated for real friends. In addition to personal responses to feedback, I also found cultural differences in intersubjective consensus to positive and negative feedback exchange. Chinese, compared to Eu-Ams, reported that fellow members of their culture would be more likely to give and feel more comfortable about negative feedback exchange. These results give support that people's personal responses to feedback are associated with their perception of shared norms (Chiu et al., 2010; Wan et al., 2010; Zou et al., 2009) and future studies could examine this shared norm of feedback exchange as a mediator to explain cultural differences in response to feedback.

I filmed participants' facial expressions and predicted that they would produce a similar pattern of results as the cultural differences based on self-report. However, I was unable to replicate these findings based on lack of coder agreement, difficulty in coding due to camera placement and the computer task, and lack of emotional expression overall. Future studies will address these limitations by using in-person feedback exchange or physiological measures, to better examine behavioral responses to feedback.

Finally, the overall model examining cultural differences in response to feedback showed that difference in feeling of closeness statistically mediated cultural differences in emotional response to feedback. This interpersonal level of connectedness (i.e. feelings of closeness) was the only significant mediator that partially explained differences in emotional response to feedback between Chinese

and Eu-Ams, and replicated the exploratory findings from Study 4. Addressing concerns that East Asians might only respond more favorably to negative feedback from their friends because they have lower levels of self-esteem, the mediation results were still significant, even after controlling for self-esteem in the performance domain. This provided some support that cultural difference in response to feedback was not only due to cultural differences in self-esteem. In this study, there were actually no cultural differences in self-esteem in the performance domain with both Eu-Ams and Chinese reporting moderate levels of self-esteem.

Based on the previous results finding that there are cultural differences in feelings of closeness after feedback and the statistical mediation results, I had expected baseline measures of connectedness to at least partially mediate cultural differences in emotional response to feedback. However, Chinese and Eu-Ams did not differ in many of the baseline measures, which may have been due to the study design. Participants were asked to bring a close, same-sex, same-culture friend with them to the study. Thus, participants may have brought a friend that was very close to them, which could explain the lack of cultural differences. On a scale from -100 (*the furthest I can ever imagine being with someone*) to +100 (*the closest I can ever imagine being with someone*), Eu-Ams and Chinese both reported feeling over +70, which indicates that everyone followed the study instructions and invited a very close friend to participate in the study with them.

The goal of the dissertation studies was to explore the mechanisms to explain the cultural differences in response to everyday negative feedback from friends. I

wanted to examine if negative feedback received in the context of connectedness (closeness or a perception of social stickiness), agreement/ awareness (my friend understands my needs, I understand my friend's intentions), and improvability (this feedback is something I can work on or motivates me) would be received more favorably. I predicted that East Asians and friendships in East Asian contexts would be higher in connectedness, agreement/ awareness, and improvability, but that these mechanisms functioned in the same manner across cultures. Therefore, I manipulated the mechanisms of improvability (Study 4) and the sociocultural level of connectedness, relational mobility (Study 5), and simultaneously tested all of the mechanisms are mediators in a statistical mediation model.

Given the robust findings on cultural differences in improvement motivation (e.g., Heine et al., 1999; Heine et al., 2001b), it was surprising that improvement motivation had mixed results across the six studies. Cultural differences on wanting to work on the content of the feedback or feeling motivated to improve oneself were in the expected direction in some cases, with East Asians showing greater improvability overall, but in some cases Eu-Ams reported wanting to work on the content of the negative feedback more, while East Asians showed no difference or showed greater workability toward positive feedback.

Overall, the dissertation studies gave strong support to the mechanism of connectedness, particularly the interpersonal level of feelings of closeness in response to feedback. In Studies 4 and 6, the interpersonal level of connectedness, measured as feelings of closeness, was a significant mediator explaining cultural differences in



differential responses to positive and negative feedback. Additionally, people primed with low relational mobility showed more positive responses to feedback overall, suggesting that having people imagine they are part of a stickier, tightly bound group might have some effect on how other feel towards comments and feedback from another member of that group.

### **Future Directions**

Given the results from the dissertation studies and past literature, connectedness seems to be the key probable mechanism of cultural differences in response to feedback. The operationalization of connectedness evolved since the beginning of the preliminary studies. Initially, connectedness was simply operationalized as feelings of closeness between two friends. However, I broadened my understanding of connectedness to also examine people's perceptions of the social structure that surrounds them, that is their social networks and relationships around them (e.g., Yuki & Schug, 2012). This sociocultural level of connectedness is more in line with the indigenous concepts of *jeong* and *amae* in Korea and Japan, which suggest strong bonds and a level of commitment that is not easily explained by just feelings of closeness.

