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Understanding the trust deficit in China: Mapping positive experience and trust in strangers

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ABSTRACT

The observation that in China people generally do not trust strangers motivated us to study this phenomenon. We used the literature of guanxi to define strangers, and we drew on intergroup contact theory to hypothesize that positive experiences with outgroup, but not with ingroup members will increase trust in strangers. In three experiments we found that perceiving support from (Study 1), receiving help from (Study 2), and being trusted by (Study 3) outgroup members led to higher trust in strangers. Indirect reciprocity mediated this relationship, suggesting that people generalize experiences with one outgroup member to other social actors, and in turn, increase their trust in strangers. Study 4 showed that intrapersonal trust increased after a positive outgroup experience. Study 5 replicated this finding using secondary field data. This research contributes to the trust literature by showing how specific and eventful experiences increase trust in strangers.

1. Introduction

China's remarkable economic growth has attracted considerable scholarly interest in Chinese firms and entrepreneurs, but less effort has been made to understand how social interactions play a role in Chinese socioeconomic development. Research suggests that trust acts as a key facilitator of economic growth (Knack & Keefer, 1997), civil engagement (Uslaner & Brown, 2005), organizational dynamics (Dirks, 1999), team cooperation (Schaubroeck, Lam, & Peng, 2011), and interpersonal relationships (De Cremer & Tyler, 2007). Unfortunately, Chinese people tend to have very low trust in strangers. Fukuyama (1995) classified China as a low-trust society: "the pervasive distrust of strangers ... existed in Chinese society well before the postwar industrialization" (p. 65), "there is a relatively low degree of trust in Chinese society the moment one steps outside the family circle" (p. 95). A recent, large-scale social survey reported that less than 30 percent of Chinese are willing to trust strangers (Wang & Yang, 2013). Because the fast-paced global marketplace is likely to create an increasing number of international interactions between Chinese and people they classify as strangers, this lack of trust may be a major obstacle to China's continuing international economic development (Hardin, 2001). This research proposes and tests ways to address the trust deficit in strangers in China.

Who are strangers in Chinese society? We answer this question by referring to the emic Chinese construct guanxi. Guanxi is generally conceptualized as an informal personal relationship between two individuals who are linked by social norms that govern the exchange of favors, mutual commitment, loyalty, and obligation (Chen & Chen, 2004; Hwang, 1987). Chinese people commonly use guanxi to categorize others into three types of relationships: family, familiar, and stranger (Chen, Chen, & Huang, 2013; Yang, 1993). Strangers are fundamentally different from family and familiars because Chinese people have relationships with families and familiars, ranging from intimate to superficial, but they do not have relationships with strangers. In this sense, strangers are people with whom one does not perceive any relationship in a given situation. Unlike Westerners who usually employ abstract categories (e.g., gender, race, generation) to categorize others, Chinese use the personalized relationships and common affiliations that underlie guanxi to categorize people into family, familiar, and stranger groups.

Trust is a psychological state involving confident positive expectations about the benevolence of others (De Jong & Elfring, 2010; McAllister, 1995). Trust in strangers refers to a focal person's

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overall expectation of the benevolence of others with whom the focal person has no guanxi relationship. As there are many types of trust, it is important to note that our conceptualization of trust in strangers is based on interpersonal rather than institutional trust. Interpersonal trust refers to trust in other individuals; it is the assumption that other individuals will be benevolent. In contrast, institutional trust refers to trust in organizations and systems (e.g., governments, courts, school systems). Although conceptually distinct (e.g., Lewicki & Bunker, 1995; Rao, Pearce, & Xin, 2005; Zucker, 1986), these two types of trust may interact such that confidence in institutions may enhance perceived security in the society and spill over into interpersonal trust (Steinhardt, 2012). Our focus trust in strangers, however, is grounded in the conceptualization of interpersonal, not institutional trust.

Our conceptualization of trust in strangers is also closer to the definition of generalized trust than that of particularistic trust. Particularistic trust refers to trust in a specific social actor based on information about that actor's background, reputation, or goodwill. For example, particularistic trust could be category-based, trusting people according to their membership in a social category (Brewer, 1981). In contrast, generalized trust refers to a belief in the overall benevolence of human nature (e.g., Mewes, 2014; Stolle, 2002). Generalized trust, by definition, naturally extends to strangers (Holm & Danielson, 2005), while particularistic trust does not.

