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**Culture and Patterns of Reciprocity:**

**The Role of Exchange Type, Regulatory Focus and Emotions**

**Abstract**

Reciprocity is a fundamental mechanism for sustained social relationships. Escalation-based theories suggest that reciprocity intensify over time. In contrast, equity-based theories propose that people reciprocate behaviors in-kind. We reconcile these conflicting perspectives by examining social exchanges across different cultural contexts. Using three complementary experiments, this research investigates when, how, and why individuals in East Asian settings and in North American settings differentially reciprocate positive versus negative behaviors over time. Study 1 demonstrated that in positively-framed exchanges (i.e., giving), Americans escalated their reciprocity, but Singaporeans reciprocated in-kind. However, in negatively-framed exchanges (i.e., taking), Singaporeans escalated their reciprocity, but Americans reciprocated in-kind. Study 2 replicated the results using Hong Kongers and showed that cultural differences in regulatory focus were associated with specific emotions (i.e., anxiety and happiness), which then escalated reciprocity. To establish causality, Study 3 manipulated regulatory focus within one culture and replicated the pattern of results.

*Keywords:* Reciprocity, Social Exchange, Culture, Regulatory Focus, Emotions

## **Culture and Patterns of Reciprocity: The Role of Exchange Type, Regulatory Focus and Emotions**

Humans are embedded in social relationships. Social exchange theory, a prominent conceptual model, treats social relationships as a series of transactions between two or more parties (Cropanzano et al., 2017). According to this theory, people's transactions are shaped by the history of their interactions. Importantly, each transaction casts a long shadow of the future on the continued exchanges between individuals (Baron & Neuman, 1996; Burger, 1986; Charness et al., 2007). Social exchange theory also suggests that reciprocity governs interpersonal exchanges by which each individual reciprocates the behaviors of another (e.g., Gouldner, 1960; Helm et al., 1972).

Past research provides different perspectives about the role of reciprocity in repeated social exchanges. One perspective is that recipients reciprocate actions in-kind (Lyons & Scott, 2012). Referred to as homeomorphic reciprocity, this view suggests that the behavior that follows an action should be similar in valence (i.e., positive or negative) and magnitude to the original behavior that instigated the positive or negative reciprocity (Cropanzano et al., 2017; Lyons & Scott, 2012). As a result, reciprocity should remain relatively stable over time. In contrast, however, a different perspective is that reciprocity may escalate over time (e.g., Andersson & Pearson, 1999; Hershcovis & Barling, 2010).

In this research, we reconcile these conflicting perspectives by crucially examining both positive and negative social exchanges across different cultural contexts. We investigate when and why culture, in repeated exchange relationships, induce homeomorphic reciprocity in some contexts and the escalation of reciprocity in other contexts. We propose that individuals in different cultural settings may perceive equivalent positively- and negatively-framed exchanges

asymmetrically. Specifically, we suggest that in positive exchanges, individuals in North American settings will escalate reciprocity, but individuals in East Asian settings will reciprocate in-kind. In contrast, in negative exchanges, individuals in East Asian settings will escalate their reciprocity, but individuals in North American settings will reciprocate in-kind. We also investigate whether these different escalation patterns are driven by culturally-induced regulatory focus and emotions. Specifically, we propose that because individuals in North American settings tend to exhibit a prevention focus that heightens anxiety, negative exchanges will likely escalate. Conversely, because individuals in East Asian settings tend to exhibit a promotion focus that heightens happiness, positive exchanges will likely escalate.

### **Theoretical Development**

#### **Social Exchange**

Social exchange theory suggests that human relationships involve continuous exchanges between individuals (Andersson & Pearson, 1999; Baron & Neuman, 1996; Burger, 1986; Charness et al., 2007; Leymann, 1990; McCabe et al., 2003; Rind & Strohmetz, 1999). In particular, individuals calculate the worth of their interpersonal exchanges by considering the rewards and costs of these exchanges in terms of the positive value or negative value they bring (Homan, 1961). Based on these calculations, individuals decide how to act and respond to others within these interpersonal exchanges.

In this paper, we examine a specific aspect of social exchange—reciprocity. Reciprocity is not only a taken-for-granted assumption in humans, it also reinforces other social norms (Fehr & Gächter, 1998). The process of reciprocity is when “one party tends to repay the good (or sometimes bad) deeds of another party” (Cropanzano et al., 2017, p. 1). For example, Homan (1961) suggested that individuals will take action to remedy a perceived injustice and Blau

(1964) argued that people consciously incur costs (e.g., do someone a favor) with an expectation of receiving a reward in the future (e.g., receive a favor). In essence, because reciprocity dictates that people must “do unto others as you would have them do unto you” (Matthew 7:12), it often occurs as a reaction to others’ positive or negative actions (Heider, 2013).

One perspective is that positive and negative behaviors are repaid in-kind (i.e., homeomorphic reciprocity; Cropanzano et al., 2017; Lyons & Scott, 2012). While homeomorphic reciprocity suggests that positive or negative behaviors trigger positive or negative reciprocity of similar magnitudes, how individuals choose to reciprocate is often less tidy (Keysar et al., 2008). For example, how a receiver reciprocates is influenced by social factors such as assessments of the favor-giver (El-Alayli & Messé, 2004), characteristics of the reciprocator (Bowles & Gintis, 2003; Perugini et al., 2003), societal norms (Blau, 1968; Fehr et al., 2002; Whitson, Wang, See, et al., 2015), or their emotions (Wang et al., 2009). Therefore, individuals’ motivation to reciprocate is greatly shaped by the social meanings rather than merely the cool cognitive calculus of the objective value of the resources exchanged (Brown, 1986).

As such, an alternative framework proposes that reciprocation can intensify over time (e.g., Andersson & Pearson, 1999; Baron & Neuman, 1996; Folger & Skarlicki, 1998; Hershcovis & Barling, 2010; Zand, 1972) and research has found that several important factors to explain the escalation of positive and negative reciprocity. Researchers focusing on the escalation of negative reciprocity have argued that relationships build “interpersonal heat” (Folger & Skarlicki, 1998; Greco et al., 2019) that progressively incites harsher retaliatory behavior. For example, Keysar et al. (2008) demonstrated in a four-round dictator game, people escalate negative actions (i.e., in a ‘taking’ game, leaving fewer resources to the target over

time), but not positive actions (i.e., in a ‘giving’ game, providing more resources to the target over time). Researchers have also found that when group members differ in their tendencies to trust (Ferguson & Peterson, 2015) or when individuals are viewed as strategic because they are inconsistent with their return rates in a trust game (Bourgeois-Gironde & Corcos, 2011), ‘downward trust spirals’ occur. These findings are consistent with the work that demonstrates negative events influence emotions, cognitions, and behavior more than positive events (for reviews, see Baumeister et al., 2001; Rozin & Royzman, 2001). They are also consistent with economic studies, which demonstrate that individuals perceive and reciprocate negative actions more aggressively than positive actions (e.g., Abbink et al., 2000; Fehr & Gächter, 2000; Keysar et al., 2008; Offerman, 2002).

Yet researchers have also demonstrated that the escalation of positive reciprocity can also occur under certain circumstances. For example, Bourgeois-Gironde and Corcos (2011) found that consistent and high levels of return rates in a trust game motivates trusting behaviors and the escalation of positive reciprocity. Another factor that drives the escalation of positive reciprocity is levels of relational capital, i.e., the level of trust accumulated from the repeated social interactions (Elfenbein & Zenger, 2013). For example, the seminal work by Berg et al. (1995) suggested the escalation of positive reciprocity occurred in investment games when participants who played the investor roles exhibited trust.

In this paper, we reconcile these conflicting perspectives and suggest that the cultural context and the type of exchange are vital in determining the patterns of reciprocity that emerge over time. Specifically, we investigate how cultural differences in regulatory focus (e.g., Lockwood et al., 2005; Uskul et al., 2009) shape emotional experiences (e.g., Hochschild, 1983; Tsai et al., 2006), which then may subsequently influence whether positive and negative

exchanges are reciprocated in a homeomorphic or escalating manner. By invoking both regulatory focus and emotions as two underlying cultural mechanisms for our observed results, our work helps reconcile conflicting findings in the extant literature by providing a nuanced understanding of how the social environment influences patterns of social exchange.

### **Cultural Differences in Regulatory Focus Drives Emotional Experiences**

Cultural differences in regulatory focus can have important implications in our contexts (e.g., Lockwood et al., 2005; Uskul et al., 2009). Regulatory focus theory posits humans operate via two distinct types of self-regulatory strategies (Higgins, 1997; Higgins et al., 1997): a prevention and promotion focus. People with a prevention focus pay more attention to losses than to gains, attempt to align their actual self with their ought self by fulfilling obligations, are guided by a need for security, and more likely to focus on negative aspects of the self and situations to prevent future mishaps. In comparison, individuals with a promotion focus are more gain- rather than loss-oriented, have aspirations to align their actual self with their ideal self, are guided by the need for growth, and more likely to focus on positive aspects of the self and situations to attain gains (Higgins, 2000; Higgins & Spiegel, 2004).

*East Asian Settings and Prevention Focus.* Cultural settings can play a critical role in determining one's self-regulatory orientations, with individuals in East Asian settings often exhibiting more prevention focus than individuals in North American settings (e.g., Lee et al., 2000; Lockwood et al., 2005; Uskul et al., 2009). Individuals in East Asian settings are embedded in an intricate web of close-knit interpersonal relationships (Heine et al., 1999; Kitayama et al., 1997; Markus & Kitayama, 1991), which emphasize the fulfillment of one's obligation towards others, the maintenance of harmony, and a vigilant outlook to maintain existing connections (Falk et al., 2009; Heine et al., 1999). This careful consideration of social

relationships is seen as necessary for the maintenance of everyday well-being (Hamamura & Heine, 2008; Hashimoto & Yamagishi, 2013; Oishi & Kesebir, 2012) and encourages a more cautious undertaking of friendship (Adams & Plaut, 2003), and an alertness for attacks by enemies (Adams, 2005). As a result, individuals in East Asian settings often take a more prevention-focused approach towards social relationships (Adams & Plaut, 2003). For example, as compared to individuals in North American settings, individuals in East Asian settings are more punitive toward wrong-doers (Wang & Leung, 2010; Whitson, Wang, Kim, et al., 2015).