I expected that perceiving relationships as more sticky and permanent, and perceiving less opportunities (or needing less opportunities) to create new relationships would be linked to how connected a person felt to another person in their social context. While the mediation results of the study seem to suggest that it is

particularly the interpersonal level of connectedness that explain the responses to feedback, it is not clear from this set of studies how perceptions of relationships in the social structure are associated with interpersonal feelings of closeness within that social context. Is it that a low relational mobility context affords more opportunities for people to become closer to each other, or that people in low relational mobility contexts are more likely to interpret comments and feedback from others as an indication of closeness? Future efforts will be given to further understanding the different components of connectedness: the interpersonal level of feelings of closeness and the sociocultural level of relational mobility.

Studies from North American cultural contexts give support to the findings that connectedness is a mechanism of the differences in response to feedback. Even in Eu-Am contexts, people in stable, committed relationships seem to be more accepting of negative feedback from their partners, not only because they can handle it, but also because this type of feedback is motivating to them (Fishbach, Eyal, & Finkelstein, 2010). A recent study looking at relationship depth and negative feedback exchange found that people who wrote about three similarities (vs. dissimilarities) about an acquaintance and three things that would make them feel closer (vs. distant) to the acquaintance, were more likely to request “negative feedback regarding how they could improve or do a better job (Finkelstein, Fishbach, & Tu, 2017, p. 72)”. Thus, relationship depth predicted the extent to which people preferred negative over positive feedback. A review of the literature suggests that in relationships that have an element of risk and rejection, such as dating relationships and new couples, people

prefer self-enhancing partners because it signals interest and communion. On the other hand, people in relationships with a high level of commitment, such as marriages, prefer self-verifying partners, even those who give negative feedback (see Kwang & Swann, 2010). In fact, married couples with negative self-views felt more intimate as they exchanged more negative feedback while dating partners that have an evaluative relationship, sought out acceptance and positive feedback (Swann, De La Ronde, & Hixon, 1994).

My understanding of the mechanism of agreement/ awareness has also evolved since the preliminary studies. As seen in Preliminary Study 3, the initial operationalization of this mechanism was about the level of agreement to feedback. I had predicted that if people received feedback on content that they had already thought about (i.e. agreed with), they would be more likely to have favorable emotional responses because the feedback-giver would be perceived as having more helpful intentions and more sensitive to the person receiving feedback. However, based on the literature examining cultural differences in the attention given to others' perspectives of themselves (e.g., Cohen & Gunz, 2002; Heine et al., 2008) and the norms of face culture (Y.H. Kim et al., 2010), it seemed like agreeing to the feedback or receiving feedback one agreed on would be associated with how aware the feedback-giver was to the needs of the receiver and how aware the feedback-receiver was to the intentions of the giver.

Results from the study, as well as theoretically, connectedness also seems to be associated with agreement/ awareness. Measures of connectedness and awareness

were correlated in multiple studies and it makes sense that people in committed relationship with strong, permanent ties, would be more aware and sensitive of each other's needs and preferences and would interpret their partner's behavior with better intentions. A study looking at romantic relationships found that couples with a high level of perceived understanding, or felt more understood by their partners (i.e. perceived awareness), did not have reduced relationship satisfaction after conflict, while couples with low perceived understanding experienced lower relationship satisfaction (Gordon & Chen, 2016). Relationship satisfaction, while not exactly the same as connectedness, can be seen as associated with interpersonal closeness. These results suggest that there is some link to perceived awareness and connectedness and this association should be further examined.

Because the preliminary and dissertation studies manipulated the other mechanisms separately (relational closeness, level of agreement, improvability, relational mobility), a future study could examine specifically the how perceived awareness effects people's acceptance of feedback. Utilizing the methodology from Finkelstein et al.'s (2017) study, in which participants looked through their social media page and identified an acquaintance they knew in real life, but not well, I could manipulate the level of perceived awareness by having participants either write about a time in which the person was sensitive and aware of their needs or or a time in which the person was insensitive and unaware of their needs. It would also be interesting to see if this manipulation would not only impact responses to negative feedback from

the acquaintance, but also impact how close people would report feeling to the acquaintance as well.