This research investigates reasons for and proposes a possible solution to Chinese people's trust deficit in strangers. By proposing that people's trust in strangers can be increased, we take a different perspective from that trust in strangers is a fixed individual trait (e.g., Rotter, 1967). Rather we take the perspective that trust in strangers is variable depending on people's experiences and situations they find themselves in (e.g., Yamagishi & Yamagishi, 1994). Our perspective is consistent with recent research reporting that generalized trust increased following interpersonal experiences with people in foreign countries (Cao, Galinsky, & Maddux, 2014), and that environmental change influenced people's understanding of their guanxi relationships (Kiong & Kee, 1998). Thus, we propose that in China and elsewhere where trust in strangers is low, trust in strangers is nevertheless malleable depending on the experiences and situations people find themselves in. Specifically, we propose that positive interpersonal experiences can increase trust in strangers.

Our research makes several contributions. First, across five studies we show that positive experiences with outgroup members can boost people's trust in strangers. These results contribute to the literature documenting how and when personal social experiences can increase trust in strangers. Second, our research reveals that upstream indirect reciprocity acts as the mediating role to explain how social dynamics shapes Chinese people's trust in strangers. Unlike direct reciprocity exchanged between the same two individuals, indirect reciprocity involves at least three different individuals. For example, I help you and somebody else helps me, or I help you and you help somebody else. Finally, our studies suggest that the Chinese people's lack of trust in strangers does not have to be a major obstacle to China's continuing international economic development, because their trust in strangers can increase in response to short-term positive social interaction and indirect reciprocity.

2. Differential modes of association in China

Why do Chinese people have very low trust in strangers? Some scholars suggest that this tendency is related to the fact that their everyday social interaction occurs primarily with relatives and kin but not with strangers. Such interaction pattern leads to well defined boundaries between ingroups and outgroups (Huff & Kelley, 2003). Weber (1951) observed that trust in China is heavily dependent on relatives and kinship and that Chinese people rarely trust outgroup members. According to Weber (1951), trust is rooted in the "community of blood" and rests upon "purely personal, familial, or semi-familial relationships". Similarly, in addressing why Chinese people find it so difficult to trust outsiders, Fukuyama (1995) noted that "the strength of the family bond implies a certain weakness in ties between individuals not related to one another: there is a relatively low degree of trust in Chinese society the moment one steps outside the family circle (p. 56)." Both Weber (1951) and Fukuyama (1995) highlighted the salient boundary between families and strangers, between people in ingroups and people in outgroups.

Much research shows that people commonly place more trust in members of their ingroups than members of their outgroups (Foddy, Platow, & Yamagishi, 2009; Kramer, 1999). People interact frequently with ingroup members, and these interactions typically lead to positive, mutually reciprocal experiences (Colquitt, Scott, & LePine, 2007). In contrast, people tend to interact less frequently with outgroup members, meaning they have less opportunity for positive social interaction with outgroup members, and so fewer opportunities to learn to trust outgroup members. To interact with outgroup members, people must overcome suspicion, uncertainty, and other interpersonal obstacles (Weber, Malhotra, & Murnighan, 2004).

All this research on trust of members of ingroups and outgroups, and the observations of Weber and Fukuyama (1995) that Chinese people have infrequent positive social interactions with outgroup members and so do not trust them, suggest that it may be hard to overcome the low trust in strangers deficit in China. However, Fei's (1992) conceptualization *differential modes of association* suggests a more nuanced understanding of social relationships in China than Huff and Kelley's (2003) stark categorization of family as ingroup and strangers as outgroups. Fei (1992) describes Chinese people as standing at the center of their own interrelated, oscillating, and ultimately declining circles of social influence and social relationships. Using a metaphor, Fei (1992: 61) described differential modes of association to be "like the ripples formed from a rock thrown into a lake, each circle spreading out from the center becomes more distant and at the same time more insignificant." Although Fei's metaphor implies that proximity, emotional closeness, and general feelings of trustworthiness decline as social circles extend outward away from the focal person, the metaphor also implies that circles expand dynamically. This characteristic of differential modes of association is called elasticity and it implies that the boundaries between ingroups and outgroups are not immutable in Chinese society, but instead are relative and situational. For example, a villager can be regarded as an ingroup member relative to a non-villager, but an outgroup member relative to a family member. If boundaries between ingroups and outgroups in Chinese society are under some circumstances mutable, when Chinese do have positive experiences with outgroup members they may be able to overcome the trust in strangers deficit.

3. Positive experiences

Intergroup contact theory (Pettigrew, 1998; Pettigrew & Tropp, 2006) proposes that people's attitudes and behaviors toward outgroups are not categorically static, and that important events such as intergroup contact provide the basis for change. Extending intergroup contact theory, we suggest that positive experiences with outgroup members will increase trust in strangers. Intergroup contact theory provides several reasons why.