*North American Settings and Promotion Focus.* In contrast, individuals in North American settings are more promotion focused than individuals in East Asian settings (Lee et al., 2000; Lockwood et al., 2005; Uskul et al., 2009) because individuals in North American settings perceive their social networks to be more open and transient (Oishi & Kisling, 2009) and their social world to be more malleable (Chen et al., 2009). As a result, they possess more opportunities to meet new people and develop new social relationships (Schug et al., 2009). These structural aspects encourage individuals in North American settings to focus less on vigilantly maintaining existing connections, and more on attaining positive achievements (Lee et al., 2000) and developing new positive relationships. Thus, individuals in North American settings are more likely to exhibit a “promotion-oriented relationality” approach by placing an emphasis on finding emotional and satisfaction via new social connections (Li et al., 2015). This approach allows for more open friendships and greater self-disclosure in relationships (Schug et al., 2010), more positive behaviors toward trustworthy strangers (Wang & Leung, 2010), and disengagement from relationships that no longer provide satisfaction (Adams & Plaut, 2003).

*Cultural Differences in Emotions.* These cultural differences in regulatory focus are particularly evident in emotional experiences. Positive and negative emotions are managed by



two partially distinct self-regulatory systems: the behavioral activation system and behavioral inhibition system (Carver, 2006). Regulatory focus theory contends that people are motivated to adjust their feelings in a manner that aligns with their self-regulatory system, so they can be “trait-consistent”. Therefore, as prevention-oriented individuals focus on the “potentially negative aspects of the self and situations in an attempt to avoid future social mishap” (Lee et al., 2000, p. 1123; Also see Sato et al., 2014; Zhang & Mittal, 2007), their behavioral inhibition system primarily motivates negative feelings (Carver & Scheier, 1998; Gorman et al., 2012; Gray, 1981, 1990; Higgins, 1987), which help individuals stay vigilant towards threats in the environment (Friedman & Förster, 2008; Lee et al., 2000; Li & Masuda, 2016). As a result, individuals’ prevention-focused nature in East Asian settings is more likely to motivate prevention-focused emotions such as worry and anxiety.

In contrast, because promotion-focused individuals primarily focus on personal achievement, potential gains, and positive relationships, their behavioral activation system often motivates positive feelings such as happiness, joy, and optimism (Gorman et al., 2012), which allow them to seek more opportunities to strengthen their social interactions (Schug et al., 2010). Thus, individuals’ promotion focus in North American settings (Lee et al., 2000) is more likely to be associated with promotion-focused rather than prevention-focused emotions (Friedman & Förster, 2008; Gorman et al., 2012; Weber & Bauman, 2019).

*Escalation of Positive versus Negative Exchange.* Our aforementioned discussion suggests that cultural differences in regulatory focus is associated with positive (happiness) versus negative emotions (anxiety), which in turn explain different patterns of reciprocity. Emotions influence the reciprocity process (e.g., Lawler & Thye, 1999) by shaping people’s perceptions and interpretations of others’ behaviors and of the situation (Bower, 1991; Isen,

1987). Because positive or negative emotions direct attention to different social meanings (Barrett et al., 2016; Lawler & Thye, 1999), we expect that individuals will be more sensitive to optimistic information when they experience positive emotions such as happiness and will be more sensitive to pessimistic information when they experience negative emotions such as anxiety (Fredrickson, 2001).

Indeed, research has found that individuals experiencing positive emotions interpret and perceive neutral events more positively than those experiencing negative emotions (Bower, 1981, 1991; Isen, 1987), overestimating the probability of positive events and underestimating the likelihood of negative events (Wright & Bower, 1992). Because promotion-focused individuals in North American settings are more likely to experience happiness, they may be more attuned to others' positive actions (e.g., giving), prompting the escalation of reciprocity in positive exchanges. On the other hand, however, this suggests that individuals in North American settings may also be less attuned to others' negative actions (e.g., taking) and as a result, negative exchanges will likely remain constant over time.

Meanwhile, extant research has demonstrated that people experiencing negative emotions are likely to overestimate the probability of negative events (Wright & Bower, 1992), feel threatened and perceive the environment as problematic (Schwarz, 1990, 2000; Västfjäll et al., 2001). As a result, they are more likely to engage in negative reciprocity to enhance the safety of their own and people around them (Ben-Ari et al., 1999; Keller et al., 2008; Leith & Baumeister, 1996). This logic suggests that because prevention-focused individuals in East Asian settings experience anxiety, they may be attuned to others' negative actions (e.g., taking) and more likely to escalate reciprocity in negative exchanges. However, heightened anxiety may make

individuals in East Asian settings less attuned to others' positive actions, resulting in relatively consistent levels of reciprocity in positive exchanges over time.

Importantly, our model is congruent with regulatory fit theory, which suggests that an alignment between one's regulatory disposition and situational frame (i.e., regulatory fit; Higgins, 2000; see Johnson et al. (2015) for an organizational review) results in individuals feeling right (Camacho et al., 2003). These feelings of fit can have perceptual ramifications, increasing the persuasiveness of the messages that are congruent with a person's predominant motivational orientation (e.g., Elliot, 1997). Consistent with this logic, Lee and Aaker (2004) demonstrated that gain-framed appeals were more persuasive following promotion-focused messages, but loss-framed appeals were more persuasive following prevention-focused messages.

Regulatory fit theory suggests that peoples' escalation of reciprocity is influenced by the fit between individuals' culturally-driven regulatory orientation and the situational framing; importantly, we argue that emotions play a central role in this logic. On the one hand, as anxiety draws attention to loss-related information and increases vigilance over repeated negatively-framed exchanges (Bradley et al., 1998), individuals' feelings of fit in East Asian settings may grow with increasing strength, and as a result, the escalation of negatively-framed exchanges may increase over time. However, because the feelings of fit do not align the prevention-focused driven anxiety and the situational gain frame, the escalation of positively-framed exchanges may not occur in East Asian settings. On the other hand, because happiness draws attention to gain-related information (Wright & Bower, 1992) and promotes eagerness (Fredrickson, 2001; Klenk et al., 2011), over repeated positively-framed exchanges, feelings of fit may also grow. This approach predicts that the escalation of positively-framed exchanges will emerge for individuals

in North American settings because the giving frame matches well with their promotion-oriented driven happiness. However, given that the lack of fit between the promotion orientation and a situational loss frame, the escalation of negatively-framed exchanges will be less likely to occur in North American settings.

Taken together, since individuals in North American settings are more promotion focused in comparison to individuals in East Asian settings, and subsequently experience happiness that make them more attentive to positive actions, we hypothesize that within positive exchanges, individuals in North American settings will escalate positive reciprocity, but positive reciprocity of individuals in East Asian settings will remain stable over time. In contrast, because individuals in East Asian settings are more prevention focused in comparison to individuals in North American settings and experience anxiety that make them more attentive to negative actions, in negative exchanges, individuals in East Asian settings will escalate negative reciprocity, but negative reciprocity of individuals in North American settings will remain stable over time; see Figure 1).

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 Insert Figure 1 about here  
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### **Alternative Theoretical Pathways**

Our model proposes that cultural differences in regulatory focus will lead to positive (happiness) versus negative emotions (anxiety), which in turn explain different patterns of reciprocity; however, it is important to note that other theoretical frameworks exist. For example, hedonic contingency theory (Wegener & Petty, 1994) suggests that positive emotions lead individuals to attend to positive events in an effort to maintain and enhance their positive moods. Moreover, those in negative moods “do not need to scrutinize hedonic consequences to the same degree because there are many more activities that will maintain or improve their mood” (Hirt et

al., 2008, p. 216). Our current prediction—that individuals in North American settings, who are happier, escalate positively exchanges and not negative exchanges—aligns with predictions from hedonic contingency theory. However, our prediction that individuals in East Asian settings escalate negative exchanges and not positive exchanges because of higher anxiety deviates from this theory. Namely, hedonic contingency theory would predict that individuals in East Asian settings, because they are more anxious (a negative mood), would be less likely to escalate exchanges, regardless if they were framed in a positive versus negative manner.

In addition, our anxiety-related theorizing also differs from what the Negative State Relief (NSR) Model (Cialdini et al., 1981; Cialdini et al., 1973). In this model, negative moods (generally sadness or depression) increase positive behaviors such as helping, because doing so makes the helper feel better. Thus, this theory would predict that individuals in East Asian settings, who are more anxious, would de-escalate negative exchanges and escalate positive exchanges. In sum, we consider these alternative theories as we empirically test our model as they provide different predictions about how individuals in East Asian settings respond to negative vs. positive reciprocity.

### **Theoretical Contributions**

Our work will contribute to the extant literature on culture and social exchanges. First, by adopting insights from recent theorizing (Morris et al., 2015), we view culture as a critical factor that interacts with the social context of negative versus positive exchanges. In particular, our research helps explicate *how* and *why* people escalate versus maintain their levels of reciprocity because of cultural differences. This stands in contrast to past theoretical assumptions that cultures produces “a broad tendency to prefer certain states of affairs over others” (Hofstede, 1980, p. 19), and that consistent cross-national differences in reciprocity should emerge

regardless of the social context in which these decisions are made. While some past work suggests that individuals in East Asian settings are generally more punitive and less generous than individuals in North American settings (Wang & Leung, 2010), our theorizing suggests that people from different cultural settings may respond in similar manners under different social circumstances (i.e., the reciprocity patterns of people in North American settings (when exchange is framed negatively) and people in East Asian settings (when exchange is framed positively) remain constant and equivalent over time). Importantly, by theorizing and exploring regulatory focus and emotions as the underlying cultural mechanisms, our research enhances our understanding of how the social environment influences patterns of social exchange.