### **Conclusion**

Elon Musk affirmed the value of feedback from friends when he said, “Really pay attention to negative feedback and solicit it, particularly from friends... Hardly anyone does that, and it’s incredibly helpful” (Musk, 2013). These set of studies suggest that in East Asian (Korean and Chinese) contexts, friends are more accepting of the negative feedback they get than European-American contexts. This cultural difference in response to feedback may be because East Asians feel connected to their friends after feedback, regardless of if it is negative or positive, whereas this was generally not the case for European-Americans. Perhaps negative feedback is more acceptable in Korea, because their relationships in general, are more connected and feedback exchange is conducted with greater levels of awareness. Future directions will focus on further exploring the role of connectedness and perceived awareness in the interpersonal relationship, as well as the sociocultural context.

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## Appendix A

### IRB APPROVAL LETTER FOR STUDIES 4 & 5



RESEARCH OFFICE

210 Hulliher Hall  
University of Delaware  
Newark, Delaware 19716-1551  
Ph: 302/831-2136  
Fax: 302/831-2828

DATE: May 11, 2016

TO: Jeong Min Lee  
FROM: University of Delaware IRB

STUDY TITLE: [899185-1] Priming Mechanisms Study

SUBMISSION TYPE: New Project

ACTION: APPROVED  
APPROVAL DATE: May 11, 2016  
EXPIRATION DATE: May 10, 2017  
REVIEW TYPE: Expedited Review

REVIEW CATEGORY: Expedited review category # (7)

Thank you for your submission of New Project materials for this research study. The University of Delaware IRB has APPROVED your submission. This approval is based on an appropriate risk/benefit ratio and a study design wherein the risks have been minimized. All research must be conducted in accordance with this approved submission.

This submission has received Expedited Review based on the applicable federal regulation.

Please remember that informed consent is a process beginning with a description of the study and insurance of participant understanding followed by a signed consent form. Informed consent must continue throughout the study via a dialogue between the researcher and research participant. Federal regulations require each participant receive a copy of the signed consent document.

Please note that any revision to previously approved materials must be approved by this office prior to initiation. Please use the appropriate revision forms for this procedure.

All SERIOUS and UNEXPECTED adverse events must be reported to this office. Please use the appropriate adverse event forms for this procedure. All sponsor reporting requirements should also be followed.

Please report all NON-COMPLIANCE issues or COMPLAINTS regarding this study to this office.

Please note that all research records must be retained for a minimum of three years.

Based on the risks, this project requires Continuing Review by this office on an annual basis. Please use the appropriate renewal forms for this procedure.

If you have any questions, please contact Nicole Farnese-McFarlane at (302) 831-1119 or [nicolefm@udel.edu](mailto:nicolefm@udel.edu). Please include your study title and reference number in all correspondence with this office.

## Appendix B

### IRB APPROVAL LETTER FOR STUDY 6



RESEARCH OFFICE

210 Hullihen Hall  
University of Delaware  
Newark, Delaware 19716-1551  
Ph: 302/831-2136  
Fax: 302/831-2828

DATE: August 25, 2016

TO: Jeong Min Lee  
FROM: University of Delaware IRB

STUDY TITLE: [945284-1] Friendship Feedback Study

SUBMISSION TYPE: New Project

ACTION: APPROVED  
APPROVAL DATE: August 25, 2016  
EXPIRATION DATE: August 24, 2017  
REVIEW TYPE: Expedited Review

REVIEW CATEGORY: Expedited review category # (7)

Thank you for your submission of New Project materials for this research study. The University of Delaware IRB has APPROVED your submission. This approval is based on an appropriate risk/benefit ratio and a study design wherein the risks have been minimized. All research must be conducted in accordance with this approved submission.

This submission has received Expedited Review based on the applicable federal regulation.

Please remember that informed consent is a process beginning with a description of the study and insurance of participant understanding followed by a signed consent form. Informed consent must continue throughout the study via a dialogue between the researcher and research participant. Federal regulations require each participant receive a copy of the signed consent document.

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Please report all NON-COMPLIANCE issues or COMPLAINTS regarding this study to this office.

Please note that all research records must be retained for a minimum of three years.

Based on the risks, this project requires Continuing Review by this office on an annual basis. Please use the appropriate renewal forms for this procedure.

If you have any questions, please contact Nicole Farnese-McFarlane at (302) 831-1119 or [nicolefm@udel.edu](mailto:nicolefm@udel.edu). Please include your study title and reference number in all correspondence with this office.