First, positive contacts provide experiences that contradict and so allow people to correct prior negative views, reduce prejudices, and generate favorable attitudes toward others. Friendships between straight and gay men, for example, can relieve intergroup anxiety and generate more positive outgroup attitudes (Vonofakou, Hewstone, & Voci, 2007). Similarly, making friends with outgroup members, or simply knowing that someone else is doing so, can significantly reduce outgroup prejudice (Paolini, Hewstone, & Cairns, 2007). A meta-analysis has shown that greater intergroup contact is generally associated with lower levels of prejudice (Pettigrew & Tropp, 2006) that, in turn, can facilitate trustworthiness of outgroup members.

Second, positive experiences with outgroup members can create cognitive contradictions that displace negative expectations and reduce associated negative emotions (Paolini, Hewstone, Voci, Harwood, & Cairns, 2006), thereby reducing intergroup anxiety and overcoming prejudice (Allport, 1954; Pettigrew, 1998). To process these cognitive contradictions, people typically reduce their ingroup favoritism and reconsider their stereotypes toward outgroups (Rothbart & John, 1985). When people strongly favor their ingroups, the cognitive contradiction of a positive experience with an outgroup member can displace negative attitudes about outgroups. The result should be a blurring of the boundary between ingroup and outgroup providing a more favorable foundation for people to interact with strangers (Brown & Hewstone, 2005).

Third, positive experience with one outgroup member can be generalized beyond that person to other strangers in the outgroup. Intergroup contact theory suggests that contact between members of two groups can lead to a process of recategorization that blurs the boundaries between the two groups and leads to a recategorization of two groups into one (Pettigrew, 1998: 75). Generalization from one to all members of the outgroup may allow people to re-evaluate strangers' trustworthiness. It should be particularly likely to occur when the outgroup member typifies the outgroup, but the outgroup member's behavior is strikingly inconsistent with outgroup stereotypes (Brown & Hewstone, 2005). Cao et al. (2014), for example, observed this generalization effect in data showing that people with more experience in foreign countries increase their generalized trust.

In summary, extending intergroup contact theory suggests that positive experiences challenge people's negative expectations of outgroup members. Cognitive contradictions displace negative expectations about the outgroup, and recategorization generalizes the effects from one member of the outgroup to other unacquainted strangers of the outgroup. We therefore predict that:

H1. Positive experiences with an outgroup member or members will increase a person's trust in strangers.

4. Positive experiences and direct and indirect reciprocity

Reciprocity is a fundamental principle of the development of cooperation in social relationships. Reciprocity often refers to direct reciprocity, which is an exchange of like behaviors between the same two social actors (Gouldner, 1960). In other words, "if you scratch my back, I'll scratch yours." The norm of reciprocity suggests that people feel obligated to give back what they have received from another, so a positive experience will commonly make people reciprocate and the exchange of positive experiences builds trust. Direct reciprocity, for example, between the leader and the follower (Brower, Schoorman, & Tan, 2000), or between two colleagues (Yakovleva, Reilly, & Werko, 2010), is particularly important for mutual trust formation.

However, when it comes to Chinese people's trust in strangers, relying on direct reciprocity is theoretically inadequate. First, two people in a dyadic relationship do not always reciprocate trust (Korsgaard, Brower, & Lester, 2015). Second, in China people may not be willing to interact with a stranger in the first place, resulting in no positive behavior to reciprocate. Fortunately, not all reciprocity is necessarily direct. Reciprocity can also be indirect. We propose that indirect reciprocity may serve as the mechanism facilitating an increase in trust in strangers.

Indirect reciprocity refers to an exchange of like behaviors between at least three different social actors who do not receive and provide exchanges with the same others (Nowak & Sigmund, 2005). For example, a beggar receives a small fortune from a passerby, and this beggar then shares the money with others who need help. There are two types of indirect reciprocity. The first, downstream reciprocity, refers to a third party's future acts toward the focal person, as a result of the focal person's current acts toward a second person – that is, "if I scratch your back, someone else will scratch mine." The second type, upstream reciprocity, refers to a focal person's future acts toward a third person, as a result of a second person's current acts toward the focal person – that is, "if you scratch my back, I will scratch someone else's." In both cases, there are current acts and future acts, and the initiators and recipients shift accordingly, but "I" always refer to the focal person. For example, in downstream reciprocity, "I", the focal person, am the initiator in the current act but the recipient in the future act; in upstream reciprocity, "I", the focal person, am the recipient in the current act but the initiator in the future act. Biologists and economists have paid particular attention to indirect reciprocity because it reflects the real world where individuals' altruistic acts extend beyond their relatives toward generalized others. The step from direct to indirect reciprocity also reflects the phenomenon that individuals socially interact with others in multiple intertwined relationships rather than in multiple independent, dyadic relationships.