Second, this work is also geared towards contributing to the understanding of social exchange processes. Unlike the normative approach of past work that extrapolates one-shot interactions to generalized social behavior (Halevy et al., 2012), we examine behaviors over a longer temporal window. Doing so affords us a dynamic assessment of social exchange over time and sheds light onto the temporal implications for how social norms are activated and persist/escalate over time. Moreover, echoing the call for considering emotions in the social exchange process (Cropanzano et al., 2017; Gordon, 1981; Kemper, 1991; Scheff, 1983), we explore how emotions can inform actors' calculus of social exchange relationships. In doing so, our research goes beyond the traditional cool, economically-calculative process to reciprocity (Lawler & Thye, 1999) by providing an alternative lens to the view to social exchange decisions.

### **Overview of Studies**

We designed three complementary studies to investigate whether individuals in North American settings and in East Asian settings demonstrate different escalation patterns to negatively-framed and positively-framed actions, because of their differential regulatory focus

and emotions. In Study 1, we recruited participants from the U.S. and Singapore to examine the different escalation patterns using a modified repeated dictator game (i.e., the taking vs. giving game; Keysar et al., 2008). In order to test the robustness of our effects as well as the cultural mechanism we contend drives these effects, in Study 2, we employed participants from the U.S. and Hong Kong to measure their regulatory focus and associated emotions. Finally, to increase our confidence in the underlying mechanism, in Study 3, we manipulated regulatory focus within a single culture to establish causality.

*Sample size sensitivity analyses.* For our studies, we used a general heuristic of collecting a minimum of thirty data points per between-subject condition (Cohen, 1988; VanVoorhis & Morgan, 2007; dyads in Studies 1 and 2, individuals in Study 3). Because we collected four between-subject conditions, we aimed for at least 120 data points per study. In Study 1, because we had access to a greater number of participants than usual, we took advantage of this opportunity to enhance power.

We used the *ANOVA repeated measure, within-between interaction* function in G\*Power to perform sensitivity analyses for the studies (Faul et al., 2007). In Studies 1-3, we entered four ‘groups’ because we had four between-subjects conditions (Studies 1 and 2: Cultural setting × Exchange type; Study 3: Regulatory focus × Exchange type). In Studies 1 and 3, we entered four ‘measurements’ because the within-subjects factor included four rounds. In Study 2, we entered eight ‘measurements’ (eight rounds). Using the standard criteria (Wang et al., 2018;  $\alpha = .05$  two-tailed,  $\beta = .80$ ), the results showed that our sample sizes could detect the minimal effect sizes of  $f = .08$  for Study 1 ( $N = 232$  dyads, correlation among repeated measures = .63),  $f = .08$  in Study 2 ( $N = 141$  dyads, correlation among repeated measures = .63), and  $f = .09$  for Study 3 ( $N = 159$  individuals, correlation among repeated measures = .71).

## Study 1

### Method

Study 1 had a 2 (Cultural setting: American vs. Singaporean)  $\times$  2 (Exchange type: Give vs. Take)  $\times$  2 (Player: A vs. B)  $\times$  4 (Round: 1-4) mixed-design, with the last factor within-subjects to track the escalation of reciprocity.

### Participants and procedure

Two hundred and sixty students from a U.S. southwestern university (132 males, 123 females, and 5 did not report<sup>1</sup>; mean age = 21.07 years,  $SD = 2.72$ )<sup>2</sup> and 204 students from a Singaporean university (82 males, 120 females, and 2 did not report; mean age = 20.70 years,  $SD = 1.53$ ) completed the study. In both samples, participants earned extra credit and were compensated in money, based on their study responses. American participants were compensated in the U.S. dollar (USD) amount, and Singaporean participants were compensated in the Singapore dollar (SGD) amount. One USD approximated to about 1.30 SGD (at the time of the study). All instructions were given and written in English.

Upon arrival, participants were randomly assigned to be either Player A or Player B (who were seated in two different rooms). Player As and Player Bs were randomly paired and instructed to complete an interactive game over multiple rounds. Participants were also told that they would be compensated based on their final point allocations at the end of the study.

Dependent on their random assignment, each pair of players played either the giving or the taking game (Keysar et al., 2008). In the *giving* game, Player As were first allocated 100 points (equivalent to \$2.00) and decided how many points they would give to Player Bs. Then, the roles were reversed, such that Player Bs were allocated a new set of 100 points and decided how many points to give to Player As. In the *taking* game, Player Bs were allocated 100 points



and Player As decided how many points they would take from Player Bs' allocation. Player Bs then decided how many points to take from Player As' allocated 100 points. In both the taking and giving games, these two decisions constituted one round. Each pair of players completed four rounds, with eight individual decisions made in total.

Participants were not informed of the number of rounds to prevent any pre-planning to defect on the final round. After completing all the four rounds, participants completed a demographic questionnaire. Participants then received both the extra credit and the cash compensation based on their allocation decisions (from \$0 to \$16; \$4 per round) and were debriefed on the study.

### **Dependent measure**

*Allocation decisions.* We measured the amounts Player A and Player B gave (in the giving game) or took (in the taking game) in each round. As higher numbers in the taking game equate to participants removing more resources from the other participant, higher numbers reflected greater negative reciprocity. Similarly, as higher numbers in the giving game translates to participants giving more resources to the other side, higher numbers reflected greater positive reciprocity.

### **Results**

Table 1 outlines the descriptive statistics and correlations. As Player A and Player B came from the same cultural setting, we expected that Player A and Player B would have similar psychological experiences based on our theorizing and thus would exhibit similar escalation patterns. For example, we did not expect an American Player A to escalate their reciprocity in the giving game in a different manner than his or her partner (i.e., an American Player B). To test our assumption, we first conducted a Cultural setting  $\times$  Exchange type  $\times$  Player  $\times$  Round mixed-

method analysis of variance (ANOVA), with allocation decisions as the dependent variable. We entered Round (1-4) as the within-subjects factor and entered Cultural setting, Exchange type, and Player (A or B) as the between-subjects factors. A main effect for round emerged,  $F(3, 1368) = 17.45, p < .001$ . A main effect did not emerge for the Cultural setting,  $F(1, 456) = .002, p = .969$ . Moreover, neither a main effect for the Player factor,  $F(1, 456) = .43, p = .510$ , nor any interactions with the Player factor emerged (Round  $\times$  Player, Cultural setting  $\times$  Round  $\times$  Player, Cultural setting  $\times$  Exchange type  $\times$  Player, Cultural setting  $\times$  Exchange type  $\times$  Round  $\times$  Player), all  $F$ 's  $< .001$ , all  $p$ 's  $> .50$ . This suggests that the allocation decisions for Player A and Player B did not substantively differ.

Therefore, in line with past research (Humphrey et al., 2017; Keysar et al., 2008; Loyd et al., 2013), we used dyads as our unit of analyses for the subsequent analyses by calculating the average amount Player A and Player B gave (giving game) or took (taking game) in each round.<sup>3</sup> We further tested the validity of aggregation (all ICC(1)'s  $> .68$ , all  $r_{WG}$ 's  $> .83$ ): the ICC values were acceptable according to the conventionally-accepted values (Bliese, 2000; LeBreton & Senter, 2008).<sup>4</sup>

We then conducted a Cultural setting  $\times$  Exchange type  $\times$  Round mixed-method analysis of variance (ANOVA), with Round as the repeated measure and allocation decisions as the dependent variable. A significant Cultural setting  $\times$  Exchange type  $\times$  Round three-way interaction on allocation decisions emerged,  $F(3, 684) = 3.90, p = .009, \eta^2 = .02$ .

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 Insert Table 1 about here  
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In the *giving game*, American dyads were more generous over time,  $F(1, 79) = 33.12, p < .001, \eta^2 = .30$ , but Singaporean dyads' reciprocity remained stable over time,  $F(1, 50) = 2.33, p = .133, \eta^2 = .05$ . In contrast, in the *taking game*, Singaporean dyads became more punitive over

time,  $F(1, 50) = 11.91, p = .001, \eta^2 = .19$ , but American dyads' reciprocity remained stable over time,  $F(1, 49) = .00, p = .996, \eta^2 = .00$ . Taken together, these results suggest that Singaporean dyads escalated their negative exchanges more extensively than American dyads did; whereas American dyads escalated their positive exchanges more extensively than Singaporean dyads did (see Figure 2).

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## Discussion

Study 1 provided a clear pattern of results: individuals in North American settings escalated positive reciprocity whereas individuals in East Asian settings escalated negative reciprocity over time. Although Study 1 provides support for our hypotheses, it does not test the mechanisms driving these results. Thus, we designed Study 2 to test the role of regulatory focus and emotions in the escalation of reciprocity. Furthermore, we tested the cultural generalizability of our findings by comparing Americans with another East Asian sample—participants from Hong Kong.

## Study 2

Study 2 used similar giving and taking games to replicate Study 1's results and to test the underlying mechanisms behind the cultural differences in positive vs. negative reciprocity. We predicted that the type of exchange would moderate the relationship between cultural setting and the escalation of reciprocity via regulatory focus and emotions. In the giving game, we predicted that Americans escalate their generosity because Americans are more promotion focused and experience greater happiness than Hong Kongers experience. In contrast, in the taking game, we predicted that Hong Kongers escalate their punitive actions because Hong Kongers are more

prevention focused and experience greater anxiety than Americans experience. Thus, in our analysis, we tested a second-stage serial mediated moderation model to examine whether regulatory focus and emotions explains the cultural differences in escalation.

### **Participants and procedure**

A total of 282 students participated in the study. Among them, 154 students were from a U.S. southwestern university (80 men and 74 women; mean age = 21.52,  $SD = 2.77$ ) and the rest of the 128 students were from a Hong Kong university (36 men and 92 women; mean age = 20.63,  $SD = 2.30$ ).

