

2012

Keep an eye on future feelings: Interpersonal affective forecasting and self-regulation

Meng Zhang
Iowa State University

Follow this and additional works at: <https://lib.dr.iastate.edu/etd>

 Part of the [Social Psychology Commons](#)

Recommended Citation

Zhang, Meng, "Keep an eye on future feelings: Interpersonal affective forecasting and self-regulation" (2012). *Graduate Theses and Dissertations*. 12542.
<https://lib.dr.iastate.edu/etd/12542>

This Dissertation is brought to you for free and open access by the Iowa State University Capstones, Theses and Dissertations at Iowa State University Digital Repository. It has been accepted for inclusion in Graduate Theses and Dissertations by an authorized administrator of Iowa State University Digital Repository. For more information, please contact digirep@iastate.edu.

Keep an eye on future feelings: Interpersonal affective forecasting and self-regulation

by

Meng Zhang

A dissertation submitted to the graduate faculty
in partial fulfillment of the requirements for the degree of
DOCTOR OF PHILOSOPHY

Major: Psychology

Program of Study Committee:
Susan E. Cross, Major Professor
Douglas Bonett
Carolyn Cutrona
Stephanie Madon
Daniel Russell
Meifen Wei

Iowa State University

Ames, Iowa

2012

Copyright © Meng Zhang, 2012. All rights reserved.

TABLE OF CONTENTS

ABSTRACT	iv
CHAPTER 1. DISSERTATION OVERVIEW	1
CHAPTER 2. ANTICIPATED AFFECT AND BEHAVIOR.....	2
CHAPTER 3. AFFECT AS SOCIAL INFORMAITON.....	6
CHAPTER 4. POSITIVE VERSUS NEGATIVE AFFECT FUNCTION	9
CHAPTER 5. INTERPERSONAL RELATIONSHIPS AND SELF-REGULATION.....	11
CHAPTER 6. MODERATION EFFECTS	14
CHAPTER 7. THE PRESENT RESEARCH.....	17
CHAPTER 8. STUDY 1	20
Method.....	23
Participants and design	23
Materials and procedure.....	24
Anticipated emotion measure.....	25
Target's motivation level measure.....	25
Participants' personal emotion measures.....	26
Relational-interdependent self-construal scale	26
Perspective-taking scale	26
Results	27
Overview of analyses.....	27
Manipulation check.....	28
Target's motivation levels in parents-related conditions.....	29
Relationship type: Friends versus parents	32

Discussion	35
CHAPTER 9. STUDY 2	37
Method	38
Participants and design	38
Procedure and material.....	39
Dependent measures	43
Results	44
Overview of analyses.....	44
Manipulation check.....	44
Self-regulation	46
Indirect emotion measures	49
Discussion	50
CHAPTER 10. GENERAL DISCUSSION	52
Implications for Goal Pursuit.....	55
Implications for Emotions in Interpersonal Situations.....	58
Cultural Differences and Self-Regulation	59
Conclusion	61
TABLES AND FIGURES	62
APPENDIX: MEASURES	73
REFERENCES	88

ABSTRACT

The anticipation of others' affect was hypothesized to influence individuals' self-regulation in personal and interpersonal goal pursuits. A scenario questionnaire study suggested that people tend to show higher motivation levels when they think about significant others' future positive affect and lower motivation levels when they think about significant others' future negative affect. Individuals high in relational-interdependent self-construal tend to have stronger effects of anticipated emotions on self-regulation intentions. A behavioral study suggested that both perceived competitiveness of the environment and individual differences in perspective taking influence the effects of anticipated emotions on self-regulation of interpersonal goal pursuit. These findings support the hypothesis that future-oriented affect influences self-regulation in an interpersonal context.

Key Words: affect, self-regulation, interpersonal relationship, goal pursuit

CHAPTER 1. DISSERTATION OVERVIEW

In daily life, people may automatically or deliberately anticipate others' feelings and use that as information to make decisions, thus guiding future behavior. For example, people may be more likely to help when they anticipate their friend's positive emotional response to their kindness to provide aid. In addition, husbands may be more likely to do the housework if they forecast their wives' smiles after noticing their work. In other situations, people choose to behave in a certain way because they want to elicit others' emotional responses. For example, parents sometimes want to use punishment to elicit their children's guilt and make them aware of their mistakes. These situations lead to the questions: When do people try to forecast others' feelings? Do people behave similarly in response to positive versus negative information of affect? What factors influence people's motivation to use information about affect to adjust or control their behavior? The present research intended to answer these questions by using goal pursuit situations to test whether forecasting others' future feelings alter individuals' self-regulation to live up to significant others' expectations or to adjust their behavior to make others happy.

CHAPTER 2. ANTICIPATED AFFECT AND BEHAVIOR

Previous research has shown how affect regulates judgment and behavior. Schwarz and Clore (1983) argue that affect serves as a resource for priming which individuals use when making judgments: individuals in a positive mood are more likely to recall positive experiences and use the recalled information to make favorable judgments, whereas those in a negative mood will recall negative experiences to make less favorable judgments (see Kunda, 2001, for a review). Some researchers treat affect as information reflecting the discrepancy between individuals' current and ideal status, which in turn motivates individuals to attain the ideal status (Carver, 2003; Carver & Scheier, 1990; Higgins, 1987). Another strand of affect study focuses on the function of anticipated emotions: Individuals tend to pursue positive anticipated emotional outcomes and avoid negative emotional outcomes (Baumeister, Vohs, DeWall, & Zhang, 2007; Mellers, Schwartz, & Ritov, 1999).

Human choice is often guided by anticipated emotion (Mellers, Schwartz, & Ritov, 1999). Early research showed that anticipated regret encourages individuals to collect information and make conservative decisions (Janis & Mann, 1977). People are less likely to vaccinate their children if they are induced to anticipate the regret they will feel if their children get ill or die because of vaccinations (Ritov & Baron, 1990). Anticipated regret is also found to promote health behavior: People show higher behavioral intention to do exercise, are more likely to adopt healthy behavior, and less likely to initiate smoking if they are induced to anticipate regret (Abraham, Henderson & Der, 2004; Abraham, & Sheeran, 2004; Conner, Sandberg, McMillan, & Higgins, 2006; see Sandberg & Conner, 2008, for a review).

Richard and her colleagues compared the functions of anticipated feelings and of current feelings and found that individuals who were induced to focus on their anticipated feelings rather than current feelings were more likely to choose healthy

behavior (Richard, Van Der Pligt, & De Vries, 1996). According to emotion feedback theory (Baumeister et al., 2007), current emotions serve a function as inner feedback for one's behavior: Positive affect indicates good behavior that may result in beneficial outcomes whereas negative affects suggests maladaptive behavior that may lead to deleterious outcomes. More importantly, the feedback function of affect provides information for future behavior: Negative feedback (negative emotion) may promote individuals' learning a lesson and avoiding the behavior in the future; positive feedback (positive emotion) may help individuals learn appropriate behavior and continue taking the same actions in the future. Thus, if people anticipate the feedback of future emotions, they tend to choose behavior that leads to positive rather than negative outcomes (or emotions). From this perspective, anticipation of future affect could be more important than current affect (Baumeister et al., 2007). Therefore, awareness of anticipated future affect may promote self-regulation intention or behavior, even more than current emotions.

Anticipation of future affect also helps individuals regulate their current affect, especially negative affect. For instance, researchers found that transgressors do good deeds to make themselves feel better and to avoid future guilt (Baumeister, Stillwell, & Heatherton, 1994). Another study demonstrated that people in negative moods tried to help others only when they believed that they would feel better after helping others (Manucia, Baumann, & Cialdini, 1984). If they felt that helping others would not repair their moods or might make their moods worse, they chose not to help. In consumer psychology, studies have shown that people feel uncertain and hesitant to purchase something if they anticipate regret in the future. Price guarantee strategy, which guarantees the same price for certain goods over a period of time, reduces consumers' anticipated regret, which in turn increases consumers' long-term satisfaction and reduces purchase anxiety (McConnell et al., 2000).

Do people anticipate future affect accurately? A variety of studies have shown that people tend to correctly forecast whether future events will be pleasant or not but they tend to overestimate the intensity and duration of their emotional reactions to future events (see Wilson & Gilbert, 2005, for a review). For example, college students overestimated the impact on their happiness of being assigned desirable versus undesirable dormitories: They predicted that they would be much less happy if they were assigned to undesirable rather than desirable dormitories. After one year, however, they indicated similar levels of happiness, regardless of the dormitory assignment (Dunn, Wilson, & Gilbert, 2003). The reason people make biased affective forecasts is that individuals tend to neglect the coping process for negative events and to be unaware of how fast they become accustomed to unexpected positive events (Wilson & Gilbert, 2005). There may be adaptive significance for biased affective forecasting. Baumeister, Vohs, DeWall, and Zhang (2007) suggested that it is possible that individuals use the biased anticipated emotions to motivate their self-regulation. For instance, individuals high in defensive pessimism tend to motivate themselves by exaggerated anticipation of future failure (Norem & Cantor, 1986).

In sum, previous research has demonstrated that anticipated emotions promote self-regulation; bias in affective forecasting may also motivate individuals to work hard. As shown in Figure 1, individuals learn from previous emotional experience that certain choices of behavior may lead to certain emotional outcomes and thus they store behavior–emotion associations in memory. If people are motivated to anticipate emotional outcomes according to their memory of behavior–emotion associations, they are more likely to choose the behavior leading to positive emotional outcomes (Baumeister et al., 2007). In the present study, I intended to extend the intrapersonal process of anticipated emotion to interpersonal situations. As illustrated in Figure 2, previous interpersonal experiences (stored as relational schema) may influence

individuals' ways of anticipating another person's emotions in the future. If individuals are motivated to anticipate another individual's future feelings and if they are in a non-competitive situation, they may choose to regulate their behavior to make another person feel good. Although few studies have addressed the role of anticipated emotions in an interpersonal situation, researchers have demonstrated the importance of current affective information in making sense of social situations and in choosing proper behavior. In the next section, I review several studies on the function of perceived others' emotions in interpersonal situations: How the perception of partners' emotion influences individuals' behavior.

CHAPTER 3. AFFECT AS SOCIAL INFORMATION

One interpersonal approach to affect has been proposed in the Emotion as Social Information Model (EASI; van Kleef, De Dreu, & Manstead, 2010). In this model they first suggested social decision-makers use their partners' emotions to make sense of situations (Manstead & Fischer, 2001). Individuals use their partners' emotional expressions as social input for their decision-making. For instance, people judge from their significant others' sad faces that something bad may have happened and they may decide to offer them help. Furthermore, their own feelings may be evoked by partners' emotional expressions (reciprocal or complementary emotions) that in turn help them to respond accordingly (Van Kleef, 2009). Thus, people may feel bad as well as good because of their significant others' negative feelings.

One important factor in affective effects on social decision-making is *epistemic motivation*, that is, the extent to which people are willing to expend effort to process information in social situations to help them make decisions (De Dreu & Carnevale, 2003). Individuals high in epistemic motivation are more likely than those low in epistemic motivation to gather information and engage in deliberate and systematic information processing (De Dreu, Nijstad, & Van Knippenberg, 2008). Previous studies have shown that there are individual differences in epistemic motivation (De Dreu & Carnevale, 2003). For example, individuals high in need for cognition, defined as intrinsic enjoyment of effortful cognitive activities (Petty & Cacioppo, 1986), tend to have high epistemic motivation. They are more motivated than those low in need for cognition to engage in systematic processing of arguments in persuasive communication and are less likely to be affected by peripheral information such as the perceived credibility of the communicator (Petty & Cacioppo, 1986). Situational constraints can also influence epistemic motivation. For instance, negotiators under time pressure are less likely to process information systematically than those who are not (De Dreu, 2003). Epistemic

motivation also depends on individuals' interpersonal relationships. Compared to those with a low interdependence level, individuals high in interdependence in a relationship are more motivated to pay attention to their partners' needs and desires (Gelfand & Christakopoulou, 1999). In the current study, epistemic motivation was expected to influence whether people were motivated to fully or partially process partners' emotional information, which in turn influences whether they would use emotional information to make sense of the social situation and guide subsequent behavior (Van Kleef, et al., 2010).

The model also suggests that the affective effects depend on the cooperative or the competitive nature of the interpersonal situations. For example, people are likely to feel bad because of their close others' negative feelings and may provide aid when the nature of the situation is cooperative. In contrast, in competitive situations, partners' negative emotional expressions suggest that they are in a disadvantaged status, which may indicate an advantageous situation for observers; thus, partners' bad feelings may invoke positive feelings for observers. Researchers have found that expressing positive emotions such as happiness (display of authentic smiles) in cooperative situations such as job interviews will increase trust and cooperation (Krumhuber et al., 2007; Krumhuber et al., 2009). In contrast, in competitive situations, partners' expressions of happiness were more likely than expressions of anger to provoke aggressive responses when observers were motivated to process their partners' emotional information (Van Kleef, De Dreu, & Manstead, 2004).

In sum, others' affect plays an important role in individuals' attempts to make sense of social situations and in their social decision-making. Whether individuals will process affective information depends on their epistemic motivation level. In addition, the nature of cooperative versus competitive situations moderates the function of emotions in interpersonal situations. In daily life, however, if individuals are familiar with their

partners or have interacted with their partners before, they may predict their partners' affect before they make social decisions that would elicit those emotions. Moreover, even if people are not familiar with their partners, they may use their previous interpersonal interaction experiences to infer others' probable emotional responses. Research on relational schemas, defined as cognitive structures representing regularities in patterns of interpersonal relatedness (Baldwin, 1992), has largely addressed how past social experiences affect current decision-making and behavior. For instance, people tend to activate and apply significant-other representations to perceive a new person, termed *transference* (Andersen, Glassman, Chen, & Cole, 1995). Relational schemas represent an individual's past experiences of how their own behavior influenced their partners' emotions. Thus, I proposed that relational schemas will influence individuals' expectations for others' future feelings (as shown in Figure 2). Furthermore, epistemic motivation may also influence whether individuals would anticipate others' feelings or not. Consistent with the Emotion as Social Information Model, the nature of competitiveness in the situation affects the subsequent choice of behavior.

Thus, affect plays a critical role in social interactions and in directing individuals' behaviors. One question arises: Does anticipating others' positive future emotions serve a similar role as anticipating others' future negative emotions in self-regulation? In the next section, I review the different functions of affect valence and their implications for the current study.

CHAPTER 4. POSITIVE VERSUS NEGATIVE AFFECT FUNCTION

Positive affect is believed to provide multiple resources for self-regulation in the West (Aspinwall, 1998; Fredrickson, 2001). First, positive emotions broaden the scope of attention and thought-action repertoires, and help increase personal resources such as social support (Fredrickson & Branigan, 2005; Johnson, Waugh, & Fredrickson, 2010). Positive mood leads to viewing a task as interesting, promoting self-regulation (Hirt, Melton, McDonald, & Harackiewicz, 1996). Second, participants in positive moods have higher motivation to maintain those moods and so make more careful decisions than those in negative moods (Wegener & Petty, 1994, 1996). Third, positive moods allow participants to bring broader categories and non-typical exemplars to mind, therefore promoting creativity, problem-solving, decision-making, prosocial behavior and negotiation (Fredrickson, 2001; Isen & Daubman, 1984; Isen, Johnson, Mertz, & Robinson, 1985). Furthermore, positive emotions help refill depleted self-regulatory resources: People who are induced to feel positively self-regulate on tasks as effectively as non-depleted individuals (Tice, Baumeister, Shmueli, & Muraven, 2007).

In contrast, negative affect has been considered resource-consuming. For example, in the process of coping with stress, the regulation of negative mood consumes psychological resources for coping, thus limiting individuals' capacity to detect potential stressors (Aspinwall, 1998). Information-processing may be hampered by the regulation of negative emotional arousal and negative emotions may narrow thought-action repertoires (Blascovich & Tomaka, 1996; Fredrickson & Branigan, 2005). Negative emotions may also signal people to reject an accessible goal and hinder goal pursuits (Fishbach & Labroo, 2007). Other studies have found that negative emotions consume self-regulatory resources, leading to self-defeating behaviors such as overeating and alcoholism (Baumeister & Heatherton, 1996; Tice, Bratslavsky, & Baumeister, 2001). Furthermore, a large body of research suggested that reflection over

and trying to understand negative feelings often lead to maladaptive results such as depressive symptoms (e.g. Grossmann & Kross, 2010; Nolen-Hoeksema, Wisco, & Lyubomirsky, 2008).

In the self-regulation domain, positive affect validates and strengthens positive self-views; one individual may think: "I am feeling good so that I must be really good at this task" (Centerbar, Schnal, Clore & Garvin, 2008). In addition, individuals may persist on similar tasks to obtain positive feelings again (Baumeister, Vohs, DeWall, & Zhang, 2007). In contrast, negative affect may validate and strengthen negative self-views. As mentioned above, negative affect also consumes self-regulatory resources, leading individuals to self-regulation failures (Baumeister & Heatherton, 1996). Previous studies have shown the effects of positive versus negative affect on self-regulation in academic goal pursuit. Individuals who feel positive about themselves on certain tasks tend to persist longer in the follow-up similar tasks, compared to those who feel negative (Zhang, Cross, & Hou, 2012). Another study showed that positive affect promoted college students' self-regulation intentions for their academic goals: students tended to plan longer work hours after they were induced to feel positive rather than feel negative (Zhang, Cross, & Hou, 2012). In short, a body of research suggests that positive affect may facilitate whereas negative affect may hinder individuals' self-regulation. Thus, I proposed that anticipation of others' positive affect in the future may boost self-regulation whereas anticipation of others' negative affect may discourage self-regulation.

The present study aimed to extend the current research by taking others' future emotions into account and exploring the functions of emotion in self-regulation in interpersonal situations. Previous studies have revealed that interpersonal relationships promote self-regulation. I will next review why and how interpersonal relationships impact self-regulation.