The mechanisms underlying the two types of indirect reciprocity are fundamentally different. Downstream reciprocity often depends on reputation (Nowak & Sigmund, 2005). Although it is risky to engage in costly behaviors without immediate recompense, the development of a positive reputation via current behavior can attract others to provide payback in the future. In contrast, upstream reciprocity depends on a recent positive experience (Nowak & Sigmund, 2005). People who are the recipients of a positive experience generalize their positive feelings to others. Upstream reciprocity is also called generalized reciprocity to highlight its nature of generalizing reciprocal behaviors from one person to others (e.g., Rankin & Taborsky, 2009). The rationale of this generalization is in the form of positive attitudes, and ultimately in the form of kindness, cooperation, and other positive behaviors extended to unknown others (Nowak & Roch, 2007). Furthermore, the effects of such positive acts do not disappear immediately; instead, they foster people's future prosocial perceptions and behaviors (Bartlett & DeSteno, 2006).

Our theorizing about positive experience affects trust in strangers highlights how a recipient of the experience generates trust towards others, so it is consistent with the logic of upstream reciprocity. We do not hypothesize on downstream reciprocity because our research question is not about how other people treat the person engaged in the positive experience, but how this focal person shape her/his own trust. A key feature of upstream reciprocity is that it is fostered by intergroup contact and it should facilitate behavior and attitude modification (e.g., Bem & Allen, 1974; Festinger, 1962; Olson & Stone, 2005). The focal person in an upstream reciprocity is apt to attribute their behavior to positive attitudes toward other social actors (Stone & Cooper, 2001). This attribution provides a basis for people to generalize their trust

to strangers. This attitude-behavior logic, people's self-assessments of why they engage in positive behaviors toward outgroup members affirms their trust in outgroup members (Zanna, Olson, & Fazio, 1980).

In China, positive experience with outgroups is unexpected, and when it occurs it create a perfect opportunity to disconfirm and reinterpreting biases against members of an outgroup. Upstream indirect reciprocity, in particular, should motivate Chinese people to reconsider their previous categorizations of ingroup and outgroup, thereby increasing their trust in strangers who share no genetic relationship, cultural similarity, or the likelihood of past or future interactions (Bolton, Katok, & Ockenfels, 2004; Weber et al., 2004). This reasoning leads to our second hypothesis:

H2. Upstream indirect reciprocity will mediate the relationship between positive, outgroup experiences and a person's trust in strangers.

5. Overview

We conducted four experiments and one field study to test our hypotheses. In experiments 1 to 3, we assessed the effects of three different positive experiences – perceived support, help, and trusting behavior – with ingroup and outgroup members on people's trust in strangers. Study 3 also assessed whether indirect reciprocity mediated the relationship between positive experience and trust in strangers. Study 4 used a within-subject study to capture change in trust over time associated with a positive outgroup experience. Study 5 used secondary data from a survey in China to examine the effects of ingroup versus outgroup reciprocal helping on trust in strangers.

6. Study 1

Study1 tested H1 by assessing the effects of positive experiences on trust in strangers. We operationalized positive experiences as perceived support from others in terms of financial assistance (Hobfoll & Stokes, 1988).

6.1. Method

6.1.1. Participants

The participants were Chinese undergraduates who were enrolled in an organization and management course in a Chinese university. There were 118 students in this course, and we obtained the instructor's permission to invite students to voluntarily participate. We conducted this study after the early dismiss of the first session when they were not yet familiar with each other. Indeed, we randomly checked with 10 students, all of whom reported that they were not familiar with one another, so we were sure that this was a good research site for our study. Finally, a total of 86 students volunteered. We dropped four participants because their answers referred to institutional not interpersonal trust. The final sample consisted of 82 participants (51 males; 31 females) ranging from ages 18 to 25 ($M = 19.55$, $SD = 1.70$). Among them, 46 were randomly assigned to the ingroup condition, and 36 were randomly assigned to the outgroup condition.