As in Study 1, participants in both cultures followed exactly the same procedure and instructions—all instructions were given and written in English. Upon arrival, participants were randomly assigned to one of two rooms (Room A and Room B). Participants completed a 18-item Regulatory Focus Scale, consisting of promotion focus (9 items) and prevention focus (9 items) subscales (Lockwood et al., 2002) that asked them to indicate how well each statement described them ( $1 = \text{Not at all true of me}$  to  $9 = \text{Very true of me}$ ). The sample items are: “Overall, I am more oriented toward achieving success than preventing failure” (promotion-focus item;  $\alpha_{US} = .90$ ,  $\alpha_{HK} = .86$ ) and “I am more oriented toward preventing losses than I am toward achieving gains” (prevention-focus item;  $\alpha_{US} = .86$ ,  $\alpha_{HK} = .77$ ).

After completing the regulatory focus questions, each participant was randomly assigned as one of two players (Player A vs. Player B) in one of the two games (giving vs. taking game), and in each round, each player was allocated 100 points (equivalent to US\$1.00). Each pair of players played the game for eight rounds.

After participants finished the game, participants were asked to indicate on a 5-point Likert scale how much they felt certain emotions ( $1 = \text{Not at all}$  to  $5 = \text{Extremely}$ ). Four

questions assessed their feelings of happiness (Lee et al., 2000; e.g., “happy”;  $\alpha_{US} = .90$ ,  $\alpha_{HK} = .91$ ) and five items assessed their anxiety (“nervous”;  $\alpha_{US} = .91$ ,  $\alpha_{HK} = .91$ ).

Finally, participants completed the demographic questions and were debriefed about the study. Both Hong Kong and American participants were compensated for their game decisions; American participants also received an extra course credit.

### **Dependent measure**

*Allocation decisions.* As in Study 1, the amounts that Player A and Player B gave or took in each round were averaged to form a scale of allocation, with higher numbers reflecting either more positive (giving game) or negative (taking game) reciprocity.

### **Results**

Table 2 outlines the descriptive statistics and correlations for the variables. Table 3 outlines the means and standard deviations of promotion focus, prevention focus, happiness and anxiety by condition. As in Study 1, we first conducted a Cultural setting  $\times$  Exchange type  $\times$  Player  $\times$  Round mixed-method analysis of variance (ANOVA). We entered round (1 - 8) as the within-subjects factor and entered Cultural setting, Exchange type, and Player (A or B) as the between-subjects factors. A main effect emerged for round,  $F(7, 1918) = 4.66$ ,  $p < .001$ , but not for the Cultural setting,  $F(1, 274) = .341$ ,  $p = .066$ , or for player,  $F(1, 274) = .01$ ,  $p = .916$ . As in Study 1, no significant interactions with the Player factor emerged, all  $F$ 's  $< .70$ ,  $p$ 's  $> .40$ . We further tested the validity of aggregation and the results supported aggregating to the dyadic level (all ICC(1)'s  $> .80$ , all  $r_{WG}$ 's  $> .80$ ). The ICC values were acceptable according to the conventionally-accepted values (Bliese, 2000; LeBreton & Senter, 2008). Thus, as in Study 1, we used dyads as our unit of analysis by calculating the average amount Player A and Player B gave (giving game) or took (taking game) in each round. We dropped the Player factor and conducted

a three-way mixed ANOVA to understand the effects of cultural setting, exchange type, and round on dyad allocation decisions. A significant Cultural setting  $\times$  Exchange type  $\times$  Round three-way interaction emerged for allocation decisions,  $F(7, 959) = 3.57, p = .001, \eta^2 = .03$ .<sup>5</sup>

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 Insert Table 2 and Table 3 about here  
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In the taking game, Hong Kong dyads became marginally more punitive over time,  $F(1, 33) = 3.84, p = .059, \eta^2 = .10$ , but American dyads' allocations remained stable,  $F(1, 35) = .05, p = .829, \eta^2 = .001$ . In contrast, in the giving game, American dyads became more generous over time,  $F(1, 40) = 5.43, p = .025, \eta^2 = .12$ , but Hong Kong dyads' allocations remained stable,  $F(1, 29) = .66, p = .425, \eta^2 = .02$ . Thus, Study 2 replicated Study 1's results by demonstrating that Hong Kong dyads escalated negative behaviors more extensively than American dyads did whereas American dyads escalated positive behaviors more extensively than Hong Kong dyads did (see Figure 3).<sup>6</sup>

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 Insert Figure 3 about here  
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### **Moderated serial mediation growth model analyses.**

To test the underlying mechanisms of regulatory focus and emotions, we also tested whether the nature of exchange (i.e., giving vs. taking) would moderate the indirect effect of culture on escalation through regulatory focus and emotions. First, we hypothesized that American dyads would be more promotion focused than Hong Kong dyads and that their promotion focus would be associated with stronger happiness. In turn, happiness would help escalate positive reciprocity in the giving game, but would not escalate negative reciprocity in the taking game.

Second, we hypothesized that Hong Kong dyads would be more prevention focused than American dyads and that their prevention focus would be associated with stronger anxiety. In turn, anxiety would help escalate negative reciprocity in the taking game, but would not escalate positive reciprocity in the giving game.

To examine these predictions, we followed the procedure of Chan (1998) to combine lower-level measures into collective constructs and aggregate participants' regulatory focus and emotions to the dyadic level by calculating the mean of Player A and Player B (Humphrey et al., 2017; Loyd et al., 2013). We also tested the validity of aggregation (promotion focus: ICC(1) = .12,  $r_{WG}$  = .90; prevention focus: ICC(1) = .10,  $r_{WG}$  = .89; happiness: ICC(1) = .08,  $r_{WG}$  = .70; anxiety (ICC(1) = .15,  $r_{WG}$  = .71), and the results supported aggregating to the dyadic level (LeBreton & Center, 2008).

We then ran a two-factor latent growth model to estimate a latent intercept (i) and a latent slope (s), and followed the path analytic approach (Preacher et al., 2007; with 5,000 bootstrapped samples and 95% confidence intervals) to test the indirect effects of culture on the latent slope through regulatory focus and emotions in each game (taking vs. giving).

*Cultural differences in regulatory focus.* Americans dyads ( $M = 7.47$ ,  $SD = .77$ ) were more promotion focused than Hong Kong dyads ( $M = 6.95$ ,  $SD = .69$ ),  $t(139) = 4.22$ ,  $p < .001$ ,  $d = .72$ , 95% CI [.28, .77] and Hong Kong dyads ( $M = 5.86$ ,  $SD = .85$ ) were more prevention focus than American dyads ( $M = 5.44$ ,  $SD = 1.07$ ),  $t(139) = 2.56$ ,  $p = .012$ ,  $d = .43$ , 95% CI [-.75, -.09].

*Regulatory focus and emotions.* Promotion focus was positively associated with happiness ( $b = .23$ ,  $SE = .09$ ,  $p = .013$ ) and prevention focus was positively associated with anxiety ( $b = .10$ ,  $SE = .04$ ,  $p = .017$ ).

*Latent growth modeling (LGM).* Latent growth modeling enabled us to model mean-level changes in allocations across eight rounds as well as the differences in changes, while controlling for the effects of measurement error. We constructed a model with two growth factor components—the latent intercept and the latent slope. The latent intercept reflects the average of Round 1 allocation; the latent slope estimates a linear growth trajectory over eight rounds. The variance in the latent intercept reflects differences in the Round 1 allocation; the variance in the slope represents differences in mean-level changes over time. We constructed the model by defining the intercept factor as the Round 1 allocation and setting the loadings of allocations from Round 1 to Round 8 to 1 on the intercept factor and to 0 to 7 on the slope factor. Also, we correlated residual variables for the allocations over time because the error variances were homoscedastic over time for repeated latent variables (Lance et al., 2000).

To examine whether the type of exchange (taking vs. giving) moderated the indirect effect of culture on escalation (slope factor) through regulatory focus and emotions, we tested whether (a) a happiness  $\times$  exchange type interaction on escalation (slope factor) emerged; (b) promotion focus and happiness mediated the relationship between culture and escalation (slope factor) in giving game, but not in taking game; (c) an anxiety  $\times$  exchange type interaction on escalation (slope factor) emerged; and (d) prevention focus and anxiety mediated the relationship between culture and escalation (slope factor) in taking game but not in giving game. Figure 4 shows the two-factor latent growth model for allocations and the paths between studied variables (e.g., culture, regulatory focus, emotions, and exchange type). To test the underlying mechanisms of regulatory focus and emotions, we conducted a path analysis using Mplus and a maximum likelihood estimation.

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Insert Figure 4 about here



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*Promotion focus and happiness.* We found that a significant happiness  $\times$  exchange type effect on escalation (slope factor) ( $b = 2.52, SE = 1.12, p = .024$ ). We also found that the type of the exchange moderated the indirect effect of culture on the escalation (slope factor) via promotion focus and happiness. In the giving game, an indirect effect emerged for the serial mediation ( $b = -.15, SE = .13, 95\%CI [-.61, -.01]$ ), suggesting that the escalation of giving was greater for American dyads than Hong Kong dyads over the eight rounds because Americans were more promotion focused and experienced higher levels of happiness. In contrast, in the taking game, the indirect effect was not significant ( $b = .16, SE = .16, 95\%CI [-.03, .68]$ ).

*Prevention focus and anxiety.* Following the same procedures as above and using prevention focus and anxiety as the mediators, we found an anxiety  $\times$  exchange type interaction effect on escalation (slope factor) ( $b = -3.29, SE = 1.50, p = .028$ ). We also found that the exchange type moderated the indirect effect of culture on the escalation (slope factor) via prevention focus and anxiety. In the taking game, the indirect effect was positive and significant for the serial mediation ( $b = .12, SE = .09, 95\%CI [.02, .41]$ ), suggesting that the escalation of taking was greater for Hong Kong dyads than for American dyads over the eight rounds because Hong Kongers were more prevention focused and experienced higher levels of anxiety. In contrast, in the giving game, the indirect effect was not significant ( $b = -.01, SE = .05, 95\%CI [-.15, .06]$ ) (See Table 4 for detailed results).<sup>7</sup>

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 Insert Table 4 about here  
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## Discussion

Study 2 replicated the findings of Study 1: individuals in North American settings escalated positive exchange, but positive reciprocity remained stable for individuals in East

Asian settings. In contrast, however, individuals in East Asian settings escalated negative exchanges while negative reciprocity remained constant in North American settings. In addition, Study 2 showed that regulatory focus and emotions were the underlying mechanisms behind these findings.