CHAPTER 5. INTERPERSONAL RELATIONSHIPS AND SELF-REGULATION

The assumption of the current study is that individuals are embedded in social networks and they are motivated to maintain or promote interpersonal relationships. Being connected is a basic human need (Baumeister & Leary, 1995). Perceived approval, care, and love from family or significant others are essential for one's self-esteem (Crocker, Luhtanen, Cooper, & Bouvrette, 2003). Research has revealed profound behavioral consequences for social rejection. Anticipation of social exclusion in the future and perceived current rejection similarly impairs individuals' self-regulation: Such participants are less likely than those in the control group to reject unhealthy food (Baumeister, DeWall, Ciarocco, & Twenge, 2005). Moreover, previous rejection experiences may lead people to form insecure working models of relationships, which in turn influence how they deal with subsequent relationships (Downey, Khouri, & Feldman, 1997). The impact of social rejection may be more severe for individuals high in rejection sensitivity (compared to people low in rejection sensitivity) because they are more likely to perceive rejection in an ambiguous situation (Downey & Feldman, 1996). People high in rejection sensitivity are more likely to experience threat, stress and negative arousal and less likely to process the information in a rational way, compared to those low on this dimension (Ayduk et al., 2000; Metcalfe & Mischel, 1999). Feelings of acceptance and connectedness are fundamental needs for human beings. As a result, people are motivated to maintain connections with others.

Goal pursuit behavior is also influenced by interpersonal relationships. Situational cues for interpersonal relationships may affect self-regulation. Studies of automatic self-regulation have found that priming significant others (by asking participants to imagine their significant others or by subliminal displays of their names) activated individuals' goals related to those significant others, therefore promoting their self-regulation (Fitzsimons & Bargh, 2003; Shah, 2003; see Fitzsimons & Finkel, 2010, for a review).

Fitzsimons and Bargh (2003) found that nearly half of the participants declared spontaneously that their academic success would make their mother proud. These participants were later asked to evaluate in a scenario a target character's level of motivation to succeed at school. The researchers presumed that participants would project their own motivation level to the target character. Participants were more likely to project that the target was highly motivated to succeed if their own mothers' representations, rather than their friends' representations, had been primed. The researchers argued that mothers' goals for participants were co-activated when representations of their mother were activated. The participants' friends had no school success goals for them; therefore, priming their friends' representations did not result in higher projected motivation for goal pursuit (Fitzsimons & Bargh, 2003). The underlying assumption is that these participants unconsciously wanted to use academic success to impress their mothers in order to maintain or promote good relationships with their mothers. Furthermore, the effects of interpersonal relationship representation (on self-regulation) were most salient when participants reported high closeness to their significant others (Shah, 2003) and when participants reported having the goal to make their mother proud (Fitzsimons & Bargh, 2003).

In summary, studies of automatic self-regulation have revealed that individuals' goal pursuit is affected by interpersonal relationships: If significant others hold particular goals for individuals, the individuals are more motivated to pursue those goals when their representations of their significant others are activated. All these studies focus on cognitive processes involved in how representations of significant others' are linked to goal representation and goal pursuit. The present study focused on how anticipation of significant others' *affect* may influence individuals' goal pursuit. Furthermore, I proposed that anticipation of significant others' *future affect* would be more influential than perception of significant others' *current affect* for goal pursuit. Thus, the present

research compared the effects of anticipated emotions versus current emotions on goal pursuit. In this case, cognitive representations of significant others were activated in both future (anticipation) and current conditions. Consistent with the previous argument, I expected that participants' self-regulation may increase in the future positive anticipation condition and may decrease in the future negative anticipation condition, compared to the current affect condition.

CHAPTER 6. MODERATION EFFECTS

Further studies have revealed that the association between priming of significant others and goal pursuit is moderated by many other factors: Need to belong, closeness to the significant other, chronic accessibility of the goal, interdependence of the relationship, presence of competing goals, needs for autonomy, and so forth (Morrison, Wheeler, & Smeesters, 2007; Shah, 2003; see Fitzsimons & Finkel, 2010, for a review). Specifically, people who are sensitive to social cues (social sensitivity, e.g., high in perspective-taking or relational-interdependent self-construal), are more likely to be motivated to pursue related goals when significant others are primed. For instance, individuals high in relational-interdependent self-construal, compared to those low in relational-interdependent self-construal, are more likely to adjust their behaviors according to their mothers' expectations. When their mothers were primed, participants high in relational-interdependent self-construal were more motivated than those low in relational-interdependent self-construal to work on an anagram task (similar to academic work; Morrison, Wheeler, & Smeesters, 2007). In sum, individual differences in social sensitivity moderate the priming effect of significant others on self-regulation. In the current study, I proposed that individual differences in social sensitivity may influence epistemic motivation to anticipate others' emotions in social situations, which may in turn influence subsequent self-regulation. As mentioned above, epistemic motivations are related to interdependence levels in relationships (Gelfand & Christakopoulou, 1999).

According to Cross and her colleagues (2000), relational-interdependent self-construal refers to the tendency to define oneself by relationships with close others. They also found in a series of studies that people high in relational-interdependent self-construal, compared to those low in relational-interdependent self-construal, tend to have better memories for relational information (Cross, Morris, & Gore, 2002), are better at using relational information to know others' values and beliefs (Cross & Morris, 2003),

are more likely to take others' needs into account in making decisions (Cross, Bacon, & Morris, 2000), and more importantly, are more likely to pursue goals for relationally autonomous reasons (reasons for goals based on needs, desires, and commitments within close relationships; Gore & Cross, 2006; Gore, Cross, & Kanagawa, 2009). People high in relational-interdependent self-construal tend to adjust themselves in response to others' needs, demands, and expectations. People low in relational-interdependent self-construal tend to behave according to their internal demands and neglect others' demands. This suggests that individuals who value interpersonal relationships are more motivated to control themselves in settings relevant to those relationships. Thus, individuals high in relational-interdependent self-construal were expected to be more likely than those low in relational-interdependent self-construal to anticipate the effects of their behavior on the others' emotional outcomes. Thus, they may choose a behavior strategy which may result in their partners' positive emotional outcomes. In contrast, individuals low in relational-interdependent self-construal were expected to be less likely to anticipate the effects of their behavior on others' emotional outcomes and consequently less motivated to regulate their behavior according to their partners' possible emotional outcomes. That is, relational-interdependent self-construal was expected to moderate the effect of anticipated emotions on self-regulation intention and behavior.

Similar to relational-interdependent self-construal, perspective-taking as a stable cognitive component of empathy also relates to social sensitivity. A broad way to define empathy is reactivity to the observed experience of others (Davis, 1983). A narrow definition is that empathy is the ability to take another person's point of view, to experience the same emotions of another, and to behave compassionately (Geer, Estupinan, Manguno-Mire, 2000). Marshall, Hudson, Jones, and Fernandez (1995) proposed a stage model of empathy. They suggest that the expression of empathy

includes emotion recognition, perspective-taking, emotion replication, and response decision. Davis (1983) first developed an individual difference measure of empathy (the Interpersonal Reactivity Index, IRI) based on such a multidimensional perspective. The *perspective-taking* scale taps “the tendency to spontaneously adopt the psychological view of others” (Davis, 1983, pp. 113); Thus, perspective-taking is an other-directed cognitive dimension, which is closely connected to interpersonal situations. Given that this study focuses on interpersonal processes, perspective-taking was used as a second measure for social sensitivity. According to Davis (1983), the cognitive ability of perspective-taking should help individuals predict the behavior of others, which in turn promotes harmony in interpersonal relationships. That is, individuals high in perspective-taking are believed to be high in epistemic motivation to anticipate others’ future affect, and consequently will be more likely to regulate their behavior according to others’ needs. Therefore, I proposed that, individuals high in perspective-taking would be more likely than those low in perspective-taking to anticipate others’ emotions, which may in turn influence individuals’ self-regulation intention and behavior.

As mentioned above, the nature of cooperative versus competitive situations moderates the function of affect in interpersonal situations. Individuals in different situations may interpret another individuals’ future affect differently: People may not care for their competitors’ future distress but may work hard to self-regulate when they forecast their cooperators’ future anxiety. Thus, it was expected that individuals in competitive versus cooperative situations may have different self-regulation outcomes. This situation effect was also expected to work together with relational-interdependent self-construal and perspective-taking characteristics to affect self-regulation. That is, I expected an interaction effect between situations (competitive versus cooperative) and individual differences in relational-interdependent self-construal and perspective-taking predicting self-regulation.

CHAPTER 7. THE PRESENT RESEARCH

Interpersonal relationships motivate individuals to regulate their goal pursuit. There are individual differences and situational constraints on this effect. Other studies have shown that anticipated emotion can motivate current behavior (Baumgartner, Pieters & Bagozzi, 2008; Mellers, Schwartz, & Ritov, 1999) and have shown how individuals use their partner's emotion to make sense of the situation and make decisions consequently (Van Kleef et al., 2010). The current studies focus on how anticipated emotions of significant others may influence the individuals' self-regulation of their goal pursuit.

The first study intended to test the link between anticipation of others' emotions and self-regulation intention (assessed as self-reported motivation levels for academic goal pursuit; as shown in Figure 2). I hypothesized that individuals would be more motivated to pursue academic success if they were induced to think about significant others' (parents) future positive emotions rather than neutral current emotions (Hypothesis 1a; for the list of the hypotheses, see Table 1); In contrast, individuals would be less motivated to pursue academic success if they were induced to think about significant others' (parents) future negative emotions, rather than current neutral emotions (Hypothesis 1b). I also hypothesized that relational-interdependent self-construal and perspective-taking would have an impact on individuals' self-regulation intention: Relational-interdependent self-construal and perspective-taking may affect individuals' epistemic motivation to anticipate others' future emotion reactions, which in turn influences individuals' self-regulation intention. People high in relational-interdependent self-construal or perspective-taking would be more motivated to infer others' future emotions and would be more likely to use anticipated emotion as information to interpret the situation and regulate their behavior. Specifically, I expected that the effects of anticipated emotions on self-regulation intention would be stronger

among individuals high in relational-interdependent self-construal or perspective-taking than those with low in relational-interdependent self-construal or perspective-taking (Hypothesis 2). Moreover, anticipated emotions were expected to mediate the relations between different valences of the condition (positive vs. negative vs. neutral) and self-regulation intention (Hypothesis 3). Furthermore, the relationship type (parents vs. friends) was also expected to work differently on self-regulation intention: First, participants were expected to anticipate different emotional responses for parents and friends in an academic event (Hypothesis 4); second, similar to Hypothesis 1, individuals would be more motivated to pursue academic success if they were induced to think about their friends' positive future emotions, rather than negative future emotions (Hypothesis 5); third, relationship relevance to academic success may influence the power of the anticipated emotion on self-regulation intention. That is, the mediation effect of anticipated emotions between condition valence (academic successes vs. academic failures) and self-regulation intention was expected to be stronger in the parents-future conditions than in the friends-future conditions (Hypothesis 6).

The second study was intended to explore how situational constraints may moderate the effects of anticipating others' emotions on individuals' self-regulation. Individuals may adjust their behavior to make others feel good if they are motivated to anticipate others' emotional outcomes even if they do not know each other very well in some circumstances, such as when people are partners in a cooperative situation. Specifically, I first hypothesized that participants in a cooperative situation would be more likely than those in a competitive situation to adjust their behavior in response to their partners' future emotions to promote relationship harmony (Hypothesis 7). Second, the effects of anticipated emotions on self-regulation may be influenced by individual differences and situational conditions at the same time. Even in the same cooperative or competitive condition, people with high versus low relational-interdependent self-

construal or perspective-taking may behave differently in regulating their behaviors. Thus, I expected that there would be an interaction effect between relational-interdependent self-construal and perspective-taking and situation conditions in predicting self-regulation (Hypothesis 8). Furthermore, implicit emotion measures would also be included to test whether individuals in cooperative the condition would be more accessible to emotional information than those in the competitive or control conditions and whether this effect would be moderated by individual differences in relational-interdependent self-construal and perspective-taking (Hypothesis 9).

In sum, two studies examined whether participants' anticipation of others' future emotions would influence their own self-regulation. Study 1 focused on personal goal pursuit (self-regulation intention) whereas Study 2 focuses on interpersonal goal pursuit (self-regulation behavior). Study 1 examined how anticipation of significant others' different emotional outcomes (positive versus negative) influenced individuals' personal achievement motivation. Study 2 explored how situational conditions, together with individual differences in relational-interdependent self-construal and perspective-taking, affected participants' self-regulation in a real interpersonal context.

CHAPTER 8. STUDY 1

The purpose of study 1 was to explore whether anticipation of significant others' future emotions would influence individuals' self-regulation intention. Participants were asked to read a college student's story and they were led to anticipate the emotions of the target's significant others – either her/his parents or friends. I assumed that participants would project their own self-regulation intention onto the target in the scenario and would rate his/her self-regulation intention accordingly (Fitzsimons & Bargh, 2003). Thus, self-regulation was measured using an indirect method. That is, although participants were asked to rate the targets' self-regulation intention, this was assumed to reflect their own self-regulation intention.

Unlike Fitzsimons and Bargh's (2003) work, this study focused on the effects of *emotion* rather than cognitive processes in interpersonal relationships for self-regulation. Thus, participants were asked to think of the target's parents' future positive/negative emotions or her/his friends' future positive/negative emotions (for the list of conditions, see Table 2). To rule out the alternative explanation that mere activation of significant others will enhance motivation (Fitzsimons & Bargh, 2003), this study also included another control condition: Participants were asked to think of the target's parents' current emotions in the control condition. No positive or negative valence was indicated for the current emotions condition. Thus, as shown in Table 2, there were five conditions in this study: parents- future-positive, parents-future-negative, friends-future-positive, friends-future-negative and parents-current-control conditions.

First, this study was designed to examine whether anticipation of significant others' future positive/negative emotions influenced self-regulation intention differently from thinking of significant others' current emotions. According to Fitzsimons and her colleague's work (2003), mere activation of significant others may lead to increase in self-regulation. If anticipation of emotions did not contribute to self-regulation intention,

participants in parents' future positive, parents' future negative and parents' current control conditions would report similar levels of the target's motivation level.

Alternatively, as mentioned above, individuals are believed to be more motivated by positive valence events and role models (Lockwood, Marshall, & Sadler, 2005). Thus, as was expected in the current research, anticipation of parents' future positive emotions would enhance individuals' self-regulation intention whereas anticipation of parents' future negative emotions would decrease individuals' self-regulation intention, compared to mere cognitive activation of parents' representations in the control condition.

Specifically, it was hypothesized that: a) participants would indicate a higher level of the estimated target's motivation level when they were in *parents-future-positive* condition (condition 1) than when they were in *parents-current-control* condition (condition 5); b) participants would indicate a lower level of the estimated target's motivation level when they were in *parents-future-negative* condition (condition 2) than when they were in *parents-current-control* condition (condition 5; Hypothesis 1, see Table 1).

Second, this study also explored whether the effect of anticipation of significant others' future emotions (*parents-future-positive* vs. *parents-future-negative* vs. *parents-current-control*) on self-regulation intention was moderated by relational-interdependent self-construal and perspective-taking: The effect was expected to be stronger among participants high in relational-interdependent self-construal or perspective-taking than those low in relational-interdependent self-construal or perspective-taking (Hypothesis 2).

Third, this study investigated the mediation of anticipated emotions in the association between condition valence and the estimated target's motivation level. Participants were induced to anticipate the targets' parents' emotions through different counterfactual scenarios: academic successes for future-positive condition, academic failure for future-negative condition, and non-outcome information for current control

condition. It was possible that merely thinking about those different counterfactual outcomes may induce different levels of the estimated target's motivation level for participants. That is, different valences (conditions: positive vs. neutral vs. negative scenarios) may influence the estimated target's motivation level directly without anticipated emotions. To exclude this confounding effect, direct and indirect effects of condition valence were investigated. Participants were expected to indicate a higher level of positive emotions for the targets' parents when they were asked to think of the target's parents' emotions in an academic success scenario than in an academic failure scenario or a non-outcome information scenario. The positive emotions for the targets' parents, in turn, were expected to influence participants' self-regulation intention. In other words, I hypothesized that there was a significant indirect effect of condition valence on the estimated target's motivation level through anticipated emotions (Hypothesis 3).

Fourth, previous research showed that nearly half of the college participants mentioned that academic success would make their mother proud but less than 1% of them mentioned that academic success would make their friends proud (Fitzsimons & Bargh, 2003). Thus, this study also tested this hypothesis: Whether participants reported different emotion anticipations of parents' versus friends' future emotions in the parents-future-positive, parents-future-negative, friends-future-positive, friends-future-negative conditions (condition 1, 2, 3 and 4), compared to parents-control condition (condition 5; Hypothesis 4). The success scenario (positive valence condition) in the friends-future-positive condition, however, may drive the positive outcome on the estimated target's motivation level. Then, I expected that similar to parents-future conditions (condition 1 and 2), participants in the friends-future-positive condition would report higher estimated target's motivation level than those in the friends-future-negative condition (Hypothesis 5).

More importantly, I expected that the mediation effect of anticipated emotions would be moderated by the relationship type: Parents versus friends. That is, although anticipated emotions of the targets' parents were expected to mediate the relations between condition valence (academic success vs. academic failure scenarios) and participants' estimated target's motivation level (Hypothesis 3), anticipated emotions of the targets' friends was expected to show a smaller mediation effect between condition valence and the estimated target's motivation level (Hypothesis 6).

Method

Participants and design

To exclude a confounding effect of culture, only European American participants were recruited through the psychology department participants' pool. Participants were 154 Euro-American male and 156 Euro-American female undergraduate students at Iowa State University, who received research credits in their psychology courses for their participation. This study used a between-subject design in which participants were randomly assigned to one of the five conditions (see Table 2 for sample size in each condition). Participants were induced to think about the target's significant others' emotions, including parents' future positive emotions (parents-future-positive condition), parents' future negative emotions (parents-future-negative condition), friends' future positive emotions (friends-future-positive condition), friends' future negative emotions (friends-future-negative), and parents' current emotions¹ (parents-current-control condition). The average age of the participants was 19.24 and no significant age

¹ Study 1 was an incomplete factorial design due to the lack of the current-positive and current-negative conditions. In condition 5, participants were asked to think about the targets' parents current feelings without positive or negative academic scenarios. Thus, condition 5 provided a baseline rating on the projected self-regulation intention.

differences were found among different conditions. Analyses of demographic items showed that there were no differences in socioeconomic status, $F(4, 304) = 0.04$, *ns.* and urbanization, $F(4, 303) = 0.85$, *ns.*, among participants in the different conditions.