6.1.2. Procedure and manipulation

The participants were told that the study consisted of two separate surveys; different titles and fonts were used to suggest that the surveys were not connected. The first survey was presented as a survey about how college students fund their education. It stated: "Statistics show that college students receive financial aid for their education from a variety of sources." Participants in the ingroup condition read, "A very important source is family." Participants in the outgroup condition read, "A very important source is society." We operationalized ingroup support as financial aid from family and outgroup support as financial aid from society. This experimental manipulation reflects the natural Chinese differentiation of ingroups and outgroups (e.g., Fei, 1992; Hofstede, 1993).

To accentuate the difference between ingroups and outgroups, all the participants completed three written assignments: (1) to list at least three forms of financial aid that they might receive from their family (ingroup condition) or from society (outgroup condition); (2) to identify the most important source on their list and to explain why it was the most important; and (3) to indicate whether they had received financial aid from any of the sources they had listed.

The second survey was presented as a general social survey. It included a trust scale developed by Simons and Peterson (2000) and used by Langfred (2004). The trust scale consisted of the following four items regarding participants' trust in a team project that they would be doing later as part of the course: "We will trust each other a lot in the team," "I know I can count on the other team members," "The other team members know they can count on me," and "I will trust all of the other team members." The study and this survey occurred before students were assigned to teams. Thus, their answers reflected their trust toward unfamiliar others taking this course. They responded to each item on a five-point Likert scale (1 = strongly disagree to 5 = strongly agree). The reliability was $\alpha = 0.88$.

6.2. Results and discussion

At the end of the first survey, we asked the participants to estimate how much annual financial aid (in RMB 10,000) an average student was likely to receive to pay for college education. This question was an indirect check of the validity of our manipulation. Because people tend to expect more support from ingroups than they do from outgroups (Foddy et al., 2009; Kramer, 1999), we expected students in the ingroup condition would estimate higher levels of support than students in the outgroup condition. Results were consistent with our expectation. Participants in the ingroup condition estimated that the average college student received substantially more resources ($M = 3.05$, $SD = 3.69$) than participants in the outgroup condition ($M = 1.33$, $SD = 1.32$), $F(1,80) = 7.07$, $p < 0.01$, $\eta^2 = 0.08$. These results suggest that our manipulation was successful.

Participants who read about outgroup support reported a higher level of trust toward their unknown team members ($M = 4.57$, $SD = 0.56$) than participants who read about ingroup support ($M = 4.30$, $SD = 0.61$). Analysis of variance (ANOVA) indicated that the effect was statistically significant: $F(1,80) = 4.08$, $p < 0.05$, $\eta^2 = 0.05$. This supported our H1.

Simply thinking about outgroup rather than ingroup support was associated with a significant effect on participants' trust in strangers. We regard these findings as preliminary because we manipulated ingroup versus outgroup support in one specific way, so it inevitably has some limitations. First, the word society in the outgroup condition might elicit participants' association with institutions. However, Yang (1993: 23) noted, in China "the subordination of the self to the family ... is primarily a type of ingroup", and the word society can be viewed as its contrast non-family but not institutions (e.g., Lang, 1946; Yang, 1993). Thus, we suggest that it is both theoretically reasonable and conceptually appropriate to use this contrast. Second, although we presented the manipulation and the measure of the dependent variable in separate surveys, our participants may have considered the surveys connected and even guessed our research purpose. Third, participants may have anticipated cooperation with their

as-yet-unknown team members for the project, causing a minimal group effect when we measured trust. To address these limitations, Study 2 tested our hypothesis in a different context.

7. Study 2

Study 2 used a different ingroup versus outgroup manipulation and a different operationalization of trust in strangers from Study 1. Study 2 also controlled for individuals' internalized values, as people's values may influence their levels of trust (Jones & George, 1998).

7.1. Method

7.1.1. Participants

Chinese undergraduates (n = 196; 53% female; mostly freshmen) enrolled in a social psychology course in a Chinese university participated in a classroom negotiation case called *The Sweet Shop*. They understood that the negotiation exercise was an integral part of the course and that their responses would be analyzed for this study only if they formally consented.

7.1.2. Procedure and manipulation

Participants were randomly assigned to roles and to dyads. Each dyad was randomly assigned to either the ingroup (98 participants; 49 dyads) or the outgroup condition (108 participants; 54 dyads). Each participant had 25 min to read the information about the case and to prepare for the negotiation. Before negotiating, each read a story about a boy who asked for help to stop up a hole in a dike and so protect his village from a flood (Trafimow, Triandis, & Goto, 1991). In the ingroup condition, the story said that this boy "asked for help from his brother who was passing by." In the outgroup condition, the cover story said that this boy "asked for help from a passerby whom he had seen before in the town but whom he did not know." The only difference in the two conditions was whether the boy in the story asked for help from his brother or a passerby.