### **Study 3**

The relationship between regulatory focus and the other measures in Study 2 were correlational, leaving the possibility that an unknown variable may account for the observed effects (Spencer et al., 2005). To establish regulatory focus as a causal mechanism, we followed the past research on cross-cultural studies by manipulating regulatory focus within a single culture in Study 3 to more robustly test the causal effect of regulatory focus (San Martin et al., 2019; Wang et al., 2011).

#### **Method**

Study 3 employed a 2 (Regulatory focus: Prevention vs. Promotion focus) by 2 (Exchange type: Give vs. Take) by 4 (Round: 1-4) mixed-design, with the last factor serving as a within-subjects factor tracking escalation of behaviors. Participants ostensibly interacted with another participants in the game, but in reality, the other ‘participant’ was pre-programmed to make an offer of 50 points (out of 100 points) in the first round. This manipulation ensured that the first move was consistent across conditions, allowing us to measure how our manipulations influenced patterns of reciprocity over time. Moreover, we deliberately ensured the first move was a 50-50 split (Pillutla & Murnighan, 1996), an objectively ‘fair’ split. Even ensuring this fair split, we predicted that regulatory focus and exchange type would shape the interpretations of the first move, and that promotion-manipulated individuals would escalate reciprocity in giving

game, but not in taking game. In contrast, prevention-manipulated individuals would escalate reciprocity in taking game, but not in giving game.

### **Participants and procedure**

One hundred and fifty-nine U.S. participants (71 males and 88 females; mean age = 34.00 years,  $SD = 10.51$ ) were recruited from Amazon Mechanical Turk (Mturk). Participants were randomly assigned to a word fragment task (Gilbert & Hixon, 1991; Whitson et al., 2019) to prime regulatory focus (prevention vs. promotion focus). In each condition, participants were shown four words with one or two missing letters and asked to write in the missing letters to form the word. For example, the fragment “gro\_th” needed a “w” to form the word “growth.” The four words in the promotion focus prime were growth, active, eager, and accomplish, while those in the prevention focus prime were calm, vigilant, safe, and secure.

Upon completion, participants were randomly assigned to either the giving or the taking game. All the participants were told that they were assigned as Player B to play against another participant (Player A) who was networked through the internet. As noted, in actuality, Player A’s actions were computer programmed.

In the *giving* game, the participant (Player B) and the other player (Player A) were each allocated a set of 100 points, and Player A first decided how many points to give to Player B. Player A was pre-programmed to make an offer of 50 points in the first round. The participant then chose how many points out of their 100-point allocation to give to Player A. These two moves constituted Round 1.

In the subsequent three rounds, Player A’s move mirrored the participant’s move in the previous round. For example, if the participant gave Player A 60 points in the first round, Player

A gave the same amount (60 points) back to the participant in the second round. Participants continued to make giving decisions until they completed four rounds.

In the *taking* game, the paradigm remained the same as the giving game except that decisions were described as taking instead of giving. The instructions did not outline the number of rounds that would be played. Participants then completed the demographic questionnaire and were debriefed.

### Dependent Measure

*Allocation decisions.* For each round, we recorded the amount of points participants gave in the giving game or took in the taking game to Player A from 0 to 100, with higher numbers reflecting either more generous (giving game) or punitive (taking game) decisions.

### Results

Table 5 includes descriptive statistics and correlations for the variables. A Regulatory focus  $\times$  Exchange type  $\times$  Round mixed-method analysis of variance (ANOVA), with Round serving as a within-subjects factor demonstrated a significant Regulatory focus  $\times$  Exchange type  $\times$  Round three-way interaction on allocation decisions,  $F(3, 465) = 2.93, p = .003, \eta^2 = .02$ .

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 Insert Table 5 about here  
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In the taking game, exchanges in the prevention focus condition became more punitive over time,  $F(1, 41) = 7.20, p = .010, \eta^2 = .15$ , but the exchanges in the promotion focus condition remained stable over time,  $F(1, 38) = .07, p = .793, \eta^2 = .002$ . In contrast, in the giving game, exchanges in promotion focus condition were more generous over time,  $F(1, 39) = 5.75, p = .021, \eta^2 = .13$ , but the exchanges in prevention focus condition remained stable over time,  $F(1, 37) = .34, p = .562, \eta^2 = .01$  (see Figure 5).

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Insert Figure 5 about here  
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Overall, Study 3 supported our argument that cultural differences in regulatory focus may explain patterns of reciprocity by showing that even state-level regulatory focus manipulations shaped the escalation of reciprocity. In positive exchanges, individuals in a promotion-oriented state escalated reciprocity but this escalation did not occur for individuals in a prevention-oriented state. In contrast, in negative exchanges, individuals in a prevention-oriented state escalated reciprocity but this escalation did not occur for individuals in a promotion-oriented state.

### **General Discussion**

Reciprocity is a basic governing mechanism for sustained social relationships (Fehr & Gächter, 2000). Our research investigated how people escalated different types of reciprocity in different cultures. Study 1 demonstrated that individuals in North American settings escalated positive and not negative exchanges, whereas individuals in East Asian settings escalated negative and not positive exchanges. Study 2 conceptually replicated these findings and showed that regulatory focus and emotions were the driving mechanisms behind these cultural differences. Study 3 manipulated regulatory focus and showed that individuals in a promotion-oriented state escalated reciprocity when exchanges were positive but not negative and individuals in a prevention-oriented state escalated when exchanges were negative and not positive.

### **Theoretical Implications**

Our research contributes to the social exchange theory by exploring how culture influences reciprocity over time. Escalation-based theories suggest that reciprocity may intensify over time, but equity-based theories propose that people reciprocate behaviors in-kind. Our work

provides evidence for *both* theoretical perspectives, with the cultural background of reciprocators and the type of the exchange determining patterns of reciprocity. Moreover, our research further demonstrates the meaningful impact of subjective components in individual's calculus of reciprocity in social exchange. In particular, regulatory focus and emotions can color people's cultural perceptions of social exchange and in turn influence their behaviors. Importantly, cultural differences in regulatory focus and their specific emotional signatures (i.e., promotion-focus engenders happiness and prevention focus engenders anxiety) drive patterns of reciprocity. This work begins to answer recent calls to bring emotions into foreground when studying social exchange (e.g., Cropanzano et al., 2017; Lawler & Thye, 1999).

By examining a series of exchanges, our study provides a more dynamic and realistic lens that allows for a better understanding how reciprocity works. While theories of social exchange often assume continuous interactions (Cropanzano et al., 2017; Greco et al., 2019), empirical research almost exclusively employs one-shot decisions (e.g., Aryee et al., 2002; Bishop & Scott, 2000; Cortina & Magley, 2003; Eisenberger et al., 2001; Glomb & Liao, 2003), providing a limited understanding of how people reciprocate over time. By focusing on the dynamic escalation of reciprocity rather than examining one-shot interactions (Halevy et al., 2012), our research provides insights into how and why cultural orientations and societal norms are formed and become reified over time.

***Alternative Theoretical Pathways.*** We tested our model based on the alternate theories described in the introduction. Hedonic contingency theory suggests that individuals in East Asians settings, because they are more anxious, would not be influenced by whether the exchanges were framed in a positive versus negative manner. Yet we demonstrated that individuals in East Asian settings, because they were more anxious, escalated negatively-framed

exchanges, but not positively-framed exchanges. Similarly, our anxiety-related findings were not consistent with the predictions from the Negative State Relief (NSR) Model (Cialdini et al., 1973; 1981), which suggest that negative moods would increase positive behaviors such as helping because doing so makes the helper feel better. If this were true, anxiety should have increased giving, which we did not observe in our studies (as shown in the Table 2 correlation table, there is not a positive correlation between anxiety and allocation amounts).

One reason for these different results is that previous empirical work on both the hedonic contingency (Wegener & Petty, 1994) and NSR (Bless et al., 1992; Mitchell, 2000; Tiedens & Linton, 2001) theories have focused on sadness, rather than the negative emotion we examined—namely, anxiety. We did not measure sadness because it is associated with withdrawal behavior (Dawson et al., 1992; Harmon-Jones et al., 2009) and is not an emotion associated with prevention focus (which is essential to our cultural theorizing). Nonetheless, it is interesting to consider how different types of negative emotions may be related to decisions to escalate reciprocity. Thus, future work might examine sadness versus anxiety as precursors to the escalation (or de-escalation) of reciprocity.

### **Future Directions and Limitations**

Interestingly, in Study 2, prevention focus was more strongly related to happiness (negatively) than to anxiety (see Table 2). While past work provides support for the relationship between prevention focus and both happiness (negative) and anxiety (positive), some authors have suggested that prevention focus has a stronger relationship with anxiety than with happiness (Faddegon et al., 2008; Shah & Higgins, 2001). For example, prevention-focused people become more agitated and anxious after experiencing failure (Higgins et al., 1997). On the other hand, there is also evidence that prevention-focused individuals may be less happy because their

vigilance may cause them to “forego many momentary pleasures for the sake of achieving higher order long-term goals” (Cheung et al., 2014, p. 2). Past work suggests that prevention focus may be more related to anxiety than to happiness (Faddegon et al., 2008; Shah & Higgins, 2001). For example, prevention-focused people become more agitated and anxious after experiencing failure (Higgins et al., 1997). Future research might investigate this possibility by more deeply examining the nuances of emotions.