Materials and procedure

Participants were asked to complete an online questionnaire about college student life. Participants first completed the demographic survey and social sensitivity scales, including the relational-interdependent self-construal scale (RISC) and the perspective-taking scale. After that, participants read a scenario about a college student and then answered the questions that follow. The scenario read as follows,

Lisa /Steve is just entering her/his second year of college. In her/his first year, s/he did very well in some classes but not as well in others. Although she/he missed some morning classes, overall s/he had very good attendance. Both of her/his parents are doctors. S/He is registered in pre-med, but s/he hasn't really decided if that is what s/he wants to do. (Adapted from Fitzsimons & Bargh, 2003)

Participants may use different criteria to make judgments about self-regulation intention if the target in the scenario had a different gender than their own. They would be less likely to project their own self-regulation intention on the target when completing the questions. Thus, in this study, female participants read the “Lisa” version whereas male participants read the “Steve” version in order to increase participants’ projection on the target in the scenarios. In the parents-future-positive condition (condition 1, see the attached questionnaires), participants were asked to rate how Lisa/Steve’s *parents* would feel “if s/he gets a GPA of 3.97 and **is on the Dean’s list** in the end of the second year.” It was believed that this condition would induce participants to anticipate the target’s parents positive emotions. In the parents-future-negative condition (condition 2), participants were asked to rate how Lisa/Steve’s *parents* would feel “if s/he gets a GPA of **1.87 and is on probation** in the end of the second year.” It was believed that this

condition would induce participants to anticipate the target's parents' negative emotions. In the friends-future-positive condition (condition 3), participants were asked to rate how Lisa/Steve's *friends* would feel "if s/he gets a GPA of 3.97 and **is on the Dean's list** in the end of the second year." In the friends-future-negative condition (condition 4), participants were asked to rate how Lisa/Steve's *friends* would feel "if s/he gets a GPA of **1.87 and is on probation** in the end of the second year." In the parents-current-control condition (condition 5), participants were induced to think about Lisa/Steve's parents' emotions about Lisa/Steve's school performance in the current first year.

Anticipated emotion measure

For all the emotion rating questions, participants were asked to complete a modified Positive and Negative Affect Scale (PANAS; Watson, Clark, & Tellegen, 1988; Lee, Aaker, & Gardner, 2000) which included 16 different types of emotions: Happy, cheerful, honored, proud, relaxed, peaceful, calm, comfortable, disappointed, shameful, guilty, worried, uptight, tense, nervous and fearful. For example, participants were asked to imagine how much Lisa/Steve's parents would feel *proud* if s/he got a GPA of 3.97 in the end of the second year in the parent-future-positive condition. They were asked to imagine how much Lisa/Steve's parents would feel *worried* if s/he got a GPA of 1.87 in the end of the second year in the friends-future-negative condition. Participants in all five conditions were asked to rate all 16 emotions listed above. These 16 emotions were aggregated to create one single anticipated positive emotion index. Negative emotions were reverse coded. The anticipated emotion index took the average of all emotions. There was a high reliability, $\alpha = 0.97$.

Target's motivation level measure

Six questions measured participants' ratings of Lisa/Steve's motivation to succeed in college (Fitzsimons & Bargh, 2003). Participants were asked to rate on a 1 (*Not at all*) to 7 (*Extremely*) scale how motivated Lisa/Steve was to succeed, how

important it was for her/him to succeed, how much s/he cared about succeeding, and how much Lisa/Steve cared about meeting her/his family's expectations. Participants were also asked to rate whether it was more important for Lisa/Steve to enjoy life (1) or achieve great things (7) and how much Lisa/Steve's parents/friends cared about Lisa's college life. The dependent variable is the average of the six items; it has a high reliability ($\alpha = .96$).

Participants' personal emotion measures

After completing the motivation measures, participants were asked to complete the modified PANAS (Lee, Aaker, & Gardner, 2000) on the scale from 1 (*definitely do not feel this way*) to 7 (*definitely feel this way*) using the same 16 emotion items (such as *worried*) as above to indicate their own current emotions. These 16 emotions were aggregated to create one single positive emotion index of participants' own emotions ($\alpha = 0.92$). To exclude the confounding effects of participants' own emotions, participants' own emotions was included in the analyses as a covariate.

Relational-interdependent self-construal scale

Participants completed the 11-item relational-interdependent self-construal scale (Cross, Bacon, & Morris, 2000; $\alpha = .85$) on a scale from 1 (*strongly disagree*) to 7 (*strongly agree*) to indicate whether the item was characteristic of them. Example items were "When I establish a close friendship with someone, I usually develop a strong sense of identification with that person" and "My close relationships are unimportant to my sense of what kind of person I am" (disagree means high relational-interdependent self-construal).

Perspective-taking scale

Participants completed one 7-item perspective-taking scale ($\alpha = .76$), a subscale of the empathy scale (Davis, 1980), on a scale from 1 (*strongly disagree*) to 7 (*strongly agree*). Sample items were "When I'm upset at someone, I usually try to 'put myself in

his shoes' for a while" and "Before criticizing somebody, I try to imagine how I would feel if I were in their place."

There was a significant correlation between relational-interdependent self-construal and perspective-taking, $r = .13$, $p < .05$. This correlation, however, was not very strong. Thus, although perspective-taking and relational-interdependent self-construal may both refer to social sensitivity but they are different constructs².

Results

Overview of analyses

I first report manipulation check results. General linear model tests and correlation analyses were used to ensure the manipulation of the situation was valid and to check participants' self-reported emotions in different conditions. Next, general linear model tests were used to examine the following hypotheses within parents conditions (future-positive vs. future-negative vs. current-control) and between parents and friends conditions (parents-future-positive vs. parents-future-negative vs. friends-future-positive vs. friends-future-negative).

First, only parents-related conditions were included in the general linear models to examine whether participants in different conditions (future-positive vs. future-negative vs. current-control) would report different estimated target's motivation level levels, even when representation of parents were invoked in all three conditions. Furthermore, the moderation effects of relational-interdependent self-construal and perspective-taking

² In both study 1 and study 2, several other social sensitivity indices including self-monitoring, need-to-belong, empathic concern (one subscale of empathy) were measured and tested. None of them, however, had any main effects or interaction effects in predicting the outcome variables. Thus, only relational-interdependent self-construal and perspective-taking were included in the method and results.

characteristics were also examined. To further explore the anticipated emotion effects, I explored whether the effects of different conditions on the estimated target's motivation level were mediated by the anticipated emotion. That is, I examined whether condition effects on the estimated target's motivation level decreased or became insignificant after the anticipated emotions were included in the analysis. Moreover, I tested the indirect effects of conditions on the estimated target's motivation level through anticipated emotions.

Second, both parents and friends future related conditions were included in the general linear models to examine whether the effect of condition valence (positive vs. negative) and the mediation effect of anticipated emotions on the estimated target's motivation level also emerged in friends' conditions and whether this effect was less salient than that in parents' relationship. That is, I also explored whether anticipation of parents' future emotions would promote the estimated target's motivation level better than anticipation of friends' future emotions. List-wise deletion was used to deal with missing data so that there were small variations in the degrees of freedom in the results. All the continuous variables were mean-centered and effect coding was used for categorical variables, in order to decrease multicollinearity effects, especially for interaction terms.

Manipulation check

To ensure that different conditions induced participants to anticipate different future emotions for the target's parents or friends, ANCOVAs were used to test whether there were differences among conditions in levels of positive and negative emotions. As expected, participants in different conditions reported significantly different levels of anticipated positive emotion, $F(4, 363) = 313.40, p < .01, \eta^2_p = .78, 95\% CI = [.74, .80]$. As shown in Table 3, Tukey's HSD post hoc tests revealed that participants in the parents-future-positive condition (condition 1) projected the highest level of anticipated

positive emotion, followed by friends-future-positive condition (condition 3), parents-current-control condition, friends-future-negative condition, and parents-future-negative condition. Participants in these five conditions showed a reverse order for levels of negative emotion. Furthermore, participants showed no differences in ratings of their own positive emotion, $F(4, 363) = 0.40, ns$. Correlation analyses also showed no associations between positive emotions ratings ($r = .03, ns$) of the anticipated target's parents/friends emotions and their own. Thus, the manipulations of positive versus negative emotion conditions successfully influenced participants' emotion ratings for the target's parents/friends in the scenarios, but did not influence participants' own emotions.

Target's motivation levels in parents-related conditions

First, it was hypothesized that participants who were induced to think about the target's parents' future positive emotions (condition 1: parents-future-positive) would indicate higher levels of the estimated target's motivation level for academic success, compared to those who were induced to think about the target's parents' current emotions (condition 5: parents-current-control). In contrast, participants who were induced to think about the target's parents' future negative emotions (condition 2: parents-future-negative) would be discouraged and indicate lower level of the estimated target's motivation level, compared to those who were induced to think about the target's parents' current emotions (condition 5: parents-current-control).

General linear models were used to test the hypotheses. As mentioned above, participants' own emotions and gender were included as covariates. No significant results related to covariates. First, conditions related to parents (condition 1, 2, & 5) were included as predictors. As expected, there was a significant condition effect on participants' ratings on the target's motivation level, $F(2, 205) = 100.56, p < .01, \eta^2_p = .50, 95\% CI = [.40, .57]$. As shown in Table 2, Tukey's HSD post hoc tests revealed that

there were significant differences between parents-future-positive condition, parents-future-negative condition and parents-current-control condition. Participants in the parents-future-positive condition, who were induced to think about the target's parents' future positive emotions showed the highest academic motivation, followed by those in the parents-current control condition, who were induced to think about the target's parents current emotions. Participants in the parents-future-negative condition, who were induced to think about the target's parents' future negative emotions, showed the discouragement effect: They reported the lowest levels of the target's motivation level. Thus, the results supported the hypothesis that anticipation of parents' future positive emotions would boost self-regulation intention whereas anticipation of parents' future negative emotions would decrease self-regulation intention (Hypothesis 1).

Second, social sensitivity characteristics, both perspective-taking and relational-interdependent self-construal, were included as continuous variables in a general linear model to test the interaction effects between social sensitivity characteristics and conditions (perspective-taking x conditions and relational-interdependent self-construal x conditions; Hypothesis 2). There was still a significant condition effect on the estimated target's motivation level, $F(2, 199) = 97.20, p < .01, \eta^2_p = .49, 95\% CI = [.39, .56]$. Moreover, there was a significant main effect of perspective-taking on the estimated target's motivation level: participants with high perspective-taking were more likely than those with low perspective-taking to report higher target's motivation level, $F(1, 199) = 6.27, p < .05, \eta^2_p = .03, 95\% CI = [0, .09]$. This perspective-taking effect was consistent with different conditions: no significant interaction effects were found between perspective-taking and condition, $F(2, 299) = .94, ns$. There was no main effect for relational-interdependent self-construal on the estimated target's motivation level, $F(2, 199) = 0.11, ns$. There was, however, a significant interaction between relational-

interdependent self-construal and the three conditions, $F(2, 200) = 2.81, p = .05, \eta_p^2 = .03, 95\% CI = [0, .08]$.

To disentangle the interaction effect, relational-interdependent self-construal was categorized into two levels: high versus low relational-interdependent self-construal based on whether their relational-interdependent self-construal scores were higher or lower than the mean score: 4.06. As shown in Figure 3, as expected, participants in the parents-future-positive condition showed a positive association between relational-interdependent self-construal and the estimated target's motivation level, $r = .28, p < .05$, but not in the parents-future-negative condition, $r = -.11, ns.$, or in the parents-current-control condition, $r = .02, ns.$ Thus, the results revealed that participants with high relational-interdependent self-construal showed a stronger anticipated emotion effect, especially in the parents-future-positive condition (Hypothesis 2).

Third, the anticipated emotion of the target's parents was included in general linear modeling to test their mediation effects on the estimated target's motivation level. It was expected that participants in different conditions (future-positive vs. future-negative vs. current control) would have different expectations of the target's parents' future feelings, which in turn would influence participants' rating on the target's motivation level. That is, I hypothesized that anticipated emotions would mediate the relations between condition and the estimated target's motivation level (Hypothesis 3). As mentioned above, there were 16 types of emotions were measured for the targets' parents. Positive and negative emotions were aggregated to create one single emotion index. Negative emotion was reverse coded. The anticipated emotion index took the average of all emotions. There was a high reliability, $\alpha = 0.97$.

To test for the significance of the mediation effect, I used Preacher and Hayes's (2008) bootstrapping method by calculating standard errors and 95% confidence intervals of the effect of condition on the estimated target's motivation level through

anticipated emotions. In the current study, 5000 bootstrapped samples were used to estimate the bias corrected and accelerated confidence intervals. Traditional mediation significance tests (i.e., Sobel test) and bootstrapping tests showed the same results. Parent-future-positive and parent-future-negative conditions were included in the mediation test and effect coding was applied: Positive condition was coded as 1 and negative condition was coded as -1. Results suggested that anticipated emotion mediated the relations between condition and the estimated target's motivation level: condition effect became insignificant in predicting the estimated target's motivation level when the anticipated emotion was included (see Figure 4). There was a significant total indirect effect of condition on the estimated target's motivation level through emotions, Mediated Effect = .83, SE = .26, 95% CI = [.35–1.38], Sobel $z = 3.65$, $p < .001$. Thus, the results supported the hypothesis that the condition effect on the estimated target's motivation level was mediated by projected anticipated emotions of the target's parents (Hypothesis 3).

Relationship type: Friends versus parents

Although a previous study (Fitzsimons & Bargh, 2003) showed that less than 1% of college students reported that academic success would make their friends feel proud, the results in this study tell a slightly different story. As mentioned above in the manipulation check part, ANCOVA tests showed that there were significant differences among the five conditions (see Table 3) on the anticipated positive emotion, $F(4, 363) = 313.40$, $p < .01$, $\eta^2_p = .78$, 95% CI = [.74, .80]. As shown in Table 3, general linear modeling contrast tests revealed that participants in the friends-future-positive condition showed a lower anticipated positive emotion level than those in the parents-future-positive condition, $F(1, 363) = 55.17$, $p < .01$, $\eta^2_p = .13$, 95% CI = [.07, .20], but a higher positive emotion level than those in the parents-current-control condition, $F(1, 363) = 58.21$, $p < .01$, $\eta^2_p = .13$, 95% CI = [.08, .20]. That is, although participants tended to

believe that parents would be more likely than friends to feel positive about their academic success, they also believed that their friends would also feel good about their academic success, compared to a neutral control condition (thinking about parents' current emotions). Thus, these results supported the hypothesis that participants expected different levels of future emotions for parents and friends even in similar academic events (Hypothesis 4).

These results, however, suggested that individuals believe that their academic successes or failures would also influence their friends' future emotions, although not as strongly their parents' future emotions. Thus, the second hypothesis for the friends related conditions was similar to that for the parents conditions: If participants were in the future-positive condition, who were induced to think about positive emotions, they were more likely to report higher levels of self-regulation intention, compared to those induced to think about negative emotions. Thus, friends-future-positive and friends-future-negative conditions were included in the analysis. Again, general linear models were used to test the hypotheses. As mentioned above, participants' own emotions and gender were included as covariates. No significant results related to covariates. As expected, there was a significant effect of condition (friends-future-positive vs. friends-future-negative) on the estimated target's motivation level, $F(1, 151) = 191.11, p < .01, \eta^2_p = .56, 95\% CI = [0, .09]$. As seen in Table 2, participants who were induced to think about friends' future positive emotions, tended to report higher levels of self-regulation intention than those who were induced to think about friends' future negative emotions (Hypothesis 5).

Finally, it was hypothesized that the mediation effect of anticipated emotions between condition valence (academic successes vs. academic failures) and self-regulation intention was expected to be stronger in the *parents-future* conditions than in the *friends-future* conditions (Hypothesis 6). That is, I expected that the indirect effect of

condition valence on the estimated target's motivation level through the anticipated emotion for friends related conditions would be lower than that for parents related conditions. To test for the significance of the moderated mediation effect, I used Hayes's (2012) bootstrapping method by calculating standard errors and 95% confidence intervals. There was no current control condition for friends related conditions therefore parents-current-control condition was not included in the moderated mediation test. Four conditions (parents-future-positive, parents-future-negative, friends-future-positive, friends-future-negative) were categorized into a 2 x 2 matrix: valence (positive vs. negative) and relationship (parents vs. friends). Effect coding was used for the categorical variables valence and relationship: positive and parents were coded as 1 and negative and friends were coded as -1. There was a significant interaction between relationship and valence in predicting the anticipated emotion as well as in predicting the estimated target's motivation level. As seen in Figure 4 and Figure 5, there was a significant direct effect of valence on the estimated target's motivation levels for friends condition ($c' = .71$, $se = .12$, $p < .0001$) but not for parents condition ($c' = .25$, $se = .17$, ns). The indirect effects of valence on the estimated target's motivation level through the anticipated emotion were also significant for both friends condition ($ab = .31$, $se = .10$, $95\% CI = [.13, .51]$) and parents condition ($ab = .83$, $se = .23$, $95\% CI = [.35, 1.38]$). More importantly, the indirect effect of the interaction between valence and relationship was also significant ($ab = .17$, $se = .04$, $95\% CI = [.10, .25]$). Thus, the results supported the hypothesis that relationship (parents vs. friends) moderated the mediation effect of the anticipated emotion on the estimated target's motivation level (Hypothesis 6). The anticipated emotion effects were stronger in the parents' future conditions than in the friends' future conditions.