After reading their respective cover stories, all the participants responded to a short questionnaire that contained manipulation check items and questions designed to help them prepare for the upcoming negotiation. Participants indicated their level of trust in their as-yet-unknown negotiating partner. Finally, each dyad negotiated for a maximum of 20 min.

7.1.3. Measures

Study 2's four-item measure of trust was previously used by Gunia, Brett, Nandkeolyar, and Kamdar (2011). It assessed participants' behavioral intentions. The four items were: "I will trust the other party in the upcoming negotiation," "I believe the other party will trust me," "I believe the other party in the upcoming negotiation will distrust me" (Reversed), and "I will distrust the other party in the forthcoming negotiation" (Reversed). Participants responded on a seven-point Likert scale (1 = strongly disagree to 7 = strongly agree); reliability was α = 0.94. Participants did not know who their negotiating partner would be when they responded to these items. To check the manipulation, participants reported how sure they were that the brother/passerby would help the boy on a scale of 0 to 100% with increments of 10%.

At another point during the course in which participants were enrolled, they were asked to complete Schwartz's Value Survey (Schwartz & Bilsky, 1987), a 56-item measure that assessed ten values with moderate to acceptable reliability coefficients: conformity (α = 0.69), tradition (α = 0.65), benevolence (α = 0.85), universalism (α = 0.77), self-direction (α = 0.73), stimulation (α = 0.70), hedonism (α = 0.65), achievement (α = 0.53), power (α = 0.73), and security (α = 0.81).

7.2. Results and discussion

Participants in the ingroup condition were more certain that the boy would receive help (M = 80.13, SD = 10.97) than participants in the outgroup condition were (M = 73.21, SD = 11.45), F (1,151) = 14.59, $p < 0.001$, $\eta^2 = 0.09$. Because family members (i.e., the brother in the ingroup condition) are more likely to be altruistic than strangers (i.e., the passerby in the outgroup condition) (Fehr & Fischbacher, 2003), we conclude that this manipulation was successful.

We found that participants in the outgroup condition (M = 5.49, SD = 1.18) were more trusting of their as-yet-unassigned negotiating counterpart than were ingroup participants (M = 5.02, SD = 1.24), F (1,189) = 7.28, $p < 0.01$, $\eta^2 = 0.04$, supporting H1. In addition, we ran two multiple regressions to test whether individual values affected this result. First, we ran a basic model without controlling for values, showing that the source of help was associated with higher trust (β = 0.19, $p < 0.01$), F (1,189) = 7.28, $p < 0.01$, $R^2 = 0.04$. Then we added all ten values to the model and found that the effect of the source of help remained significant (β = 0.20, $p < 0.01$), F (11,172) = 2.96, $p < 0.01$, $R^2 = 0.16$, again supporting H1.

Among the ten values, only universalism, which reflects a person's understanding, appreciation, tolerance, and concern for protecting the welfare of all people and of nature (Schwartz & Bilsky, 1987), was significantly correlated with trust (β = 0.30, $p < 0.05$). This suggests that people who value others in general also exhibit higher trust in strangers, a finding that is not inconsistent with our theories.

People who read about a boy receiving help from an outgroup member expressed more trust in their as-yet-unknown negotiating partner than did people who read about a boy receiving help from his brother, an ingroup member. Thus, Study 2 replicated Study 1's findings, using a different manipulation, a different context, and a different measure of trust in strangers. Results in Study 2 strengthen our confidence in the validity of our hypothesis; however, both studies 1 and 2 share the limitation that we did not have a control group. Without a control group we cannot evaluate whether this difference is due to an increase in trust in the outgroup condition or a decrease in trust in the ingroup condition. To understand the underlying mechanism, we conducted Study 3.

8. Study 3

We designed Study 3 to test the mediating role of upstream reciprocity as the mechanism underlying the positive experience and trust in stranger relationship. Using a 2 (source of experience: friend vs. stranger) by 2 (valence of experience: positive vs. negative) between-subjects design, Study 3 extended the first two studies in several ways. First, it used the Trust Game (Berg, Dickhaut, & McCabe, 1995) to provide a behavioral rather than an attitudinal measure of trust. Second, ingroups were friends rather than family members. Third, adults, not college students, were recruited to participate in the study. Fourth, the valence of people's experiences was manipulated to be either positive or negative.