In the current studies, we focused on how individuals from the same culture made sequential economic decisions. However, not all interpersonal interactions occur within the same culture (Henderson et al., 2018; Molinsky, 2007; Ott & Michailova, 2018). Thus, future work might examine reciprocal escalation patterns when individuals come from different cultures. Levitt (2015), for example, outline how prejudice and ethnocentrism can challenge international team dynamics. Negatively-framed exchanges may escalate more quickly when the interactions are cross-cultural because of these underlying prejudices. Future studies might further investigate reciprocity in cross-cultural interactions and examine how to improve cross-cultural social interactions by reducing prejudice and ethnocentrism.

Future work can also explore how repeated interactions within cultures may strengthen norms and social perceptions. The social radar account posited by Morris et al. (2015) suggests that behaving in line with injunctive norms (i.e., perceptions of behaviors that evoke social approval or disapproval) increases social approval and signals to the actor that their positions are validated (Belk et al., 1982; Goffman, 1959; Strauss, 1977). In our case, the escalation of the type of reciprocity that fits one’s injunctive norms elucidates the process of cultural transmission and change and suggests this may be at least one part of the learning process from which cultural norms may be derived. For example, our findings that culture and the type of exchange interact



to trigger escalation may help explain why individuals in East Asian settings are generally more punitive and less rewarding than individuals in North American settings in one-shot interactions (Leung et al., 2011; Singh et al., 2011).

Moreover, the escalation of negative actions (and the *lack* of escalation of positive actions) by individuals who are more prevention focused may reinforce their vigilance in certain social situations. In contrast, the escalation of positive actions (and the *lack* of escalation of negative actions) by individuals who are more promotion-focused may reinforce perspective that people are supportive and dependable, further encouraging the pursuit of positive relationships. Future work can more deeply examine how repeated social exchanges may shape cultural norms.

Our work also provides a potential opportunity to diminish, and even potentially reverse, cycles of harmful retribution. Previous research has discussed how negative forms of reciprocity can be harmful to those within and outside of the social exchange (e.g., Harris et al., 2007; Mitchell & Ambrose, 2007). For instance, negative reciprocity decreases organizational commitment, thereby leading to increased turnover (Porter et al., 1974), decreased motivation (Farrell & Rusbult, 1981), reduced perceived organizational support (Settoon et al., 1996) and fewer organizational citizenship behaviors (Williams & Anderson, 1991). Moreover, retaliation can result in spiraling acts of vengeance, a precursor to violence in societies, gangs, and in the extreme trigger geopolitical conflict (Davie, 1929; Nisbett & Cohen, 1996; Otterbein, 1970; Tumey-High, 1971). Study 3's findings suggest that an intervention may be possible—by engendering a promotion-orientation among key decision-makers, holds to promise to curtail negative escalation spirals.

However, negative reciprocity is not always detrimental, as it may help prevent opportunistic behaviors, sustain social norms (Fehr & Gächter, 1998), and increase

cooperation in groups (Rockenbach & Milinski, 2006). For instance, harsh sanctioning increases coordination between members, which helps protect members during times of threat (Gelfand et al., 2011). Future research may want to consider the conditions under which the escalation of negative actions may result in positive versus destructive consequences.

### **Conclusion**

Although reciprocity is a universal norm in social relationships (Fehr & Gächter, 2000), people display different patterns of reciprocity in different cultures (Buchan et al., 2002; Cosmides & Tooby, 2005). Our research provides a nuanced understanding of social exchanges by examining how and why individuals in East Asian settings and North American settings reciprocate negative and positive actions differently. Classic adages and sayings, such as ‘an eye for an eye’ and ‘if you cooperate with others, others will cooperate with you’, suggest that people reciprocate in kind. Our research supports these classic perspectives, but illustrate when and why these perspectives may be limited. In sum, our work provides an initial step toward a more comprehensive understanding of how cultural systems shape reciprocity.

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<sup>1</sup>In Studies 1 and 2, the East Asian samples had a higher proportion of women than did the North American samples. Therefore, we controlled for the gender composition of the dyads in all three studies (0 = mixed dyad, 1 = male dyad, 2 = female dyad). Our results remained significant, suggesting that the gender composition of dyads did not influence our effects.

<sup>2</sup>The ethnicities of participants within each cultural setting included in Table 6. In addition, as a robustness check, we dropped those of East Asian descent from our North American sample and those of North American descent from our East Asian sample in Studies 1 and 2, and our results remained significant. We report these analyses in the supplementary materials.

<sup>3</sup>There are potential limitations of averaging scores. First, averaging two participants' scores eliminates the ability to take into account variability in responses of the two participants. For example, a scenario in which Player A allocates 10 points and Player B allocates 90 points in one round is very different from one in which Player A allocates 50 points and Player B allocates 50 points, although the average score for both scenarios is 50 points. However, we theoretically do not expect these players from the same culture and exchange type condition to differ in their allocation decisions. Consistent with our theoretical predictions, we did not find the main effect of Player in both Study 1 and Study 2, indicating that Player A and Player B did not significantly differ in their allocation patterns. The second limitation of averaging scores within dyads is the power of the hypotheses tests (Krull & MacKinnon, 2001). To eliminate this concern, we ran a sensitivity analysis, which suggests that we have sufficient power to detect a small effect size.

<sup>4</sup>Repeated Measures-Actor-Partner Interdependence Model (Cook & Kenny, 2005; Perry et al., 2017) is a good approach to examine how Player A's actions affect Player B's actions. However, one of the most important assumptions of Repeated Measures-Actor-Partner Interdependence Model is that dyad members are distinguishable (Kenny et al., 2006; Perry et al., 2017). Theoretically, Player A and Player B are indistinguishable as Player A and Player B come from the same cultural setting and engage in the same type of game. Therefore, we designed our study to randomly assign participants into these indistinguishable dyads. Empirically, we did not find any main or interaction effects of the Player factor on the allocation decisions, which suggests that there was no difference between Player A and Player B in their allocation decisions. Taken together, we conclude that dyad members are indistinguishable, and therefore, we did not use the Repeated Measures-Actor-Partner Interdependence Model to analyze our results.

<sup>5</sup>Based on the allocation patterns in the first round, it is possible that Hong Kong participants escalated their taking because they took more than Americans did in the first round, and that Americans escalated their giving because they gave more than Hong Kong participants in the first round. We did several analyses to rule out the possibility that the initial move motivates escalation. We report these results in the supplementary materials.

<sup>6</sup>Based on the escalation patterns in Figure 3, it is possible that American participants gave and Hong Kong participants took over the eight rounds in a curvilinear pattern. Indeed, Americans gave over the eight rounds in a curvilinear pattern ( $F(1, 40) = 18.07, p < .001, \eta^2 = .31$ ) and Hong Kong participants took over the eight rounds in a similar curvilinear pattern ( $F(1, 33) = 7.04, p = .01, \eta^2 = .18$ ). We discuss these findings in more detail in the supplemental materials.

<sup>7</sup>Because emotions were measured after the games, an alternative explanation remains. Specifically, the experience of the game could have shaped the participant's pattern of emotions. However, statistically we did not find support for this alternative moderated mediation. In addition, we ran alternative models that support the dispositional nature of the emotions. We report these results in the supplementary materials.

Table 1

*Descriptive statistics and variable inter-correlations, Study 1*

Variables	Mean	SD	1	2	3	4	5
1. Cultural setting	-	-	-				
2. Exchange type	-	-	-.12	-			
3. Round 1 Allocation	51.52	26.73	-.04	-.03	-		
4. Round 2 Allocation	56.26	31.51	.01	-.01	.69**	-	
5. Round 3 Allocation	58.33	34.18	-.002	-.004	.58**	.72**	-
6. Round 4 Allocation	61.32	34.41	-.04	.09	.50**	.61**	.70**

*Notes.* N=232 dyads.

Cultural setting (0 = U.S Southwest.; 1 = Singapore); Exchange type (0 = Taking; 1= Giving).

Allocation for each round is the points exchanged within a dyad for each round, averaged.

\*Correlation is significant at  $p \leq .05$ ;

\*\*Correlation is significant at  $p \leq .01$ .

Table 2

*Descriptive statistics and variable inter-correlations, Study 2*

Variables	Mean	SD	1	2	3	4	5	6	7	8	9	10	11	12	13
1. Cultural setting	-	-	-												
2. Exchange type	-	-	-.06	-											
3. Round 1 Allocation	50.76	29.78	-.07	.03	-										
4. Round 2 Allocation	52.62	32.85	-.09	.02	.73**	-									
5. Round 3 Allocation	55.58	37.47	-.14	.002	.55**	.69**	-								
6. Round 4 Allocation	59.34	37.58	-.14	-.02	.54**	.58**	.77**	-							
7. Round 5 Allocation	59.51	39.40	-.06	-.02	.42**	.52**	.70**	.74**	-						
8. Round 6 Allocation	58.82	40.20	-.04	-.03	.40**	.53**	.63**	.66**	.80**	-					
9. Round 7 Allocation	58.25	40.69	-.03	-.01	.35**	.52**	.58**	.63**	.75**	.84**	-				
10. Round 8 Allocation	55.89	40.43	-.12	-.06	.39**	.50**	.61**	.70**	.76**	.83**	.81**	-			
11. Promotion focus	7.23	0.78	-.34**	-.01	.20*	.16	.12	.12	.13	.04	.03	.06	-		
12. Prevention focus	5.63	1.00	.21*	.06	-.16	-.09	-.22**	-.21*	-.22*	-.19*	-.22*	-.24**	.01	-	
13. Happiness	2.59	0.79	-.32**	.03	.25**	.20*	.28**	.23**	.24**	.25**	.20*	.26**	.22**	-.32**	-
14. Anxiety	1.53	0.56	.31**	-.01	-.08	.02	-.09	-.15	-.02	.004	-.02	.01	-.07	.17*	-.11

Notes.  $N = 141$  dyads.

Cultural setting (0 = U.S. Southwest; 1 = Hong Kong); Exchange type (0 = Taking; 1 = Giving). Allocation, promotion focus, prevention focus, happiness, and anxiety are all aggregated to the dyadic level.