Discussion

In sum, as seen in Table 1, general linear modeling and mediation tests results supported the hypotheses that anticipation of significant others' emotions influences individual's self-regulation intention. Specifically, anticipating significant others' future positive emotions leads to a boosted self-regulation intention whereas anticipating significant others' future negative emotions leads to discouragement and a low level of self-regulation intention (Hypothesis 1). The results suggested that the emotion effect on self-regulation intention is independent of the cognitive component effects of thinking about significant others: in all three conditions, including future-positive, future-negative and current-control conditions, cognitive representations of parents were all activated but the results showed significant differences in the estimated target's motivation level. Moreover, these effects are moderated by individual differences in relational-interdependent self-construal and perspective-taking: individuals who care for significant others' demands and expectations show a higher level of self-regulation intention than those who do not (Hypothesis 2). More importantly, the results revealed that the condition effect on the estimated target's motivation level was mediated by the anticipated emotion (Hypothesis 3). The condition effect became insignificant when the anticipated emotion was included in predicting the estimated target's motivation level. That is, different valence of the imagined scenarios itself may drive some differences in the estimated target's motivation level, but most of the effect came from the indirect effect of condition through anticipated emotions. The results for friends related conditions were partially consistent with the hypotheses: The anticipated emotions for friends were less intense than those for parents but still significantly different from the control condition (Hypothesis 4); there was still a significant positive versus negative condition effect on the estimated target's motivation level (Hypothesis 5), which was consistent with parents related conditions; the mediation test, however, revealed a

weaker mediation effect of the anticipated emotion for friends conditions than for parents conditions (Hypothesis 6). The results suggested that different relationships may result in different anticipated emotion effects on self-regulation.

Although Study 1 manipulated emotion valence in the different conditions, self-regulation was measured indirectly by participants' self-report on the targets' motivation levels. Study 2 aimed to further explore the anticipated emotion effects by measuring direct self-regulation behaviors.

CHAPTER 9. STUDY 2

The purpose of Study 2 was to conduct a laboratory experiment to manipulate participants' motivation to anticipate their partner's future feelings and to see whether they would tune their behaviors to make their partner feel better. Unlike Study 1, Study 2 had a real interaction between participants and their partners. In addition, Study 2 did not involve participants' personal achievement goal but involved an interpersonal goal. Participants were invited to the laboratory to complete some tasks including an algebra task with a confederate and an experimenter in a cooperative and a competitive condition. They completed the tasks with an experimenter if they were randomly assigned to a control condition. The confederate pretended to have difficulty solving the algebra problems in the cooperative and competitive conditions. The study measured the time spent on the algebra task, and emotion accessibility with two implicit tasks.

I expected that individuals in the cooperative situation would be more motivated than those in the competitive situation to anticipate their partner's future feelings and adjust their behaviors accordingly. Specifically, compared to participants in the competitive or control situation, those in the cooperative situations were expected to spend more time on the algebra task if they felt their partners needed more time than they did (Hypothesis 7; see Table 1). Furthermore, I expected the associations between cooperative versus competitive situations and participants' regulated behavior (taking longer to submit the algebra task) would be moderated by chronic individual differences in relational-interdependent self-construal and perspective-taking: Participants high in relational-interdependent self-construal and perspective-taking were expected to show stronger effects than those low in relational-interdependent self-construal and perspective-taking (Hypothesis 8).

Two implicit emotion measures were used to detect whether participants were thinking of emotions. If participants in the cooperative situation were more likely than

those in the competitive situation to anticipate their partners' feelings, situation-related emotion words (such as embarrassment and shame) should be more accessible to them. Thus, compared to those in the competitive or control conditions, they were expected to complete word stem tasks using more situation-related emotion words. Similarly, if participants in the cooperative condition were asked to complete a scenario, they would be more likely than those in the competitive or control condition to complete the response in the scenario taking affective states into account. Again, all these effects were expected to be moderated by social sensitivity variables: Participants high in relational-interdependent self-construal and perspective-taking were expected to show stronger effects than those low in relational-interdependent self-construal and perspective-taking (Hypothesis 9).

Method

Participants and design

To exclude cultural or gender confounding effects, only European American female participants were recruited through psychology department participants' pool. Participants were 130 Euro-American female undergraduate students at Iowa State University who received research credits in their psychology courses for their participation. Participants were randomly assigned to a cooperative condition, a competitive condition or a control condition. Three of them did not finish the whole experiment, two of them were suspicious about the confederate, two of them signed up for this experiment twice and five of them did not follow the experiment protocol. Thus, 12 participants were excluded and 118 participants were included in the formal analyses. There were 38 participants in the competitive condition, 34 participants in the cooperative condition, and 46 participants in the control condition. There were no age difference between participants in three conditions, $F(2, 115) = 0.55, ns$.

Procedure and material

Participants were invited to participate in an “intelligence and personality” study and complete three independent tasks. Participants were also asked to complete a short online personality survey through [surveymonkey.com](https://www.surveymonkey.com) before they came to the lab experiment. In the short personality survey, they were asked to complete the perspective-taking scale ($\alpha = .82$), a subscale of the empathy scale (Davis, 1983), the relational-interdependent self-construal (RISC, Cross, Bacon, & Morris, 2000, $\alpha = .85$) scale, and a demographic survey. Perspective-taking was not significantly correlated with relational-interdependent self-construal, $r = .04$, *ns*. This may be due to the small sample size but it also indicated that these two constructs measured different personality characteristics.

The experimenter recruited only one participant for each session. In both competitive and cooperative conditions, one participant was placed in a small room, sitting face-to-face with one female confederate, who was presented as another participant. In the control condition, one participant would complete all the tasks without the confederate. For the first task, participants played a “Trivial Pursuit” game. The object of the “Trivial Pursuit” game was to answer as many questions correctly as possible in 7 minutes. The experimenter was the judge. Participants in the competitive condition were told that the purpose of the study was to investigate “intelligence performance within a competitive context.” These participants were told that they would be competing against each other (participant vs. confederate) on items that “measure general and pop culture knowledge, and reaction speed.” Participants were told that if either one of them won the game (got more answers correct than the other), the winner would receive “one extra research credit.” The confederate, who already knew all the answers to this game, created the competitive atmosphere as well as pretended to be defeated by the real participant.

Participants in the cooperative condition were told that the purpose of the study was to investigate “intelligence performance within a cooperative context.” These participants were told that they would form a “cooperative team” with another female participant (the confederate) to play the “Trivial Pursuit” game. Participants were also told that if their team won this game (got at least 50% of the answers correct), they would each receive one extra course credit. The confederate in this condition tried to cooperate with the real participants, created a warm atmosphere as well as made sure their team answered more than half of the questions correctly so that they would win in the end.

Participants in the control condition were told that the purpose of the study was to investigate “intelligence performance within a laboratory context.” There was no confederate playing this game with them. Participants were also told that if their performance was better than average (no specific criterion was informed), they would receive one extra course credit. In the end, participants were informed that their performance was better than average and they won this game. Thus, all participants in the three conditions were informed that they won the game and they would get one extra course credit. The purpose of this manipulation was to make sure participants had similar positive feelings so that participants’ feelings would not influence their behavior in the algebra task.

After the ‘Trivial Pursuit’ game, the experimenter gave both participants and confederates an algebra task of seven questions with pen, paper and calculator. The algebra questions used were adapted from the ACT tests. The experimenter emphasized that this was an individual task and there were individual differences in solving algebra questions and that “some people could solve questions fast and accurately.” They were also informed that they can take their time to complete the work and that the researcher would use their answers to set up questions for future use. In

both the cooperative and competitive conditions, just as in the “Trivial Pursuit” game, participants were placed in front of the confederate and the experimenter left the room during the algebra task. The confederate used body language to show her frustration in the algebra task and to indicate that she had difficulty completing the questions. In the control condition, the experimenter would sit face-to-face with participants, the same place where the confederate sat in the other two conditions. The experimenter did not show any frustration or other emotional expressions during the process. Participants were told to ring the bell after they finished all the questions. In both the competitive and cooperative conditions, the confederate would not submit the task until the participant submitted hers. The maximum time length for the algebra task was 15 minutes. That is, participants would be stopped by the experimenter if they worked longer than 15 minutes. Participants’ work time on the algebra task was measured as the index of participants’ self-regulation. If participants noticed the other participant (their partner or their competitor in the “Trivial Pursuit” game) was having difficulty solving the algebra task, they may anticipate the other participant’s future emotions: “She would feel very bad about herself or feel embarrassed if I submit my questions too soon.” Thus, participants who would like to promote relationship harmony with their partner may intentionally work longer to prevent or decrease a socially embarrassing situation.

After the algebra task, participants completed two emotion tasks using pen and paper including a word stem task and a scenario task. The sequence of these two emotion tasks was counter balanced: half of the participants completed the word stem task first whereas the other half completed the scenario task first. In the word stem task, 20 emotion words and 10 non-emotion words were presented to detect the accessibility of emotion concepts. Word stems such as *ca__* and *fea__* could be completed by using emotion words such as *calm* and *fear* and can also be completed by using non-emotion words as *car* and *feature*. To prevent the automatic activation of using emotion words, I

also included non-emotion word stems, such as kni__ and app__, which could only be completed by using non-emotion words as knife and apple. Thus, the second dependent measure was the number of emotion words completed in the word stem task.

In the scenario task, participants were asked to complete several questionnaires. Participants answered three questions based on a school-related scenario (adapted from Duffy, online resources). It read as follows,

Chris has been getting in trouble in school lately. Chris doesn't do the homework and comes to class unprepared, so the teacher often remarks on Chris's laziness in front of the class. Chris also talks to other classmates during the lesson and passes notes or drops books or does other annoying things. The teacher is extremely impatient with Chris, so there is a lot of tension in the classroom. Pat is a friend of Chris's and finally asked why Chris acts the way she does in class. Chris told Pat that she had worked very hard on a science report (Chris is a very intelligent student), and that the teacher had accused her of copying another person's work and had given her a failing score on the report. Chris tried to explain that the work was hers and that maybe the other person copied, but the teacher ignored Chris's explanations.

Participants were asked to complete open-ended questions: "What do you think Pat is thinking or feeling? If you were in Pat's position, what would be going through your mind? What would you do?" Emotion words in participants' response were coded as an index of emotion accessibility as the third dependent measure.

After the emotion task, participants completed a short manipulation check questionnaire to indicate their feelings about the Trivial Pursuit game and the algebra task. For the Trivial Pursuit game, competence and warmth subscales adapted from a stereotype scale (Fiske, Cuddy, Glick, & Xu, 2002) were used to measure participants' perception of their partner (the confederate, only in the cooperative and competitive

conditions). Participants were asked to rate five characteristics (competent, confident, competitive, independent, and intelligence, $\alpha = .67$) of the other participant for competence, and four characteristics (tolerant, warm, good natured, and sincere, $\alpha = .84$) for warmth, on a scale from 1 (*not at all*) to 7 (*extremely*). Participants were also asked to rate cooperativeness and competitiveness for the overall Trivial Pursuit game on a scale from 1 (*not at all*) to 7 (*extremely*). Participants were expected to rate higher cooperativeness and lower competitiveness in the cooperative condition than in competitive condition. They were also expected to show high correlations between competence, warmth and cooperativeness in the cooperative condition whereas no associations in the competitive condition were expected.

For the algebra task, participants were asked to rate the task difficulty level (from 1-*very easy* to 7-*very hard*), and their confidence in math (from 1-*not at all confident* to 7-*extremely confident*). The purpose of these measurements was to test whether participants in different conditions have similar math capabilities.

In the end of the experiment, participants were probed for suspicion and were thoroughly debriefed and thanked.

Dependent measures

In sum, three different indices of participants' self-regulation for interpersonal goals were used as dependent variables, including one explicit behavioral index and two implicit measures. The first dependent measure was self-regulation, the time that participants spent on the algebra questions. The second dependent measure was the number of emotion words completed in the word stem task. The third dependent measure was the emotion words in participants' response in the scenario questions.

Results

Overview of analyses

I first report manipulation check results. ANCOVA tests and correlation analysis were used to check experimenter or confederate effects, to ensure manipulation of the situation was valid and to check participants' self-reported math capability in different conditions. Next, general linear modeling tests were used to examine the main hypotheses: whether participants in the cooperative condition, compared to the competitive and control conditions, would take more time to complete the algebra task (Hypothesis 7), would use more emotion words in the word stem task and scenario task (Hypothesis 9), and whether this effect was moderated by individual differences in relational-interdependent self-construal and perspective-taking (Hypothesis 8).

Analyses of the demographic survey showed that there were some differences in socioeconomic status, $F(2, 103) = 2.81, p = .06$ and urbanization, $F(2, 102) = 2.48, p = .09$ among participants in different conditions. More specifically, participants in the control condition reported slightly higher ratings in socioeconomic status ($M = 5.86, SD = 1.15$) than those in the competitive condition ($M = 5.37, SD = 1.07$) and cooperative condition ($M = 5.23, SD = 1.43$). Similarly, participants in the control condition reported higher ratings in urbanization ($M = 5.40, SD = 1.85$) than those in the competitive ($M = 4.47, SD = 1.90$) and cooperative condition ($M = 4.77, SD = 1.77$). To rule out the potential confounding effects of socioeconomic status and urbanization, these two variables were included in all analyses as covariates. List-wise deletion was used to deal with missing data so that there were small variations in the degrees of freedom in the results.

Manipulation check

To check whether there were experimenter or confederate effects on the participants' algebra time, ANCOVA tests were conducted: No significant differences in

algebra time among participants who were run by different experimenters, $F(9, 101) = 1.61$, *ns* or by different confederates, $F(7, 59) = 1.25$, *ns*. Thus, there were no experimenter or confederate effects on the participants' algebra time.

To ensure the Trivial Pursuit game created different situations, the participants' ratings of cooperativeness and competitiveness of the game were checked. As expected, compared to those in the competitive condition, participants in the cooperative condition ($M_{comp} = 4.36$, $SD_{comp} = 1.82$, $M_{coop} = 6.12$, $SD_{coop} = 0.70$) reported significantly higher ratings on cooperativeness, $F(1, 50) = 21.14$, $p < .01$, $\eta^2_p = .30$, and lower ratings on competitiveness ($M_{comp} = 4.89$, $SD_{comp} = 1.09$, $M_{coop} = 3.56$, $SD_{coop} = 1.69$), $F(1, 50) = 12.41$, $p < .01$, $\eta^2_p = .20$. Furthermore, participants in the cooperative condition showed a high correlation between cooperativeness and warmth ($r = .42$, $p < .01$) and between warmth and competence ($r = .49$, $p < .01$) whereas no significant associations were found among them for participants in the competitive condition. Thus, manipulations of competitiveness and cooperativeness of the environment were valid.

Furthermore, manipulation check measures for the algebra task showed no significant difference in subjective (self-reported) math capability among participants in the different conditions. Participants in different conditions reported similar algebra task difficulty level, $F(2, 86) = 0.73$, *ns*, and similar self-confidence in math, $F(2, 86) = 0.34$, *ns*.

Moreover, one objective indicator of participants' math capability was the number incorrect in the algebra task in the study. Again, no significant difference for number incorrect was found among the conditions, $F(2, 86) = 1.73$, *ns*. Although no difference was found among different conditions, the number incorrect (indicating participants' math capability) may directly relate to the time participants spent on the algebra task. Participants may have worked longer in the algebra task may be because they needed more time to complete these questions, rather than because they cared for their partner.

Thus, general linear modeling was used to test whether number incorrect and its interaction with condition was related to the time participants spent on the algebra task. As expected, there was a significant main effect of number incorrect, $F(1, 92) = 14.54$, $p < .001$, $\eta^2_p = .14$, 95% CI = [.03, .25], and a significant interaction effect between number incorrect and condition, $F(1, 92) = 3.35$, $p < .05$, $\eta^2_p = .07$, 95% CI = [0, .16], in predicting algebra time. That is, there was a significant association between math capability (number incorrect) and time spent on the algebra task and the association was moderated by condition. Further analyses showed that number incorrect was significantly correlated with the self-regulation measure (algebra time) in the competitive ($r = .37$, $p < .05$) and cooperative ($r = .35$, $p < .05$) conditions, but not in the control condition ($r = .07$, *ns*). It revealed that participants worked longer on the algebra task when they were not good at it, only if they completed this task with another “participant” (their partner or competitor in the “Trivial Pursuit” game), but not if they worked with the experimenter. To control the effect of math capability on self-regulation, number incorrect in the algebra task and its interaction with condition were included as covariates in other analyses related to algebra time. All the continuous variables were mean-centered and effect coding was used for categorical variables, in order to decrease multicollinearity effects, especially for interaction terms.

Self-regulation

It was hypothesized that participants in the cooperative condition would be more motivated to anticipate their partner’s feelings and would be more likely to regulate their behaviors to avoid making their partners feel bad in the future than those in the competitive condition (Hypothesis 7). Thus, participants in the cooperative condition, compared to those in the competitive and control conditions, were expected to be more likely to attend to their partners’ work on the algebra task. They were expected to be more likely to sense their partner’s difficulty and to wait for their partners to submit their

work to make their partners feel less embarrassed. That is, participants in the cooperative condition were expected to spend more time on the algebra task than those in the competitive and control conditions. More importantly, the associations between conditions and algebra time were expected to be moderated by relational-interdependent self-construal and perspective-taking.

General linear models were used to test the hypotheses. As mentioned above, socioeconomic status, urbanization, number incorrect and its interaction with condition were all included as covariates in the analysis predicting time on the algebra test. The results revealed that there was a significant main effect of condition for self-regulation, $F(2, 92) = 10.23, p < .0001, \eta^2_p = .18, 95\% CI = [.05, .30]$. Further contrasts between different conditions showed that there was a significant difference in algebra task time between the cooperative condition ($M = 54.47, SE = 30.18$) and control condition ($M = -90.77, SE = 25.90$; negative values represent below average completion time for algebra task), $F(1, 92) = 16.50, p < .01, \eta^2_p = .15$. No significant difference was found between the cooperative and competitive condition ($M = 54.47, SE = 30.18$), $F(1, 92) = .06, ns$. Thus, results partially support the hypothesis that participants in the cooperative condition chose to work longer in the algebra task than those in other conditions. Participants in the cooperative condition waited longer than participants in the control condition to make their partners feel less embarrassed. Participants in the cooperative worked longer than participants in the competitive condition. The difference, however, was not significant (Hypothesis 7).

To test the moderation effects on the association between condition and algebra time, perspective-taking, relational-interdependent self-construal (RISC) and their interaction with condition were included in the general linear model predicting self-regulation (algebra time; Hypothesis 8). Both perspective-taking and relational-interdependent self-construal were included as continuous variables. The results

revealed that there was a significant main effect for condition, $F(1, 85) = 9.75, p < .01, \eta^2_p = .19, 95\% CI = [.05, .29]$, and for relational-interdependent self-construal, $F(1, 85) = 4.30, p < .05, \eta^2_p = .05, 95\% CI = [.05, .29]$ on algebra time. There was a marginal main effect for perspective-taking on self-regulation, $F(1, 85) = 2.78, p < .10, \eta^2_p = .03, 95\% CI = [0, .11]$. These main effects, however, were qualified by the interaction between perspective-taking and condition, $F(1, 85) = 7.89, p < .01, \eta^2_p = .17, 95\% CI = [.03, .26]$. The interaction between relational-interdependent self-construal and condition was not significant, $F(1, 85) = 1.93, ns$. Thus, the results suggested that participants high in relational-interdependent self-construal were more likely to regulate their behavior to make others feel better, regardless of their conditions.