8.1. Method

8.1.1. Participants

Participants in Study 3 were 212 Chinese people who voluntarily participated online via a designed webpage. Their mean age was 32.62 years (SD = 7.28); 53% were female. We modified the original Trust Game by using points instead of real money as the payoff. We

told participants that they would play multiple rounds of the game in different roles with different partners. The instructions indicated that the player with the highest total point would receive a gift card worth RMB 60 in addition to their payment of RMB 5, and the player with the lowest total point among all participants would lose the payment. Actually, no one lost their payment of RMB 5.

8.1.2. The trust game

The Trust Game includes two roles, A (the trustor) and B (the trustee). In our version of the game, A received 100 points at the beginning of the round and could transfer any number of points (x) to B. Transfers were multiplied by three; thus, B received three times the number of points sent by A ($3x$). B could then transfer back to A any portion of the tripled total (i.e., $\leqslant 3x$). Scholars have commonly used the Trust Game to study generalized trust (operationally defined as the amount trustors transferred) and direct reciprocity (operationally defined as the ratio trustees returned) (e.g., Croson & Buchan, 1999; Pillutla, Malhotra, & Murnighan, 2003).

8.1.3. Procedure and manipulations

The experiment consisted of two stages. In Stage 1, participants were instructed to read the game's rules and to answer several questions to ensure that they understood the rules. We embedded the experimental manipulation in the instructions. In Stage 2, participants played one round of the Trust game at which point, we announced the end of the study.

In Stage 1, participants played the role of B, the recipient. We manipulated the source and the valence of participants' experience by telling them to imagine that they were playing the game with either a friend (ingroup) or a stranger (outgroup) and that their counterpart had transferred either all 100 points (positive: high trust) or 50 points (negative: low trust) to them. In the trust game "the amount passed by the sender is said to capture trust" (Johnson & Mislin, 2011: 866).

After reading their role information participants answered questions measuring direct and indirect reciprocity. To measure of direct reciprocity, we asked: "Regarding the points you received, how many points will you return to A?" Participants who provided answers that were not in the range given in the instructions were dropped, leaving 212 participants in this study. We operationalized direct reciprocity as the proportion of points participants said they would return. To measure indirect reciprocity, we reminded participants that the player who ended the game with the lowest number of points would be punished. We asked "How many points would you like to give this player to allow him/her to avoid the punishment?" We operationalized indirect reciprocity as the proportion of points participants gave to the player with the fewest points. For example, a participant who received 150 points (50 points multiplied by 3) and returned 50 points to the hypothetical A and sent 20 points to the player with the fewest points at the end of the game would have a direct reciprocity score of 0.33 (50/150) and an indirect reciprocity score of 0.13 (20/150).

Finally, to check the manipulation of ingroup versus outgroup, we asked participants to indicate their perceived level of familiarity with their hypothetical counterpart, using a five-point Likert scale (1 = very unfamiliar to 5 = very familiar).

In Stage 2, we informed participants that they had been randomly assigned to play role A and that they had to decide how to distribute their 100 points. How much participants sent to B in Stage 2 of the study was our behavioral measure of the dependent variable, trust in strangers (Holm & Danielson, 2005; Lount & Pettit, 2012). After participants made this decision, we announced that the experiment was over and that there would be no additional rounds. Participants were then paid.

8.2. Results and discussion

The manipulation of ingroup versus outgroup was successful: people in the ingroup condition ($M = 4.64$, $SD = 0.68$) reported being more familiar with the hypothetical person A than did people in the outgroup condition ($M = 2.35$, $SD = 1.46$), F (1,195) = 188.58, $p < 0.001$, $\eta^2 = 0.49$.

We coded experience with ingroup as 1 and outgroup as 0; we coded positive experience (receiving 100 points) as 1 and negative experience (receiving 50 points) as 0. The correlations in Table 1 indicate that most of the relationships among the variables were as expected. Trust in strangers was significantly and negatively related to the source of experience and significantly and positively related to direct reciprocity, indirect reciprocity, and the valence of experience. In addition, the valence of experience was positively related to direct reciprocity but not to indirect reciprocity: the more A gave, the more B returned ($M = 0.44$, $SD = 0.15$ versus $M = 0.39$, $SD = 0.15$), F (1,210) = 6.134, $p < 0.05$, $\eta^2 = 0.03$. In contrast, the source of experience was negatively related to indirect reciprocity, but was not related to direct reciprocity: participants who received more points (100) from a hypothetical stranger ($M = 0.29$, $SD = 0.18$) sent more points to the player with the fewest points than did participants who received fewer points (50) from a hypothetical friend ($M = 0.23$, $SD = 0.18$), F (1,210) = 5.965, $p < 0.05$, $\eta^2 = 0.03$.