\*Correlation is significant at  $p \leq .05$

\*\*Correlation is significant at  $p \leq .01$



Table 3

*Means (standard deviations in parentheses) of promotion focus, prevention focus, happiness and anxiety by condition, Study 2*

	Giving		Taking		Giving		Taking	
	Promotion focus	Prevention focus	Promotion focus	Prevention focus	Happiness	Anxiety	Happiness	Anxiety
U.S.	7.41 (.79)	5.38 (1.11)	7.53 (.75)	5.51 (1.04)	2.87 (.82)	1.38 (.55)	2.76 (.81)	1.36 (.37)
HK	6.97 (.59)	6.13 (.67)	6.92 (.78)	5.63 (.93)	2.26 (.79)	1.73 (.61)	2.35 (.56)	1.72 (.62)

*Notes.* N=141 dyads.

Table 4

*Study 2: Path Analysis Results for Two-Factor Latent Growth Model for Allocations*

	<i>b</i>	<i>SE</i>	<i>p</i>	<i>R</i> <sup>2</sup>
<b>Outcome variable: Promotion focus</b>				
Constant	7.47	.09	<.001	.11
Cultural setting	-.53	.12	<.001	
<b>Outcome variable: Prevention focus</b>				
Constant	5.44	.12	<.001	.05
Cultural setting	.42	.16	.008	
<b>Outcome variable: Happiness</b>				
Constant	2.38	.87	.006	.15
Promotion focus	.23	.09	.013	
Prevention focus	-.26	.07	<.001	
<b>Outcome variable: Anxiety</b>				
Constant	1.37	.48	.004	.03
Prevention focus	.10	.04	.017	
Promotion focus	-.05	.06	.343	
<b>Outcome variable: Escalation (slope factor)</b>				
Constant	6.84	6.25	.274	.10
Cultural setting	-.95	1.07	.374	
Exchange type	-2.23	3.87	.564	
Promotion focus	-.71	.65	.274	
Happiness	-1.31	1.10	.234	
Happiness × Exchange type	2.52	1.12	.024	
Prevention focus	-.27	.56	.630	
Anxiety	2.94	1.19	.014	
Anxiety × Exchange type	-3.29	1.50	.028	
<b>Conditional indirect effects via promotion focus and happiness</b>				
Taking	.16	.16		95% CI [-.03, .68]
Giving	-.15	.13		95% CI [-.61, -.01]
<b>Conditional indirect effects via prevention focus and anxiety</b>				
Taking	.12	.09		95% CI [.02, .41]
Giving	-.01	.05		95% CI [-.15, .06]

*Notes.* *N* = 141 dyads; *SE* = standard error; *CI* = confidence interval. Bootstrap sample size = 5,000. Cultural setting (0 = U.S. Southwest; 1 = Hong Kong); Exchange type (0 = Taking; 1 = Giving). Allocation, promotion focus, prevention focus, happiness, and anxiety are all aggregated to the dyadic level.

Table 5

*Descriptive statistics and variable inter-correlations, Study 3*

Variables	Mean	SD	1	2	3	4	5	6
1. Regulatory focus	-	-	-					
2. Exchange type	-	-	.03	-				
3. Round 1	52.28	20.33	.01	-.33**	-			
4. Round 2	53.93	23.57	-.09	-.34**	.83**	-		
5. Round 3	55.77	24.98	-.03	-.34**	.65**	.79**	-	
6. Round 4	56.78	26.38	-.10	-.27**	.52**	.66**	.79**	-

*Notes.*  $N = 159$  individuals.

Regulatory focus (0 = Prevention focus; 1 = Promotion focus); Exchange type (0 = Taking; 1 = Giving).

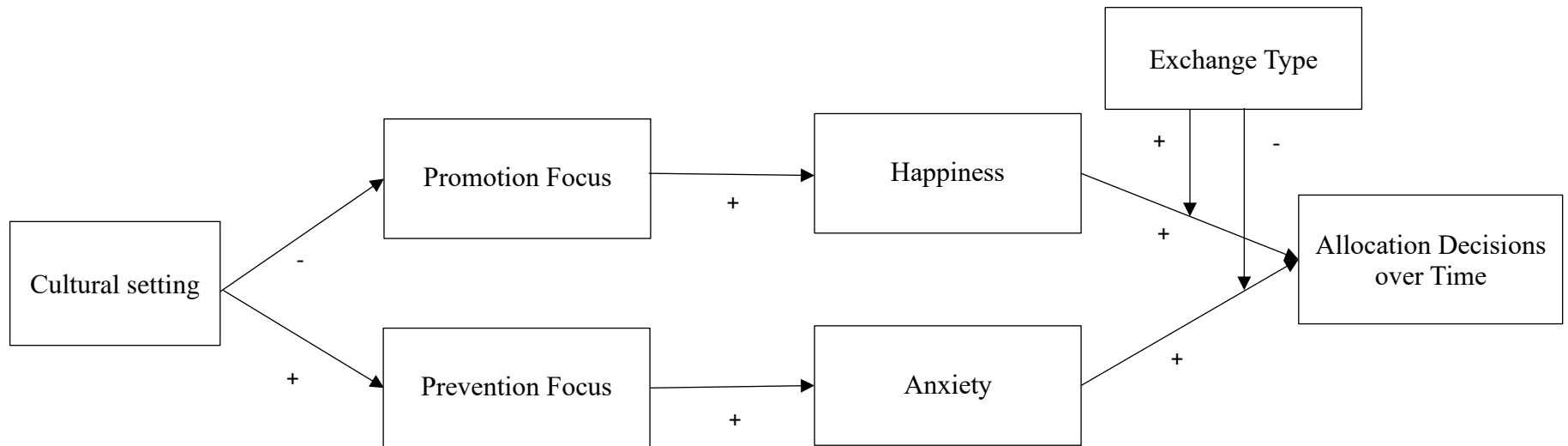
\*Correlation is significant at  $p \leq .05$ ;

\*\*Correlation is significant at  $p \leq .01$ .

Table 6  
*Ethnicity information for Studies 1 – 3*

Study 1		Study 2		Study 3
<b>U.S.</b>	<b>Singapore</b>	<b>U.S.</b>	<b>Hong Kong</b>	<b>U.S.</b>
Caucasian: 158	Chinese: 173	Caucasian: 100	Chinese: 120	Caucasian: 117
African American: 23	Indian: 11	African American: 12	Indian: 4	African American: 16
Hispanic: 18	Malaysian: 8	Hispanic: 12	Indonesian: 1	Asian: 12
Chinese: 13	Vietnamese: 3	Native American: 8	Caucasian: 1	Hispanic: 7
Native American: 11	Filipino: 2	Chinese: 5	Other Ethnicity: 2	Native American: 2
Vietnamese: 3	Other Asian: 4	Korean: 4		Other Ethnicity: 5
Indian: 3	Did not report: 3	Filipino: 2		
Korean: 3		Vietnamese: 2		
Filipino: 1		Indian: 1		
Other Asian: 3		Japanese: 1		
Other Ethnicity: 7		Other Asian: 6		
Did not report: 17		Other Ethnicity: 1		
<b>Total: 260</b>	<b>Total: 204</b>	<b>Total: 154</b>	<b>Total: 128</b>	<b>Total: 159</b>

*Figure 1.* Theoretical model positing that individuals in North American settings (i.e., Americans) escalate positive exchanges because they are more promotion focused and experience more happiness, whereas individuals in East Asian settings (i.e., Singaporeans and those from Hong Kong) escalate negative exchanges because they are more prevention focused and experience more anxiety.



*Note.* Cultural setting (0 = North American settings; 1 = East Asian settings); Exchange type (0 = Taking; 1 = Giving).

Figure 2. Study 1 allocation decisions as a function of cultural setting, exchange type and round.