To disentangle the interaction effect between perspective-taking and condition, participants were categorized as high perspective-taking and low perspective-taking based on whether their perspective-taking scores were higher or lower than the mean score: 3.56. As shown in Figure 6, for both control and competitive condition, perspective-taking and algebra time were positively correlated, although only participants in the control condition showed significant association ($r = .33, p < .05$), but not for competitive condition ($r = .20, ns$). No significant correlation between perspective-taking and algebra time was found in the cooperative condition ($r = -.39, ns$). In both control and competitive conditions, participants high in perspective-taking tended to work longer in the algebra task. In the cooperative condition, individual differences in perspective-taking were overwhelmed by the situational influences.

In sum, participants high in perspective-taking tended to have high accessibility to interpersonal goals and to regulate their behavior accordingly, and were less likely to be influenced by situational information. In contrast, participants low in perspective-taking were more likely to be influenced by situational information: They were more likely

to trigger interpersonal goals and regulate their behavior in a cooperative situation than in a competitive situation.

Indirect emotion measures

Two indirect emotion measures were used to tap whether participants in the cooperative condition would have more accessible emotional words than in the competitive and control conditions and whether this effect would be moderated by relational-interdependent self-construal and perspective-taking characteristics (Hypothesis 9). Thus, compared to the competitive condition, participants in the cooperative condition were expected to use more emotional words to complete the word stem task and use more emotional words to answer scenario questions. It was also expected that participants with higher relational-interdependent self-construal or perspective-taking would show more accessible emotional words than the other conditions. That is, I expected interaction effects between condition and perspective-taking, and between condition and relational-interdependent self-construal on these two emotion measures. Both perspective-taking and relational-interdependent self-construal were included as continuous variables. General linear modeling tests showed that there were no condition differences in these implicit emotion measures. No significant main effects of condition were found for the word stem task, $F(2, 93) = .09, ns$, or for the scenario task, $F(2, 93) = 1.40, ns$. There was, however, a significant interaction effect between condition and relational-interdependent self-construal for the scenario task, $F(2, 93) = 4.48, p < .05, \eta^2_p = .09, 95\% CI = [0, .19]$, but not for the word stem task, $F(2, 93) = .20, ns$. There were no significant interaction effects between condition and perspective-taking for the word stem task, $F(2, 93) = 1.67, ns$, or for the scenario task, $F(2, 93) = .33, ns$.

To disentangle the interaction effect between relational-interdependent self-construal and condition, participants were categorized as high relational-interdependent

self-construal and low relational-interdependent self-construal based on whether their relational-interdependent self-construal scores were higher or lower than the mean score: 4.12. As seen in Figure 7, there were a significant negative association between relational-interdependent self-construal and emotion accessibility in the competitive condition, ($r = -.53, p < .05$) but no significant correlations were found in the cooperative condition ($r = .28, ns$) or in the control condition ($r = -.05, ns$). The results partially supported the hypothesis that individuals in the cooperative context tended to have more highly accessible emotion information than those in the competitive context if they are sensitive to social cues (high in relational-interdependent self-construal).

Discussion

In sum, as seen in Table 1, general linear modeling tests partially supported the hypotheses that participants in the cooperative condition were more likely to regulate their behavior to maintain a harmonious relationship than those in the control condition (Hypothesis 7). More importantly, individual differences in relational-interdependent self-construal or perspective-taking characteristics also affect self-regulation together with contextual influences (Hypothesis 8). Individuals who have the tendency to attend to others' needs and take others' perspectives (high in relational-interdependent self-construal and perspective-taking) were more likely than those who do not tend to consider others' needs or take others' perspectives (low in relational-interdependent self-construal and perspective-taking) to regulate their behavior to maintain interpersonal harmony with their partner, regardless of the condition. The situation sometimes overrode the individual differences: Individuals low in perspective-taking showed a heightened effect of self-regulation in the cooperative context. The results suggested that the cooperative situation may boost individuals' epistemic motivation to anticipate others' future emotion reactions, and therefore increase self-regulation, even for individuals who do not tend to take others' perspectives frequently.

Implicit emotion measures also partially supported the hypotheses that participants in the cooperative conditions tended to be more highly sensitive to emotion information than those in the competitive condition (Hypothesis 9). This effect emerged among participants who were high in relational-interdependent self-construal but not among participants who were low in relational-interdependent self-construal. That is, the effect of context on emotion accessibility was moderated by individual differences in relational-interdependent self-construal. The results suggested that individuals who tended to consider others' demands and expectations (high in relational-interdependent self-construal) may inhibit their sensitivity to emotional information in the competitive condition.

CHAPTER 10. GENERAL DISCUSSION

The purpose of the present studies was to explore how anticipated emotion functions in an interpersonal situation. Study 1 focused on personal goal pursuit within an interpersonal context, testing whether thinking of significant others' future feelings will influence the estimated target's motivation level. The results revealed that the estimated target's motivation level was heightened by thinking of the target's significant others' future positive emotions whereas the target's motivation level was discouraged by thinking of the target's significant others' future negative emotions. Study 1 also examined the moderation effects of relational-interdependent self-construal and perspective-taking characteristics on the association between anticipation of the target's significant others' emotions and the estimated target's motivation level. Individuals who are sensitive to social cues and attend to others' expectations showed a boosted self-regulation intention when they were induced to think about the target's significant others' future positive emotions. Furthermore, Study 1 demonstrated that the effects of condition on the estimated target's motivation level were mediated by the anticipated emotion and this mediation effect was moderated by the relationship types (parents vs. friends). Past research mainly focused on anticipated emotion function in an intrapersonal process: Anticipating one's own emotions may influence self-regulation. Study 1 extended current research by investigating the effects of anticipated emotions on self-regulation function in an interpersonal situation: whether anticipating others' emotions would influence self-regulation.

Study 2 also sought to demonstrate the effects of anticipated emotion on self-regulation within an interpersonal context. Unlike Study 1, Study 2 focused on self-regulation to attain an interpersonal goal instead of personal achievement. Study 2 aimed at replicating daily life dyadic interactions in a laboratory environment rather than using scenarios for participants to imagine as in Study 1. Whereas Study 1 was intended

to investigate the effect of different anticipated emotion valence (positive vs. negative vs. neutral) on self-regulation, Study 2 focused more on how different environments (competitive vs. cooperative vs. control conditions) may influence individuals' anticipation of others' emotions, which in turn affect their self-regulation. Moreover, Study 2 extended Study 1's results by measuring both actual behavior and implicit emotions. Furthermore, Study 1 focused on significant others (parents or friends who are close others) whereas Study 2 was intended to explore whether this effect also emerged among individuals who just met each other. Thus, two studies using different methods (scenario questionnaires vs. lab experiments) investigated the same question: How does anticipation of others' emotions influence individuals' self-regulation in pursuit of personal achievement or interpersonal harmony goals?

Study 2 demonstrated that the environment (perceived competitiveness) and individual differences in relational-interdependent self-construal and perspective-taking together influenced people's epistemic motivation to anticipate others' emotions and modify their self-regulation. Participants who tended to consider others' needs (high in relational-interdependent self-construal) were more sensitive to emotion information, especially in the cooperative context. Moreover, participants who tended to take others' perspective (high in perspective-taking) were more likely to regulate their behavior to maintain the interpersonal harmony even in the competitive condition. The results suggested that neither individuals' personality nor environment (competitive or cooperative) itself may dominate people's self-regulation. Instead, individuals' personality and the environment's characteristics interact with each other and influence individuals' self-regulation.

Although both relational-interdependent self-construal and perspective-taking were used to measure social sensitivity in the present research, they are different constructs. Study 1 and Study 2 showed a small correlation or an insignificant correlation

between relational-interdependent self-construal and perspective-taking. Relational-interdependent self-construal puts more emphasis on close relationships whereas perspective-taking focuses on general others. Individuals with high relational-interdependent self-construal, who value close relationships, are not necessarily more likely to take general others' perspectives. Thus, it was not surprising to see that relational-interdependent self-construal was a significant moderator in Study 1, which involved close relationships including parents and friends, whereas perspective-taking was a significant moderator in Study 2, which involved an unfamiliar partner.

Surprisingly, Study 2 did not detect a significant difference between the cooperative and competitive conditions. Moreover, the implicit measure of emotion, the word stem task did not detect any emotion sensitivity differences among conditions. It is possible that Study 2 does not fully support the hypotheses due to several reasons. First, the power of the hypothesis tests may be low because of the small sample size in each condition. Although 118 participants were included in the final analysis in Study 2, only 105 participants were included when analyzing relational-interdependent self-construal or perspective-taking characteristics. Thirteen participants did not complete the online personality survey. Thus, there were 32 participants in the competitive condition, 29 participants in the cooperative condition, and 44 participants in the control condition. Second, the word stem completion task measure of implicit emotion was an indirect way of measuring anticipated emotions and the measurement task may not be sensitive enough to detect the differences. Third, although very few participants correctly guessed the true purpose of this study, participants may have different assumptions about the algebra task: Some participants in the cooperative condition may assume the "Trivial Pursuit" game was the cooperation part whereas the algebra task was the competition part in the study. Some participants in the competitive condition may believe the algebra task was much less competitive than the "Trivial Pursuit" game because they were not

competing with each other on each algebra question verbally. Thus, participants with different assumptions may have perceived the competitiveness differently, which in turn may have affected their sensitivity to emotion information. Fourth, participants and their partners in the experiments were strangers before they began this study together. It was far from people's everyday life. Thus, participants may use different strategies of self-regulation with strangers than with close others. Future studies may extend the current research by investigating dyadic data from real-life couples, such as roommates and spouses.

Implications for Goal Pursuit

Kunda (2001) distinguished two types of cognition: Hot cognition versus cold cognition. According to her definition, hot cognition refers to the cognitive processes that are driven or influenced by people's desires and feelings. For example, people who are in a sad mood are more likely to recall sad memories from the past, which is called mood congruent memory. In contrast, cold cognition only involves information driven processing without taking emotions into account. Fitzsimons and Bargh (2003) focused on information driven processing to explain how priming of significant others will affect people's goal pursuit. They proposed that the priming of representations of significant others will also activate goal representations because they are connected in the cognitive network. The present research attempted to investigate factors that go beyond "cold cognition": Not only "cold cognition" like goal-activation will influence self-regulation in a goal pursuit situation but also "hot cognition" of emotional factors will influence self-regulation. Study 1 compared the effects of anticipated emotions on self-regulation in parents-future-positive, parents-future-negative and parents-current-control conditions. In all three conditions, parents' representations were primed and the cognitive representations of related goals were activated. Thus, Study 1 measured a pure "hot cognition" effect without confounding with "cold cognition" effects. The results suggested

that, aside from the “cold cognition” effect, there were salient “hot cognition” effects (emotion effects) on self-regulation intention.

Current research also has focused on linking interpersonal relationships and personal goal pursuits. Gore and Cross (2006) proposed that some individuals pursue goals for *relational reasons*. The present study also intended to gather support for this idea: Thinking of significant others’ positive emotion change in the future motivates one to pursue related goals. Significant others’ positive future emotions become a positive self-regulatory resource, especially for people high in sensitivity to social cues. Individuals’ hard work on their personal goals may be due to their self-determination but can also be due to a relational reason: To make their significant others feel good. In contrast, the current study also suggested that thinking of significant others’ future negative emotions may discourage people’s self-regulation intention. Thus, not only anticipation of emotions but also the valence of anticipated emotions influences individuals’ self-regulation intentions. More importantly, the current study demonstrated that the effect of condition valence (whether participants were asked to imagine an academic success or failure event) became insignificant when anticipated emotion was included in predicting the estimated target’s motivation level. The association between condition valence and the estimated target’s motivation level was fully mediated by anticipated emotion. The mediation test showed that participants in different conditions projected different levels of anticipated emotions for the targets’ significant others, which in turn influenced the estimated target’s motivation level. That is, it was not the condition valence itself but the induced anticipation of emotions that influenced the estimated target’s motivation level.

Furthermore, the current studies also extended knowledge of goal pursuit by examining emotional factors in close relationships. Fitzsimons and Bargh (2003) have demonstrated that priming of different types of close relationships may result in different

self-regulation levels. To increase goal pursuit motivation in academic successes, the priming of parents' cognitive representations would be more effective than the priming of friends' cognitive representations. The current study results were partially consistent with their findings. Study 1 showed that participants anticipated different levels of emotional responses for parents and friends: anticipated emotions were more extreme for parents than for friends. Although the current results did not find significant differences in the estimated target's motivation level between the friend and parent conditions, relationship type was found as a moderator for the mediation effect of the anticipated emotion on the estimated target's motivation level. Unlike the *parents*-conditions, in which the condition valence effect on the estimated target's motivation level was fully mediated by the anticipated emotion, the direct effect of condition valence in the *friends*-conditions was still significant when anticipated emotion was included in predicting the estimated target's motivation level. That is, the effect of the anticipated friends' emotions on self-regulation intention was not as strong as that of the anticipated parents' emotions. The inconsistent results between the current study and Fitzsimons and Bargh's (2003) studies may be due to the difference in the cognitive priming effects and anticipated emotion effects on self-regulation. According to Fitzsimons and Bargh's (2003) studies, parents but not friends are believed to hold academic expectations for people, thus only parents' cognitive representations are related to individuals' academic goals whereas friends' cognitive representations are not related to their academic goals. Therefore, the priming of friends' cognitive representations may not increase self-regulation intention. Individuals' academic successes, however, may still have impact on friends' emotions. Individuals' friends may not have any academic expectation for them but friends may still feel proud if they succeed in the academic field and the anticipation of friends' emotions may also influence individuals' self-regulation. Therefore, there are different underlying mechanisms for cognitive priming and anticipated emotions in promoting self-regulation.

Implications for Emotions in Interpersonal Situations

The majority of current future-oriented emotion studies focus on intrapersonal processes. This research contends that not only individuals' own emotions but also their partners' emotion information are useful and can be used to make sense of social interactions and to maintain social interaction processes. Study 2 provided evidence for how people adjust their own behavior to make others feel better in a cooperative situation. Emotion served an interpersonal function here: Participants who were motivated to anticipate their partners' possible future feelings may adjust their behavior to provide a subtle means of social support for their partners.

Another possible unexplored mechanism is the emotional contagion effect. In a social interaction situation, observers may unintentionally experience partners' emotions, or mimic their facial expressions or postures (Hatfield, Cacioppo, & Rapson, 1994; van Baaren, Maddux, Chartrand, de Bouter, & van Knippenberg, 2003). It is possible that people are more likely to feel good if they anticipate their significant others' positive future feelings. Likewise, people may feel bad if they expect their significant others will experience negative feelings. In addition, anticipation of significant others' future feelings may also elicit anticipation of their own future feelings. Although the current study controlled for the participant's current emotions, it is possible that participants use anticipation of their own future feelings as information to guide their decision making or behavior. For example, students may show a heightened self-regulation intention because they believe that they would feel good because others would be proud of their academic successes. Future studies may explore the emotional contagion effect to see whether anticipation of partners' future emotions together with their own anticipated emotion influence the perception of the situation and self-regulation.

Anticipation of others' future emotion provides information and guidelines for people to react appropriately in an interpersonal context. Although whether people can

get accurate estimates of others' future emotion or only biased affect forecasting still calls for investigation, individuals can still apply this to improve close relationships in daily life. If people are reminded to think about their partners' future emotions before they take action, it is likely they may avoid doing something that will probably make their partners feel bad eventually. Moreover, people are more likely to choose to do something that will make their partners feel good. Future studies may collect longitudinal data to investigate whether self-regulation affected by anticipation of others' emotion will improve relationship satisfaction in the long run.

Cultural Differences and Self-Regulation

Socialization processes, cultural background, and many other factors may influence the reasons for goal pursuit. The current research investigated the moderation effect of relational-interdependent self-construal or perspective-taking. The results suggested that individual differences in relational-interdependent self-construal or perspective-taking may lead to different epistemic motivations in anticipating others' emotions and lead to different levels in self-regulation. It is possible that people from different cultural backgrounds may differ in their sensitivity to emotional cues or motivation to attend to others' affective status. The current research found that individual differences in relational-interdependent self-construal moderated the effects of the anticipated emotion on self-regulation. East Asians, who tend to have an interdependent self-construal may show a higher motivation to anticipate others' emotions in order to regulate their behaviors, compared to Euro- Americans, who tend to have an independent self-construal. Future studies may investigate cultural difference in motivation to anticipate others' emotion and its consequence in self-regulation.

Another cultural difference may lie in the function of anticipated emotion valence. Study 1 showed a consistent finding with previous studies in western cultures: anticipating positive emotions provides resources for self-regulation whereas anticipating

negative emotions hampers self-regulation. This may not be true for East Asian culture. East Asian culture emphasizes maintaining harmony in relationships. It is expected that an individual will not fall short of social standards. However, European American culture promotes personal achievement, independence and uniqueness, which demands that individuals take risks and attain success (Markus & Kitayama, 1991; Triandis, 1989). Previous studies revealed that individuals with independent self-construal are more likely to pay attention to achievement-orientated information whereas individuals with interdependent self-construal focus more on loss-focused information (Lee, Aaker, & Gardner, 2000). Further research found that European Americans are more motivated by positive role models whereas East Asians are more motivated by negative role models (Lockwood, Jordan, & Kunda, 2002; Lockwood, Marshall, & Sadler, 2005). Successes and failures may have different meanings and consequences for European Americans and East Asians. Heine and his colleagues (Heine et al., 2001) found that European Americans who were given false negative feedback on a task persisted less on a similar follow-up task than those who were given false positive feedback. Thus positive and negative valence may have different implications for people in different cultural backgrounds. Further study showed that Euro-Americans are more likely than their East Asian counterparts to report that successes boost their self-esteem. Chinese, compared to Americans, are less likely to view failures as intolerable, as problematic for their goals, and as damaging to their self-esteem (Zhang & Cross, 2011). Similarly, positive and negative emotions also serve different functions in self-regulation in different cultures.

Euro-Americans, who tend to have an independent self-construal, are disposed to seek or enhance positive self-views. They are sensitive to information that confirms their positive self-views, which in turn motivates them to persist. In contrast, East Asians, who tend to have an interdependent self-construal, view criticisms from others as a

means to improve themselves and thereby live up to close others' expectations. Thus, it is possible that East Asians may show heightened self-regulation intention levels if they are induced to anticipate significant others' negative emotions. Future studies may investigate the effects of anticipated emotion valence on self-regulation within different cultural contexts.

Conclusion

The present studies suggest that anticipating others' future emotions influences personal and interpersonal goal pursuits. The interpersonal effects of anticipated emotion on self-regulation depend on whether or not people are motivated to make sense of their partners' future feelings. When individuals are reminded to think about significant others' future feelings, when they are in a cooperative situation, or when individuals are relationally-oriented and sensitive to social cues, they are more likely to anticipate others' future feelings and in turn regulate their own behavior. Although previous studies have investigated the effects of anticipated emotions on goal pursuit and the social information function of emotions, few studies have combined those two perspectives to investigate the effect of anticipation of others' emotions. The current studies take an initial step in exploring future-oriented emotion effects on self-regulation in an interpersonal situation.

TABLES AND FIGURES

Table 1. Hypotheses and Tested Results

Hypotheses	Results
1a. Participants who were induced to think about the target's <i>parents' future-positive</i> feelings were expected to indicate higher levels of the estimated target's motivation level than those who are induced to think about the target's <i>parents' current-neutral</i> feelings.	Supported
1b. Participants who were induced to think about the target's <i>parents' future-negative</i> feelings were expected to indicate lower levels of the estimated target's motivation level than those who were induced to think about the target's <i>parents' current-neutral</i> feelings.	
2. The anticipated emotion effects on the estimated target's motivation level were expected to be moderated by relational-interdependent self-construal and perspective-taking characteristics: the effects would be stronger among individuals with high relational-interdependent self-construal and perspective-taking than those with low relational-interdependent self-construal and perspective-taking.	Supported
3. Anticipated emotions were expected to mediate the relations between different valences of the condition (parents-future-positive vs. parents-future-negative vs. parents-current-neutral) and the estimated target's motivation level.	Supported
4. Participants were expected to anticipate different future emotions in responses to academic successes and academic failures for the targets' parents and friends.	Supported
5. Participants who were induced to think about the target's <i>friends future-positive</i> feelings were expected to indicate higher levels of the estimated target's motivation level than those who were induced to think about the target's <i>friends' future-negative</i> feelings.	Supported
6. The mediation effect of anticipated emotions between condition valence (academic successes vs. academic failures) and self-regulation intention was expected to be stronger in the <i>parents-future</i> conditions than in the <i>friends-future</i> conditions.	Supported

Table 1. (continued)

Hypotheses	Results
7. Participants in a cooperative situation would be more likely than those in a competitive situation to adjust their behavior in response to their partners' future emotions to promote relationship harmony.	Partially Supported
8. The situation effect on self-regulation was expected to be moderated by relational-interdependent self-construal and perspective-taking characteristics.	Supported
9. Individuals in the cooperative condition were expected to have more accessibility to emotional information than those in the competitive or control conditions; this effect was moderated by relational-interdependent self-construal and perspective-taking characteristics.	Partially Supported

Note. Hypotheses 1-6 for Study 1; Hypotheses 7-9 for Study 2.

Table 2. Means and Standard Errors for the Measures of the Estimated Target's Motivation Level as a Function of Conditions for Study 1

Condition	Description	<i>M</i>	<i>SE</i>	<i>N</i>
1	Parents' future positive	1.19 _a	0.12	58
2	Parents' future negative	-0.98 _c	0.10	81
3	Friends' future positive	1.01 _a	0.10	80
4	Friends' future negative	-1.04 _c	0.10	79
5	Parents' current control	-0.13 _b	0.11	71

Note. Differing subscripts indicate a significant difference between conditions at $p < .05$.

Means were centered by average at 4.66.

Table 3. Means and Standard Deviations for the Measures of Anticipated Positive and Self Positive Emotions as a Function of Conditions for Study 1

Condition	Description	Positive Emotion		Self Positive Emotion	
		<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>
1	Parents' future positive	6.17 _a	0.88	4.37 _a	1.20
2	Parents' future negative	2.10 _b	0.59	4.58 _a	1.12
3	Friends' future positive	5.18 _c	0.74	4.49 _a	1.20
4	Friends' future negative	3.07 _d	0.95	4.48 _a	1.19
5	Parents' current control	4.22 _e	0.73	4.39 _a	1.02

Note. Differing subscripts indicate a significant difference between conditions at $p < .05$.

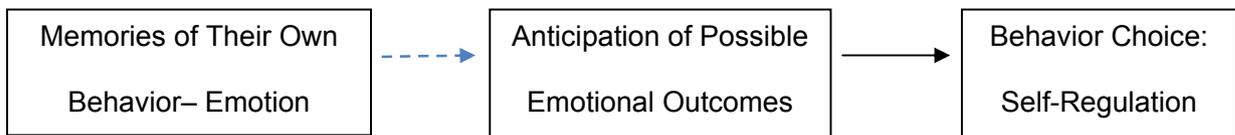


Figure 1. Anticipated emotions influence current behavior. Solid arrows indicate causal relationship. Dashed arrows indicate associative relationship.

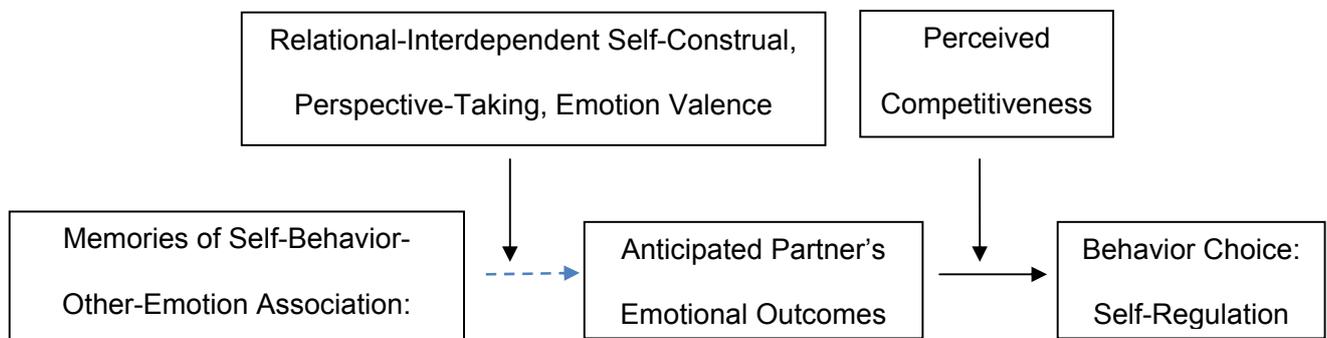


Figure 2. Anticipation of others' emotions influences self-regulation. Solid arrows indicate causal relationship. Dashed arrows indicate associative relationship.

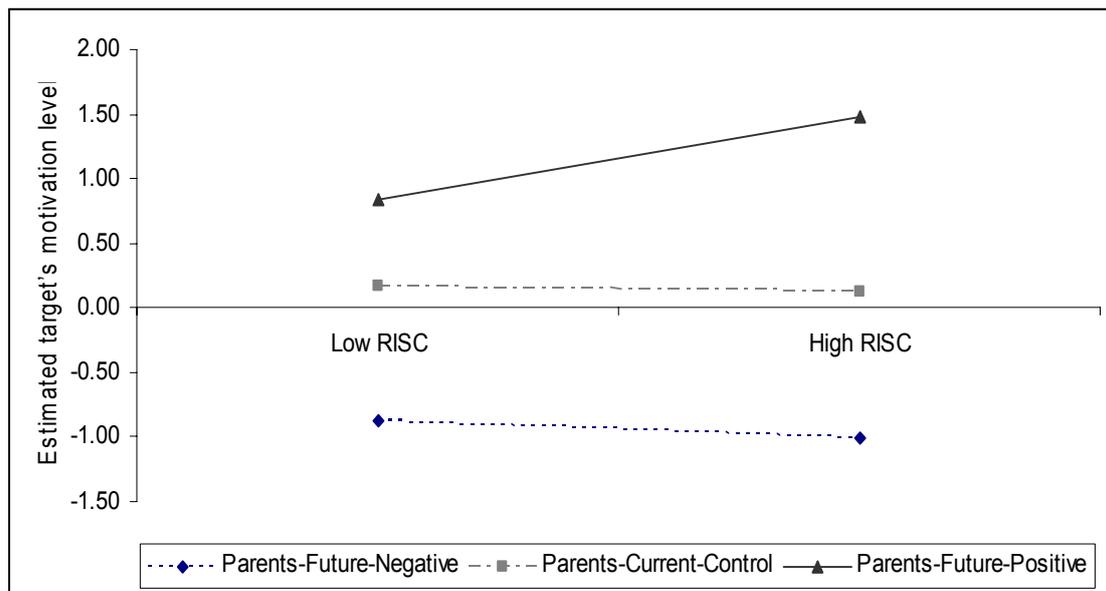


Figure 3. Two-way interaction of parents-future-negative versus parents-current-control versus parents-future-positive conditions and relational interdependent self-construal for the estimated target's motivation level. RISC: Relational interdependent self-construal.

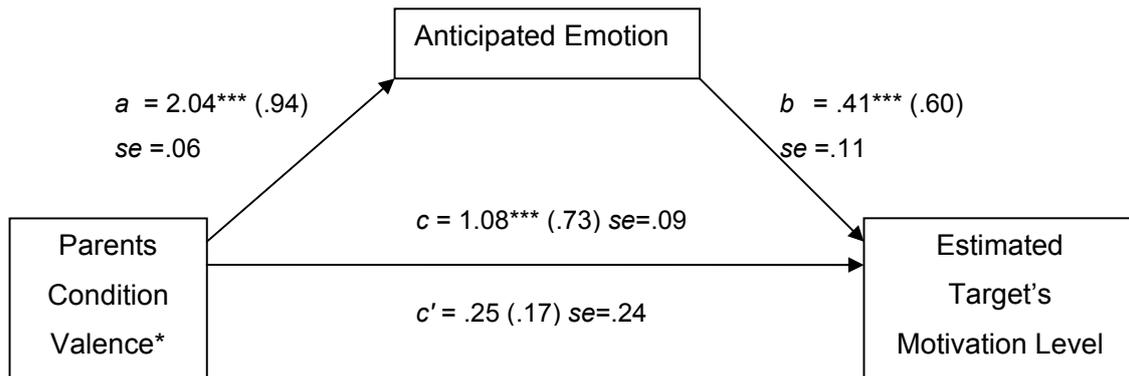


Figure 4. The mediation model of anticipated targets' parents' emotions for the estimated target's motivation level. Numbers in the parentheses are standardized coefficients. * Parents condition Valence: Positive (coded as 1) versus negative (coded as -1); * $p < 0.001$; c: Total effect of condition on the estimated target's motivation level, without any mediators; c': Direct effect of condition on the estimated target's motivation level.**

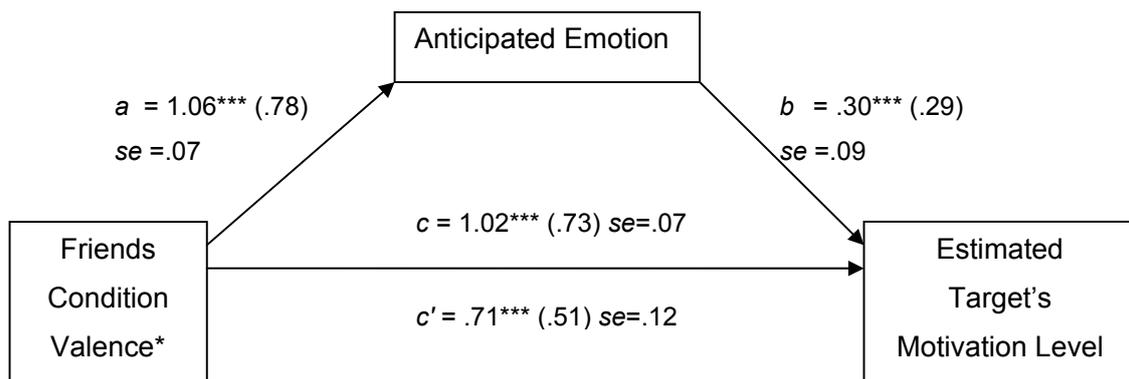


Figure 5. The mediation model of anticipated targets' friends' emotions for the estimated target's motivation level. Numbers in the parentheses are standardized coefficients. * Friends condition Valence: Positive (coded as 1) versus negative (coded as -1); * $p < 0.001$; c: Total effect of condition on the estimated target's motivation level, without any mediators; c': Direct effect of condition on the estimated target's motivation level.**

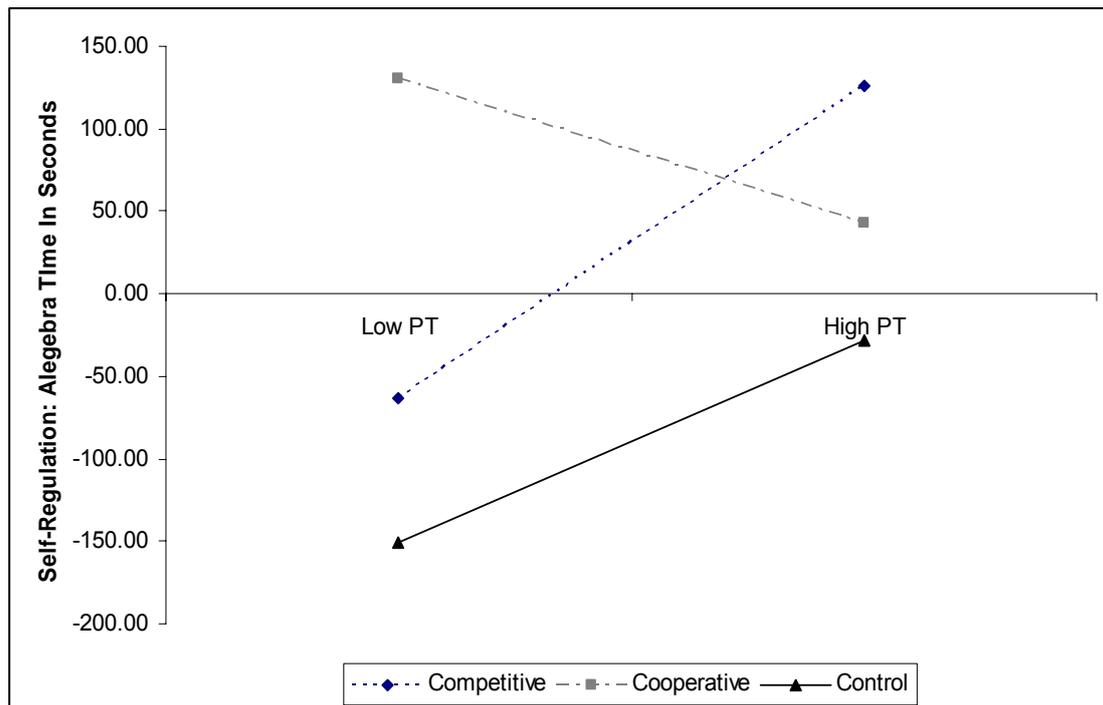


Figure 6. Two way interaction of competitive versus cooperative versus control condition and perspective-taking for algebra time; PT: Perspective-taking; zero value represents grand mean of all three conditions.

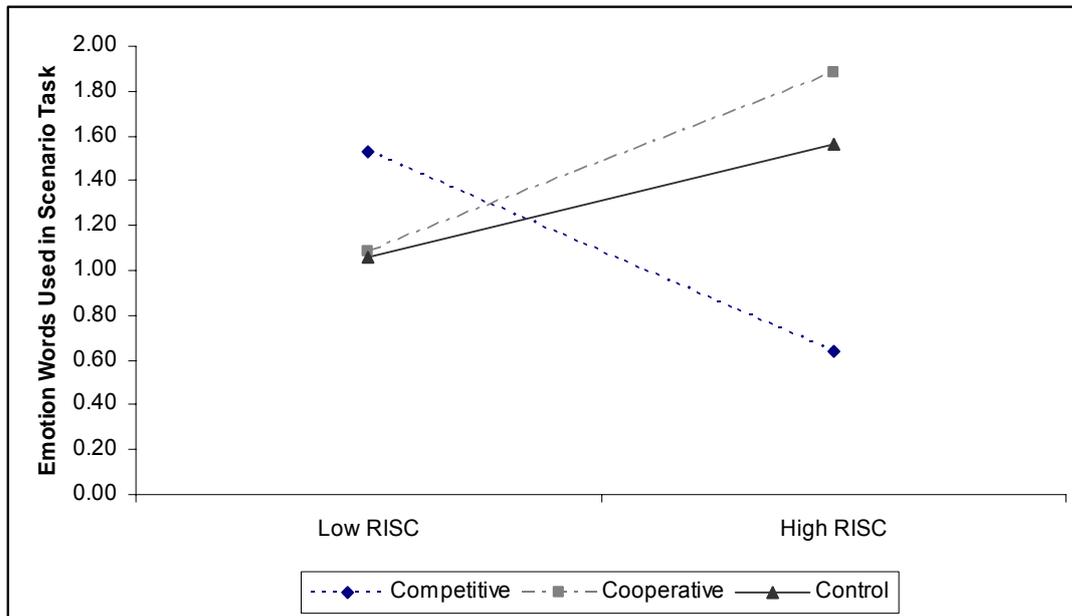


Figure 7. Two-way interaction of competitive versus cooperative versus control condition and relational interdependent self-construal for implicit emotion measure in the scenario task. RISC: Relational interdependent self-construal.