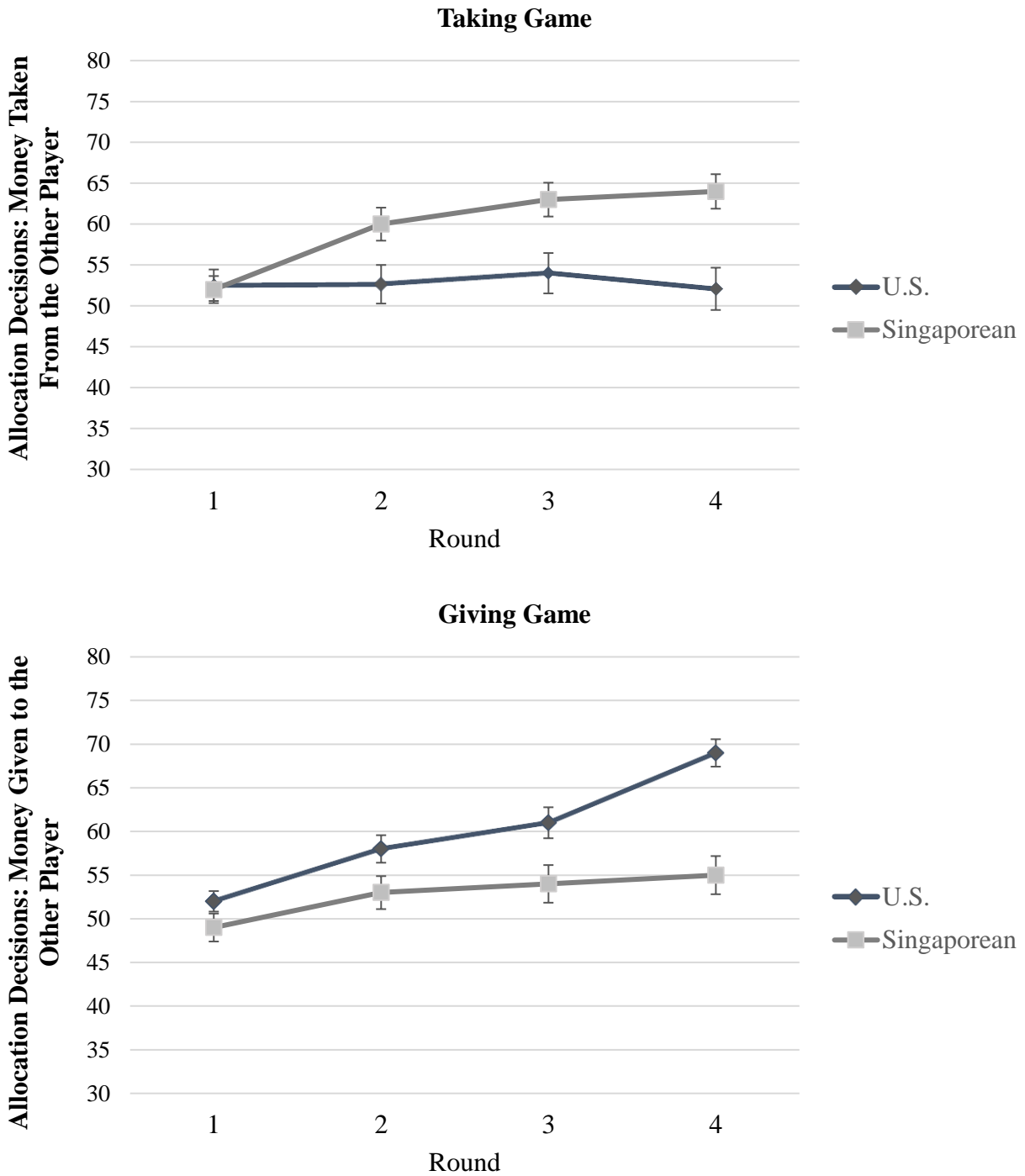


Figure 3. Study 2 allocation decisions as a function of the cultural setting, exchange type, and round.

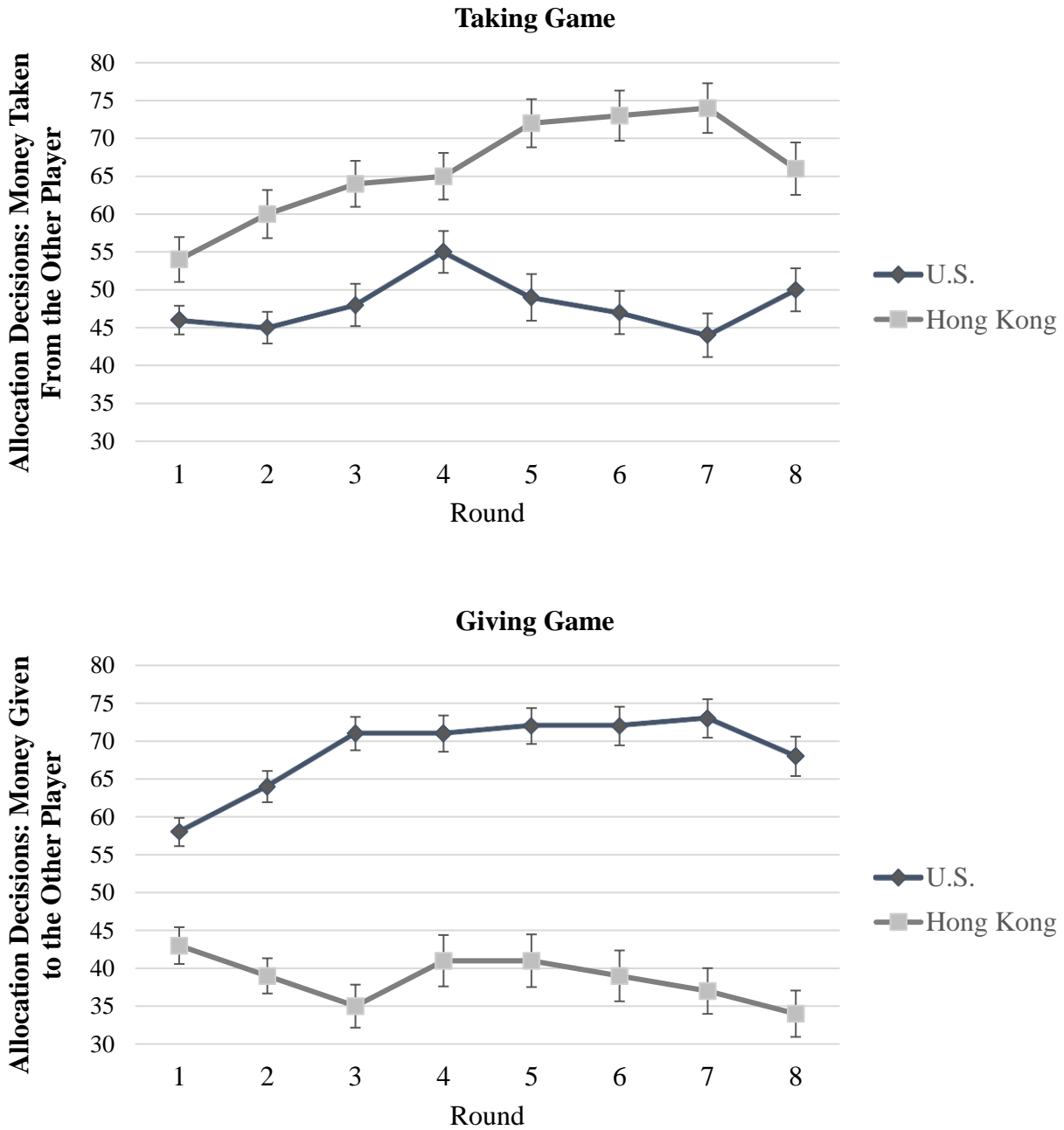
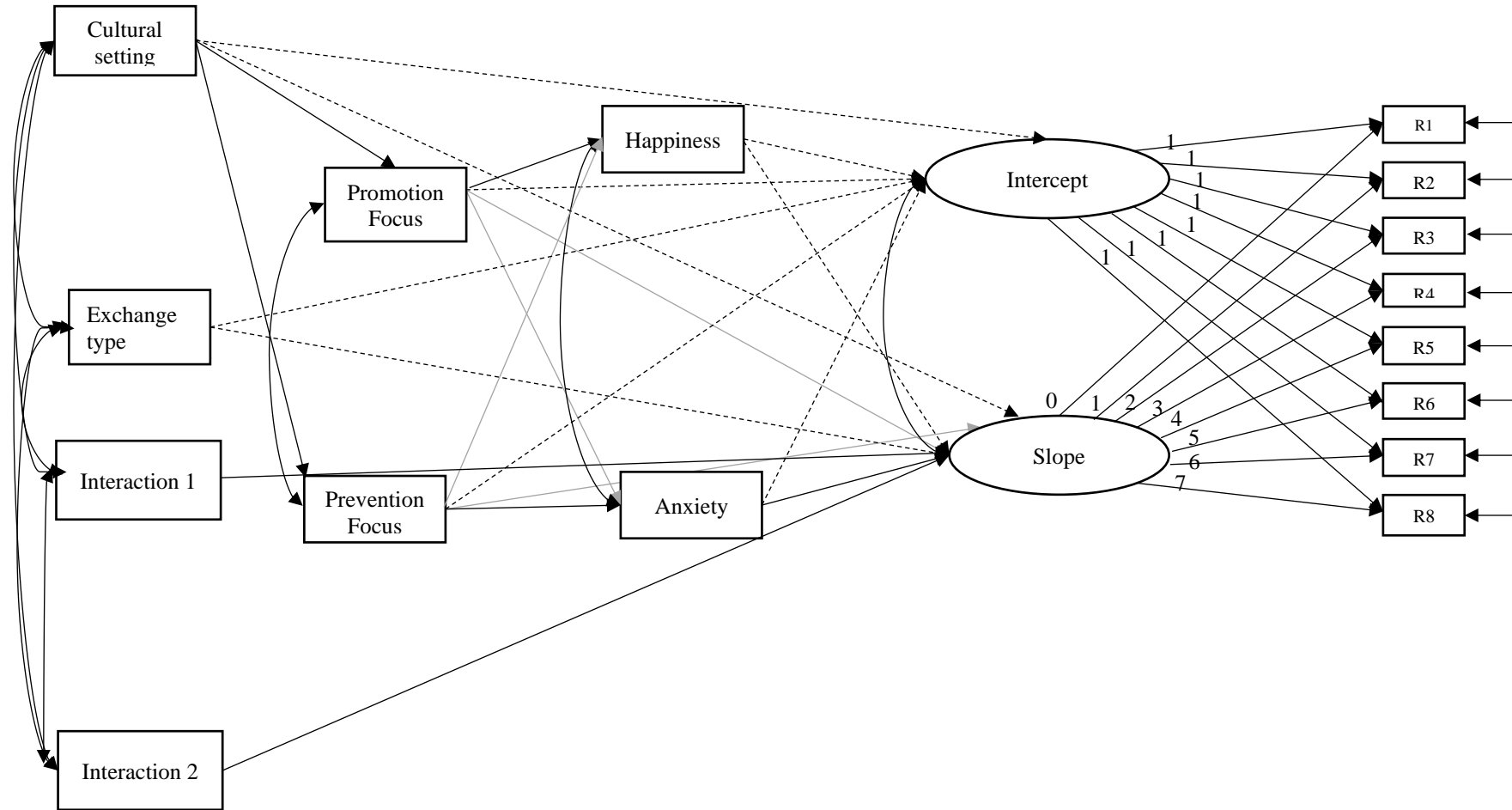


Figure 4. Study 2 path diagram of a two-factor latent growth model for allocation decisions.



Note. Cultural setting (0 = North American settings; 1 = East Asian settings); Exchange type (0 = Taking; 1 = Giving). Interaction 1 = Exchange type × Happiness; Interaction 2 = Exchange type × Anxiety. R1-R8 is the allocation for each round. Covariance between same-item residuals were omitted for clarity. Control variables and paths in gray. Hypothesized variables and paths in black, non-significant paths noted with a dashed line.



Figure 5. Study 3 allocation decisions as a function of regulatory focus, exchange type, and round.