APPENDIX: MEASURES

Study 1: Scenario questionnaires (Adapted from Fitzsimons & Bargh, 2003):

Lisa /Steve is just entering her/his second year of college. In her/his first year, s/he did very well in some classes but not as well in others. Although she/he missed some morning classes, overall s/he had very good attendance. Both of her/his parents are doctors. S/He is registered in pre-med, but s/he hasn't really decided if that is what s/he wants to do. (Adapted from Fitzsimons & Bargh, 2003)

Anticipated parents' emotion condition:

+ To what extent, do you think Lisa/Steve's parents will feel (happy, cheerful, honored, proud, relaxed, peaceful, calm, comfortable, worried, uptight, tense, nervous, disappointed, shameful, guilty) if he get a GPA of 3.97 and is on Dean's list in the end of the second year?

1- Not at all 4- Neutral 7- Extremely

+ To what extent, do you think Lisa/Steve's parents will feel (happy, cheerful, honored, proud, relaxed, peaceful, calm, comfortable, worried, uptight, tense, nervous, disappointed, shameful, guilty) if he get a GPA of 1.87 and is on probation in the end of the second year?

1- Not at all 4- Neutral 7- Extremely

Anticipated friends' emotion condition:

+ To what extent, do you think Lisa/Steve's friends will feel (happy, cheerful, honored, proud, relaxed, peaceful, calm, comfortable, worried, uptight, tense, nervous, disappointed, shameful, guilty) if he get a GPA of 3.97 and is on Dean's list in the end of the second year?

1- Not at all 4- Neutral 7- Extremely

+ To what extent, do you think Lisa/Steve's friends will feel (happy, cheerful, honored, proud, relaxed, peaceful, calm, comfortable, worried, uptight, tense, nervous, disappointed, shameful, guilty) if he get a GPA of 1.87 and is on probation in the end of the second year?

1- Not at all 4- Neutral 7- Extremely

Current emotion condition:

+ To what extent, do you think Lisa/Steve's parents felt (happy, cheerful, honored, proud, relaxed, peaceful, calm, comfortable, worried, uptight, tense, nervous, disappointed, shameful, guilty) about Lisa/Steve's school performance in the first year?

1- Not at all 4- Neutral 7- Extremely

Motivation Measure:

How much motivated was Lisa/Steve to succeed at school?

How important it was for Lisa/Steve to succeed?

How much did Lisa/Steve care about succeeding?

How much did Lisa/Steve care about meeting his family's expectations?

1- Not at all 4- Neutral 7- Extremely

To what extent did Lisa/Steve think it was more important to enjoy life (1) or achieve great things (7)

To what extent, do you think Lisa/Steve's parents care about Lisa/Steve's college life?

1- Not at all 4- Neutral 7- Extremely

Mood measure: The modified PANAS (Lee, Aaker, & Gardner, 2000)

This scale consists of a number of words that describe different feelings and emotions.

Read each item and then mark the appropriate answer in the space next to that word.

Indicate to what extent you feel this way.

1-----2-----3-----4-----5-----6-----7

definitely do not definitely feel

feel this way this way

1. worried
2. happy
3. disappointed
4. uptight
5. peaceful
6. honored
7. tense
8. guilty
9. fearful
10. calm
11. cheerful
12. proud
13. shameful
14. nervous
15. relaxed
16. comfortable

Relational-interdependent self-construal Scale:

Cross, S. E., Bacon, P., & Morris, M. (2000). The relational-interdependent self-construal and relationships. *Journal of Personality and Social Psychology*, 78, 791-808.

Personal Attitudes Scale

Listed below are a number of statements about various attitudes and feelings. There are no right or wrong answers to these questions; we are simply interested in how you think about yourself. In the space next to each statement, please write the number that indicates the extent to which you **agree or disagree** with each of these statements, using the following scale:

1	2	3	4	5	6	7
Strongly Disagree	Disagree	Disagree Somewhat	Neutral	Agree Somewhat	Agree	Strongly Agree

Please circle the number that best represents your response.

1. My close relationships are an important reflection of who I am.
2. When I feel very close to someone, it often feels to me like that person is an important part of who I am.
3. Overall, my close relationships have very little to do with how I feel about myself.
(reversed)
4. I think one of the most important parts of who I am can be captured by looking at my close friends and understanding who they are.
5. When I think of myself, I often think of my close friends or family also.
6. When I establish a close friendship with someone, I usually develop a strong sense of identification with that person.
7. If a person hurts someone close to me, I feel hurt as well.
8. My close relationships are unimportant to my sense of what kind of person I am.
(reversed)
9. My sense of pride comes from knowing who I have as close friends.

10. In general, my close relationships are an important part of my self-image.

11. I usually feel a strong sense of pride when someone close to me has an important accomplishment.

Scoring:

Items are reversed as needed and averaged to create an index of Relational-Interdependent Self-Construal.

Perspective taking scale (Davis, 1983):

1. Before criticizing somebody, I try to imagine how I would feel if I were in their place.

2. If I'm sure I'm right about something, I don't waste much time listening to other people's arguments. (-)

3. I sometimes try to understand my friends better by imagining how things look from their perspective.

4. I believe that there are two sides to every question and try to look at them both.

5. I sometimes find it difficult to see things from the "other guy's" point of view. (-)

6. I try to look at everybody's side of a disagreement before I make a decision.

7. When I'm upset at someone, I usually try to "put myself in his shoes" for a while.

DEMOGRAPHIC SURVEY

1. Gender: MAN WOMAN

2. Age: _____

3. Major: _____

4. You are a _____

1- undergraduate student 2- graduate student 3- other _____

5. What is your first language or mother tongue?

1- English 2- other language _____

6. Please indicate the average income level of your immediate family (circle one number):

- | | |
|-------------------------|--------------------------|
| 1- \$25,000 or below | 6 - \$65,001 - \$75,000 |
| 2- \$25, 001 – \$35,000 | 8- \$75, 001 - \$85,000 |
| 3- \$35,001 - \$45,000 | 9 - \$85,001 - \$95,000 |
| 4- \$45,001 - \$55,000 | 10- \$95,001 - \$105,000 |
| 5- \$55,001 - \$65,000 | 11- \$105,001 and above |

7. What is your socioeconomic status?

- | | | | | | | | | |
|----------|----------|----------|----------|----------|----------|----------|----------|----------|
| 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 |
| very | | | | middle | | | | very |
| poor | | | | class | | | | wealthy |

8. How would you characterize your upbringing?

- | | | | | | | | | |
|----------|----------|----------|----------|----------|----------|----------|----------|----------|
| 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 |
| very | | | | | | | | very |
| rural | | | | | | | | urban |

9. What is your religious affiliation? _____

10. Please circle the number that best represents your ethnic or cultural background:

- | | |
|-----------------------------------|-------------------------|
| 1-Caucasian American/White | 5-Multi-racial American |
| 2-African American/Black | 6-Native American |
| 3-Latino(a) American/Hispanic | 7-Alaskan Native |
| 4-Asian American/Pacific Islander | 8-International Student |
| | 9-Other |

Trivial Pursuit Game (sample questions):

Q1. How many quarts are there in a ten-gallon hat?

Answer: 40

Q2. What was Alexander Graham Bell really trying to invent when he invented the telephone? A) The radio; B) The telephone; C) A hearing aid

Answer: C) A hearing aid

Q3. What first appeared during the Jurassic period?

A) Ice storms; B) Flowering plants; C) Dinosaurs

Answer: B) Flowering plants

Q4. What creature ate the Gingerbread Man?

A) A little boy; B) A fox; C) A goose

Answer: B) A fox

Q5. What cartoon character is known as the boy with the football head?

Answer: Arnold

Q6. Where might you hear "Take 2" and "Cut"?

Answer: On a movie set

Q7. If you are described as pig-headed, what are you?

Answer: Stubborn

Q8. What do most people call a tight hug that's cuddly but a little rough?

Answer: Bear hug

Algebra task (adapted from ACT):

Task 1 for participants:

As we know, there are individual differences in math capability. Please complete following algebra questions by yourself. You may use calculator, pen and paper to help you. Please circle the option you choose. You may let the experimenter know when you feel ready to submit.

1. Employees of a discount appliance store receive an additional 20% off of the lowest price on an item. If an employee purchases a dishwasher during a 15% off sale, how much will he pay if the dishwasher originally cost \$450?
 - A. \$280.90
 - B. \$287
 - C. \$292.50
 - D. \$306
 - E. \$333.89

2. If Leah is 6 years older than Sue, and John is 5 years older than Leah, and the total of their ages is 41. Then how old is Sue?
 - A. 8
 - B. 10
 - C. 14
 - D. 19
 - E. 21

3. Jim is able to sell a hand-carved statue for \$670 which was a 35% profit over his cost. How much did the statue originally cost him?
 - A. \$496.30
 - B. \$512.40
 - C. \$555.40
 - D. \$574.90
 - E. \$588.20

4. The city council has decided to add a 0.3% tax on motel and hotel rooms. If a traveler spends the night in a motel room that costs \$55 before taxes, how much will the city receive in taxes from him?

- A. 10 cents
- B. 11 cents
- C. 15 cents
- D. 17 cents
- E. 21 cents

5. Grace has 16 jellybeans in her pocket. She has 8 red ones, 4 green ones, and 4 blue ones. What is the minimum number of jellybeans she must take out of her pocket to ensure that she has one of each color?

- A. 4
- B. 8
- C. 12
- D. 13
- E. 16

6. You need to purchase a textbook for nursing school. The book cost \$80.00, and the sales tax where you are purchasing the book is 8.25%. You have \$100. How much change will you receive back?

- A. \$5.20
- B. \$7.35
- C. \$13.40
- D. \$19.95
- E. \$21.25

7. You purchase a car making a down payment of \$3,000 and 6 monthly payments of \$225. How much have you paid so far for the car?

- A. \$3225
- B. \$4350
- C. \$5375

D. \$6550

E. \$6398

Algebra Task for confederate:

As we know, there are individual differences in math capability. Please complete following algebra questions by yourself. You may use calculator, pen and paper to help you. Please circle the option you choose. (Please be calm; comment on your math ability before experimenter leave: "Oh, math is my least favorite course!" and begin to act frustrated in your facial expression.)

1. Two cyclists start biking from a trail's start 3 hours apart. The second cyclist travels at 10 miles per hour and starts 3 hours after the first cyclist who is traveling at 6 miles per hour. How much time will pass before the second cyclist catches up with the first from the time the second cyclist started biking? (Rubbing forehead with your hand; tapping pen)

A. 2 hours

B. $4 \frac{1}{2}$ hours

C. $5 \frac{3}{4}$ hours

D. 6 hours

E. $7 \frac{1}{2}$ hours

2. Jim can fill a pool carrying buckets of water in 30 minutes. Sue can do the same job in 45 minutes. Tony can do the same job in $1 \frac{1}{2}$ hours. How quickly can all three fill the pool together? (Writing, then erasing or scribbling)

A. 12 minutes

B. 15 minutes

C. 21 minutes

D. 23 minutes

E. 28 minutes

3. What simple interest rate will Susan need to secure to make \$2,500 in interest on a \$10,000 principal over 5 years? (Sighing)

- A. 4%
- B. 5%
- C. 6%
- D. 7%
- E. 8%

4. Jim has 5 pieces of string. He needs to choose the piece that will be able to go around his 36-inch waist. His belt broke, and his pants are falling down. The piece needs to be at least 4 inches longer than his waist so he can tie a knot in it, but it cannot be more than 6 inches longer so that the ends will not show from under his shirt. Which of the following pieces of string will work the best? (sitting/ leaning back in chair)

- A. 3 feet
- B. $3\frac{3}{4}$ feet
- C. $3\frac{1}{2}$ feet
- D. $3\frac{1}{4}$ feet
- E. $2\frac{1}{2}$ feet

5. The last week of a month a car dealership sold 12 cars. A new sales promotion came out the first week of the next month and the sold 19 cars that week. What was the percent increase in sales from the last week of the previous month compared to the first week of the next month? (Picking up the paper)

- A. 58%
- B. 119%
- C. 158%
- D. 175%
- E. 200%

6. If two planes leave the same airport at 1:00 PM, how many miles apart will they be at 3:00 PM if one travels directly north at 150 mph and the other travels directly west at 200 mph? (Writing / then erasing / scribbling)

- A. 50 miles
- B. 100 miles
- C. 500 miles
- D. 700 miles
- E. 1,000 miles

7. During a 5-day festival, the number of visitors tripled each day. If the festival opened on a Thursday with 345 visitors, what was the attendance on that Sunday? (Go back to front pages and signing)

- A. 345
- B. 1,035
- C. 1,725
- D. 3,105
- E. 9,315

(make sure not act too much; use your calculator and paper to actually calculate some questions)

Word stem measure:

Exc_____	Hu_____
Emb_____	Ele_____
Deli_____	Ang_____
Glo_____	Pre_____
Jo_____	Ca_____
Bas_____	Gra_____

Rel_____ Pea_____

Mus_____ But_____

Hap_____ Ann_____

Fru_____ Wor_____

Pri_____ sha_____

Kni_____ Fea_____

Gla_____ Acc_____

Up_____ Bic_____

Ner_____ Disc_____

Scenario questions (Duffy) Retrieve from

<http://eca.state.gov/forum/journal/pea8background.htm>:

Chris has been getting in trouble in school lately. Chris doesn't do the homework and comes to class unprepared, so the teacher often remarks on Chris's laziness in front of the class. Chris also talks to other classmates during the lesson and passes notes or drops books or does other annoying things. The teacher is extremely impatient with Chris, so there is a lot of tension in the classroom. Pat is a friend of Chris's and finally asked why Chris acts the way she does in class. Chris told Pat that she had worked very hard on a science report (Chris is a very intelligent student), and that the teacher had accused her of copying another person's work and had given her a failing score on the report. Chris tried to explain that the work was hers and that maybe the other person copied, but the teacher ignored Chris's explanations.

What do you think Chris is thinking or feeling?

If you are in Pat's position, what would be going through your mind?

What would you do?

Measures for participants' perception of the Trivial Pursuit Game and Algebra

Task

Answer each of the following questions by circling the number that best represents your thoughts or feelings during the Trivial Pursuit Game in which you have just participated.

Please be very honest. Your answers will never be seen by the other person, not will your name ever appear on this questionnaire. Also, please answer quickly- usually the first response that comes to mind best reflects your true feelings (your 'gut' reaction).

Don't think about each question for very long. Thank you.

According to the performance in the Trivial Pursuit Game (the first part of this study), to what extent do you feel the other participant is ____?

	Not at all	.....	.....	Neutral	.....	.....	Extremely
Competent	1	2	3	4	5	6	7
Warm	1	2	3	4	5	6	7
Confident	1	2	3	4	5	6	7
Independent	1	2	3	4	5	6	7
Intelligent	1	2	3	4	5	6	7
Tolerant	1	2	3	4	5	6	7
Good natured	1	2	3	4	5	6	7
Competitive	1	2	3	4	5	6	7
Sincere	1	2	3	4	5	6	7

Overall, to what extent do you feel the Trivial Pursuit Game is _____?

	Not at all	.....	.....	Neutral	.....	.....	Extremely
Competitive	1	2	3	4	5	6	7
Cooperative	1	2	3	4	5	6	7

Please answer the following questions according to your experience in the algebra task.

1. What might have affected your ability to do your best on the algebra test?

2. Were there any distractions during the algebra task?

3. How hard were the algebra questions for _____?

	Very easy	.....	.....	Neutral	.....	.....	Very hard
You	1	2	3	4	5	6	7
The other participant	1	2	3	4	5	6	7

4. Did you check the answers after you finished all of them?

None	.....	.....	Some	.....	.....	All
of them			of them			of them
1	2	3	4	5	6	7

5. How fast did you try to finish the algebra task compared to your normal speed?

Very	.....	.....	Moderately	.....	.....	Very
slowly			quickly			fast
1	2	3	4	5	6	7

6. How confident are you in your math ability?

Not at all	.....	.....	Average	.....	.....	Extremely
confident						confident
1	2	3	4	5	6	7

7. How confident in his/her math capability do you think the other participant is?

Not at all	.....	.....	Average	.....	.....	Extremely
confident						confident
1	2	3	4	5	6	7

8. How many questions do you think you got wrong?

0	1	2	3	4	5	6	7
---	---	---	---	---	---	---	---

REFERENCES

- Abraham, C., Henderson, M., & Der, G. (2004). Cognitive impact of a research-based school sex education programme. *Psychology & Health, 19*(6), 689-703.
doi:10.1080/08870440410001722921
- Abraham, C., & Sheeran, P. (2004). Deciding to exercise: The role of anticipated regret. *British Journal of Health Psychology, 9*(2), 269-278.
doi:10.1348/135910704773891096
- Andersen, S. M., Glassman, N. S., Chen, S., & Cole, S. W. (1995). Transference in social perception: The role of chronic accessibility in significant-other representations. *Journal of Personality and Social Psychology, 69*(1), 41-57.
doi:10.1037/0022-3514.69.1.41
- Aspinwall, L. G. (1998). Rethinking the role of positive affect in self-regulation. *Motivation and Emotion. Special Issue: Positive Affect and Self-Regulation: I, 22*(1), 1-32.
doi:10.1023/A:1023080224401
- Ayduk, O., Mendoza-Denton, R., Mischel, W., Downey, G., Peake, P. K., & Rodriguez, M. (2000). Regulating the interpersonal self: Strategic self-regulation for coping with rejection sensitivity. *Journal of Personality and Social Psychology, 79*(5), 776-792. doi:10.1037/0022-3514.79.5.776
- Baldwin, M. W. (1992). Relational schemas and the processing of social information. *Psychological Bulletin, 112*(3), 461-484. doi:10.1037/0033-2909.112.3.461
- Baumeister, R. F., DeWall, C. N., Ciarocco, N. J., & Twenge, J. M. (2005). Social exclusion impairs self-regulation. *Journal of Personality and Social Psychology, 88*(4), 589-604. doi:10.1037/0022-3514.88.4.589
- Baumeister, R. F., & Heatherton, T. F. (1996). Self-regulation failure: An overview. *Psychological Inquiry, 7*(1), 1-15. doi:10.1207/s15327965pli0701_1

- Baumeister, R. F., & Leary, M. R. (1995). The need to belong: Desire for interpersonal attachments as a fundamental human motivation. *Psychological Bulletin*, *117*(3), 497-529. doi:10.1037/0033-2909.117.3.497
- Baumeister, R. F., Stillwell, A. M., & Heatherton, T. F. (1994). Guilt: An interpersonal approach. *Psychological Bulletin*, *115*(2), 243-267. doi:10.1037/0033-2909.115.2.243
- Baumeister, R. F., Vohs, K. D., DeWall, C. N., & Zhang, L. (2007). How emotion shapes behavior: Feedback, anticipation, and reflection, rather than direct causation. *Personality and Social Psychology Review*, *11*(2), 167-203. doi:10.1177/1088868307301033
- Baumgartner, H., Pieters, R., & Bagozzi, R. P. (2008). Future-oriented emotions: Conceptualization and behavioral effects. *European Journal of Social Psychology*, *38*(4), 685-696. doi:10.1002/ejsp.467
- Blascovich, J., & Tomaka, J. (1996). The biopsychosocial model of arousal regulation. In M. P. Zanna, & M. P. Zanna (Eds.), *Advances in experimental social psychology*, vol. 28. (pp. 1-51). San Diego, CA, US: Academic Press. doi:10.1016/S0065-2601(08)60235-X
- Carver, C. S. (2003). Pleasure as a sign you can attend to something else: Placing positive feelings within a general model of affect. *Cognition and Emotion*, *17*(2), 241-261. doi:10.1080/02699930302294
- Carver, C. S., & Scheier, M. F. (1990). Origins and functions of positive and negative affect: A control-process view. *Psychological Review*, *97*(1), 19-35. doi:10.1037/0033-295X.97.1.19
- Centerbar, D. B., Schnall, S., Clore, G. L., & Garvin, E. D. (2008). Affective incoherence: When affective concepts and embodied reactions clash. *Journal of Personality and Social Psychology*, *94*(4), 560-578. doi:10.1037/0022-3514.94.4.560

- Conner, M., Sandberg, T., McMillan, B., & Higgins, A. (2006). Role of anticipated regret, intentions and intention stability in adolescent smoking initiation. *British Journal of Health Psychology, 11*(1), 85-101. doi:10.1348/135910705X40997
- Crocker, J., Luhtanen, R. K., Cooper, M. L., & Bouvrette, A. (2003). Contingencies of self-worth in college students: Theory and measurement. *Journal of Personality and Social Psychology, 85*(5), 894-908. doi:10.1037/0022-3514.85.5.894
- Cross, S. E., Bacon, P. L., & Morris, M. L. (2000). The relational-interdependent self-construal and relationships. *Journal of Personality and Social Psychology, 78*(4), 791-808. doi:10.1037/0022-3514.78.4.791
- Cross, S. E., & Morris, M. L. (2003). Getting to know you: The relational self-construal, relational cognition, and well-being. *Personality and Social Psychology Bulletin, 29*(4), 512-523. doi:10.1177/0146167202250920
- Davis, M. H. (1983). Measuring individual differences in empathy: Evidence for a multidimensional approach. *Journal of Personality and Social Psychology, 44*(1), 113-126. doi:10.1037/0022-3514.44.1.113
- De Dreu, C. K. W. (2003). Time pressure and closing of the mind in negotiation. *Organizational Behavior and Human Decision Processes, 91*(2), 280-295. doi:10.1016/S0749-5978(03)00022-0
- De Dreu, C. K. W., & Carnevale, P. J. (2003). Motivational bases of information processing and strategy in conflict and negotiation. In M. P. Zanna (Ed.), (), pp. 235-291). San Diego, CA, US: Elsevier Academic Press. doi:10.1016/S0065-2601(03)01004-9
- De Dreu, C. K. W., Nijstad, B. A., & van Knippenberg, D. (2008). Motivated information processing in group judgment and decision making. *Personality and Social Psychology Review, 12*(1), 22-49. doi:10.1177/1088868307304092

- Downey, G., & Feldman, S. I. (1996). Implications of rejection sensitivity for intimate relationships. *Journal of Personality and Social Psychology, 70*(6), 1327-1343. doi:10.1037/0022-3514.70.6.1327
- Downey, G., Khouri, H., & Feldman, S. I. (1997). Early interpersonal trauma and later adjustment: The mediational role of rejection sensitivity. In D. Cicchetti, & S. L. Toth (Eds.), (pp. 85-114). Rochester, NY, US: University of Rochester Press.
- Dunn, E. W., Wilson, T. D., & Gilbert, D. T. (2003). Location, location, location: The misprediction of satisfaction in housing lotteries. *Personality and Social Psychology Bulletin, 29*(11), 1421-1432. doi:10.1177/0146167203256867
- Duffy, C. B. (n.d.). Peace Education, in *Forum's* electronic journal *Language and Civil Society*. Retrieved from <http://eca.state.gov/forum/journal/pea8appendix.htm>
- Fishbach, A., & Labroo, A. A. (2007). Be better or be merry: How mood affects self-control. *Journal of Personality and Social Psychology, 93*(2), 158-173. doi:10.1037/0022-3514.93.2.158
- Fiske, S. T., Cuddy, A. J. C., Glick, P., & Xu, J. (2002). A model of (often mixed) stereotype content: Competence and warmth respectively follow from perceived status and competition. *Journal of Personality and Social Psychology, 82*(6), 878-902. doi:10.1037/0022-3514.82.6.878
- Fitzsimons, G. M., & Bargh, J. A. (2003). Thinking of you: Nonconscious pursuit of interpersonal goals associated with relationship partners. *Journal of Personality and Social Psychology, 84*(1), 148-164. doi:10.1037/0022-3514.84.1.148
- Fitzsimons, G. M., & Finkel, E. J. (2010). Interpersonal influences on self-regulation. *Current Directions in Psychological Science, 19*(2), 101-105. doi:10.1177/0963721410364499

- Fredrickson, B. L. (2001). The role of positive emotions in positive psychology: The broaden-and-build theory of positive emotions. *American Psychologist*, *56*(3), 218-226. doi:10.1037/0003-066X.56.3.218
- Fredrickson, B. L., & Branigan, C. (2005). Positive emotions broaden the scope of attention and thought-action repertoires. *Cognition and Emotion*, *19*(3), 313-332. doi:10.1080/02699930441000238
- Geer, J. H., Estupinan, L. A., & Manguno-Mire, G. M. (2000). Empathy, social skills, and other relevant cognitive processes in rapists and child molesters. *Aggression and Violent Behavior*, *5*(1), 99-126. doi:10.1016/S1359-1789(98)00011-1
- Gelfand, M. J., & Christakopoulou, S. (1999). Culture and negotiator cognition: Judgment accuracy and negotiation processes in individualistic and collectivistic cultures. *Organizational Behavior and Human Decision Processes*, *79*(3), 248-269. doi:10.1006/obhd.1999.2845
- Gore, J. S., & Cross, S. E. (2006). Pursuing goals for us: Relationally autonomous reasons in long-term goal pursuit. *Journal of Personality and Social Psychology*, *90*(5), 848-861. doi:10.1037/0022-3514.90.5.848
- Gore, J. S., Cross, S. E., & Kanagawa, C. (2009). Acting in our interests: Relational self-construal and goal motivation across cultures. *Motivation and Emotion*, *33*(1), 75-87. doi:10.1007/s11031-008-9113-1
- Grossmann, I., & Kross, E. (2010). The impact of culture on adaptive versus maladaptive self-reflection. *Psychological Science*, *21*(8), 1150-1157. doi:10.1177/0956797610376655
- Hatfield, E., Cacioppo, J. T., & Rapson, R. L. (1994). *Emotional contagion*. New York, NY, US: Cambridge University Press; Paris, France: Editions de la Maison des Sciences de l'Homme.

- Hayes, A. F. (2012). PROCESS: A versatile computational tool for observed variable moderation, mediation, and conditional process modeling. *Manuscript submitted for publication*
- Heine, S. J., Kitayama, S., Lehman, D. R., Takata, T., Ide, E., Leung, C., & Matsumoto, H. (2001). Divergent consequences of success and failure in japan and north america: An investigation of self-improving motivations and malleable selves. *Journal of Personality and Social Psychology, 81*(4), 599-615. doi:10.1037/0022-3514.81.4.599
- Higgins, E. T. (1987). Self-discrepancy: A theory relating self and affect. *Psychological Review, 94*(3), 319-340. doi:10.1037/0033-295X.94.3.319
- Hirt, E. R., Melton, R. J., McDonald, H. E., & Harackiewicz, J. M. (1996). Processing goals, task interest, and the mood–performance relationship: A mediational analysis. *Journal of Personality and Social Psychology, 71*(2), 245-261. doi:10.1037/0022-3514.71.2.245
- Isen, A. M., & Daubman, K. A. (1984). The influence of affect on categorization. *Journal of Personality and Social Psychology, 47*(6), 1206-1217. doi:10.1037/0022-3514.47.6.1206
- Isen, A. M., Johnson, M. M., Mertz, E., & Robinson, G. F. (1985). The influence of positive affect on the unusualness of word associations. *Journal of Personality and Social Psychology, 48*(6), 1413-1426. doi:10.1037/0022-3514.48.6.1413
- Janis, I. L., & Mann, L. (1977). *Decision making: A psychological analysis of conflict, choice, and commitment*. New York, NY, US: Free Press.
- Johnson, K. J., Waugh, C. E., & Fredrickson, B. L. (2010). Smile to see the forest: Facially expressed positive emotions broaden cognition. *Cognition and Emotion, 24*(2), 299-321. doi:10.1080/02699930903384667

- Krumhuber, E., Manstead, A. S. R., Cosker, D., Marshall, D., Rosin, P. L., & Kappas, A. (2007). Facial dynamics as indicators of trustworthiness and cooperative behavior. *Emotion, 7*(4), 730-735. doi:10.1037/1528-3542.7.4.730
- Krumhuber, E., Manstead, A. S. R., Cosker, D., Marshall, D., & Rosin, P. L. (2009). Effects of dynamic attributes of smiles in human and synthetic faces: A simulated job interview setting. *Journal of Nonverbal Behavior, 33*(1), 1-15. doi:10.1007/s10919-008-0056-8
- Kunda, Z. (2001). Hot cognition: The impact of motivation and affect on judgment. In *Social cognition: Making sense of people*. Cambridge, MA: MIT Press.
- Lee, A. Y., Aaker, J. L., & Gardner, W. L. (2000). The pleasures and pains of distinct self-construals: The role of interdependence in regulatory focus. *Journal of Personality and Social Psychology, 78*(6), 1122-1134. doi:10.1037/0022-3514.78.6.1122
- Lockwood, P., Jordan, C. H., & Kunda, Z. (2002). Motivation by positive or negative role models: Regulatory focus determines who will best inspire us. *Journal of Personality and Social Psychology, 83*(4), 854-864. doi:10.1037/0022-3514.83.4.854
- Lockwood, P., Marshall, T. C., & Sadler, P. (2005). Promoting success or preventing failure: Cultural differences in motivation by positive and negative role models. *Personality and Social Psychology Bulletin, 31*(3), 379-392. doi:10.1177/0146167204271598
- Manstead, A. S. R., & Fischer, A. H. (2001). Social appraisal: The social world as object of and influence on appraisal processes. In K. R. Scherer, A. Schorr & T. Johnstone (Eds.), (pp. 221-232). New York, NY, US: Oxford University Press.

- Manucia, G. K., Baumann, D. J., & Cialdini, R. B. (1984). Mood influences on helping: Direct effects or side effects? *Journal of Personality and Social Psychology*, 46(2), 357-364. doi:10.1037/0022-3514.46.2.357
- Markus, H. R., & Kitayama, S. (1991). Culture and the self: Implications for cognition, emotion, and motivation. *Psychological Review*, 98(2), 224-253. doi:10.1037/0033-295X.98.2.224
- Marshall, W. L., Hudson, S. M., Jones, R., & Fernandez, Y. M. (1995). Empathy in sex offenders. *Clinical Psychology Review*, 15(2), 99-113. doi:10.1016/0272-7358(95)00002-7
- McConnell, A. R., Niedermeier, K. E., Leibold, J. M., El-Alayli, A. G., Chin, P. P., & Kuiper, N. M. (2000). What if I find it cheaper someplace else?: Role of prefactual thinking and anticipated regret in consumer behavior. *Psychology & Marketing. Special Issue: Counterfactual Thinking*, 17(4), 281-298. doi:10.1002/(SICI)1520-6793(200004)17:4<281::AID-MAR2>3.0.CO;2-5
- Mellers, B., Schwartz, A., & Ritov, I. (1999). Emotion-based choice. *Journal of Experimental Psychology: General*, 128(3), 332-345. doi:10.1037/0096-3445.128.3.332
- Metcalfe, J., & Mischel, W. (1999). A hot/cool-system analysis of delay of gratification: Dynamics of willpower. *Psychological Review*, 106(1), 3-19. doi:10.1037/0033-295X.106.1.3
- Morrison, K. R., Wheeler, S. C., & Smeesters, D. (2007). Significant other primes and behavior: Motivation to respond to social cues moderates pursuit of prime-induced goals. *Personality and Social Psychology Bulletin*, 33(12), 1661-1674. doi:10.1177/0146167207307491

- Nolen-Hoeksema, S., Wisco, B. E., & Lyubomirsky, S. (2008). Rethinking rumination. *Perspectives on Psychological Science*, 3(5), 400-424. doi:10.1111/j.1745-6924.2008.00088.x
- Norem, J. K., & Cantor, N. (1986). Defensive pessimism: Harnessing anxiety as motivation. *Journal of Personality and Social Psychology*, 51(6), 1208-1217. doi:10.1037/0022-3514.51.6.1208
- Petty, R. E., & Cacioppo, J. T. (1986). The elaboration likelihood model of persuasion. *Advances in Experimental Social Psychology*, 19, 123-205.
- Preacher, K. J., & Hayes, A. F. (2008). Asymptotic and resampling strategies for assessing and comparing indirect effects in multiple mediator models. *Behavior Research Methods*, 40(3), 879-891. doi:10.3758/BRM.40.3.879
- Richard, R., van der Pligt, J., & de Vries, N. (1996). Anticipated regret and time perspective: Changing sexual risk-taking behavior. *Journal of Behavioral Decision Making*, 9(3), 185-199. doi:10.1002/(SICI)1099-0771(199609)9:3<185::AID-BDM228>3.0.CO;2-5
- Ritov, I., & Baron, J. (1990). Reluctance to vaccinate: Omission bias and ambiguity. *Journal of Behavioral Decision Making*, 3(4), 263-277.
- Sandberg, T., & Conner, M. (2008). Anticipated regret as an additional predictor in the theory of planned behaviour: A meta-analysis. *British Journal of Social Psychology*, 47(4), 589-606. doi:10.1348/014466607X258704
- Schwarz, N., & Clore, G. L. (1983). Mood, misattribution, and judgments of well-being: Informative and directive functions of affective states. *Journal of Personality and Social Psychology*, 45(3), 513-523. doi:10.1037/0022-3514.45.3.513
- Shah, J. (2003). Automatic for the people: How representations of significant others implicitly affect goal pursuit. *Journal of Personality and Social Psychology*, 84(4), 661-681. doi:10.1037/0022-3514.84.4.661

- Triandis, H. C. (1989). The self and social behavior in differing cultural contexts. *Psychological Review*, 96(3), 506-520. doi:10.1037/0033-295X.96.3.506
- Tice, D. M., Baumeister, R. F., Shmueli, D., & Muraven, M. (2007). Restoring the self: Positive affect helps improve self-regulation following ego depletion. *Journal of Experimental Social Psychology*, 43(3), 379-384. doi:10.1016/j.jesp.2006.05.007
- Tice, D. M., Bratslavsky, E., & Baumeister, R. F. (2001). Emotional distress regulation takes precedence over impulse control: If you feel bad, do it! *Journal of Personality and Social Psychology*, 80(1), 53-67. doi:10.1037/0022-3514.80.1.53
- van Baaren, R. B., Maddux, W. W., Chartrand, T. L., de Bouter, C., & van Knippenberg, A. (2003). It takes two to mimic: Behavioral consequences of self-construals. *Journal of Personality and Social Psychology*, 84(5), 1093-1102. doi:10.1037/0022-3514.84.5.1093
- Van Kleef, G. A. (2009). How emotions regulate social life: The emotions as social information (EASI) model. *Current Directions in Psychological Science*, 18(3), 184-188. doi:10.1111/j.1467-8721.2009.01633.x
- Van Kleef, G. A., De Dreu, C. K. W., & Manstead, A. S. R. (2004). The interpersonal effects of anger and happiness in negotiations. *Journal of Personality and Social Psychology*, 86(1), 57-76. doi:10.1037/0022-3514.86.1.57
- Van Kleef, G. A., De Dreu, C. K. W., & Manstead, A. S. R. (2010). An interpersonal approach to emotion in social decision making: The emotions as social information model. *Advances in Experimental Social Psychology*, 42, 45-96.
- Watson, D., Clark, L. A., & Tellegen, A. (1988). Development and validation of brief measures of positive and negative affect: The PANAS scales. *Journal of Personality and Social Psychology*, 54(6), 1063-1070. doi:10.1037/0022-3514.54.6.1063

Wegener, D. T., & Petty, R. E. (1994). Mood management across affective states: The hedonic contingency hypothesis. *Journal of Personality and Social Psychology*, 66(6), 1034-1048. doi:10.1037/0022-3514.66.6.1034

Wegener, D. T., & Petty, R. E. (1996). Effects of mood on persuasion processes: Enhancing, reducing, and biasing scrutiny of attitude-relevant information. In L. L. Martin, & A. Tesser (Eds.), *Striving and feeling: Interactions among goals, affect, and self-regulation*. (pp. 329-362). Hillsdale, NJ, England: Lawrence Erlbaum Associates, Inc

Wilson, T. D., & Gilbert, D. T. (2005). Affective forecasting: Knowing what to want. *Current Directions in Psychological Science*, 14(3), 131-134. doi:10.1111/j.0963-7214.2005.00355.x

Zhang, M., & Cross, S. E. (2011). Emotions in memories of success and failure: A cultural perspective. *Emotion*, 11(4), 866-880. doi:10.1037/a0024025

Zhang, M., Cross, S. E., & Hou, Y. (2012). Feeling good or feeling bad about your performance? The role of culture and mood attribution in self-regulation. Unpublished Manuscript, Iowa State University, Ames, US