An ANOVA analysis revealed a main effect of the source of experience, showing that participants in the outgroup condition ($M = 52.01$, $SD = 22.94$) gave more in Stage 2 than did those in the ingroup condition ($M = 42.04$, $SD = 24.78$), F (1,195) = 8.58, $p < 0.01$, $\eta^2 = 0.04$. In addition, a main effect of the valence of experience showed that highly trusted participants (recipients of 100 points in Stage 1) ($M = 51.34$, $SD = 27.34$) indicated in Stage 2 that they would give more points than less trusted participants (recipients of 50 points in Stage 1) indicated they would give ($M = 43.96$, $SD = 20.73$), F (1,195) = 4.61, $p < 0.05$, $\eta^2 = 0.02$. The interaction effect was marginally significant, F (1,197) = 3.11, $p < 0.10$. A post hoc Fisher's least significant difference test showed that participants in the positive experience/outgroup condition ($M = 58.74$, $SD = 23.66$) indicated that they would give significantly more than participants in the other three conditions. There were no significant differences among the negative experience/outgroup ($M = 42.52$, $SD = 29.04$), positive experience/ingroup ($M = 46.00$, $SD = 20.69$), and negative experience/ingroup ($M = 41.63$, $SD = 20.75$) participants (see Fig. 1).

To test whether indirect reciprocity mediated this relationship, we followed Baron and Kenny (1986) to test the mediating effect of upstream indirect reciprocity. First, we found a significant effect of the source of experience (stranger versus friend) on indirect reciprocity ($\beta = -0.17$, $p < 0.05$). Second, we found a significant effect of the source of experience on trust in strangers ($\beta = -0.21$, $p < 0.01$). Third, we found that when added to the prediction, the mediating variable, indirect reciprocity, was significant ($\beta = 0.19$, $p < 0.01$), but the significance level of the source of experience diminished ($\beta = -0.18$, $p < 0.05$). The F-tests in all three models were significant, and the pattern was consistent when we added controls for sex and age. Thus, these results support our H2 (see Fig. 2).

To test whether indirect reciprocity mediated the relationship between positive experience/outgroup condition and the other three conditions on trust in strangers, we conducted a bootstrap analysis with a process model (Hayes, 2008). We coded the positive experience/outgroup condition as 1 and the other three conditions as 0. The results indicated that the direct effect of being in the high trust/outgroup condition on trust was significant (*coefficient* = 15.67, $p < 0.001$), and the indirect effect through indirect reciprocity was also significant (BootLLCI = 0.0697, Boot-

Table 1
Descriptive statistics and correlations, Study 3.

Variables	Mean	SD	1	2	3	4
1. Source of experience	0.48	0.50				
2. Valence of experience	0.47	0.50	0.01			
3. Direct reciprocity	0.41	0.15	0.01	0.17*		
4. Indirect reciprocity	0.26	0.18	−0.17*	−0.10	0.14*	
5. Trust in strangers	47.42	26.32	−0.15*	0.21**	0.27***	0.21**

Note:
* $p < 0.05$.
** $p < 0.01$.
*** $p < 0.001$.

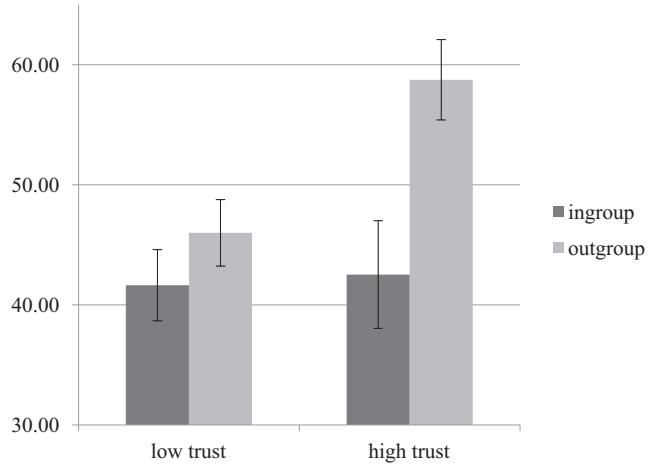

Fig. 1. The average amounts that participants sent in Stage 2 in the four conditions of Study 3. Participants in the positive experience/outgroup condition sent significantly more than they did in the other three conditions.

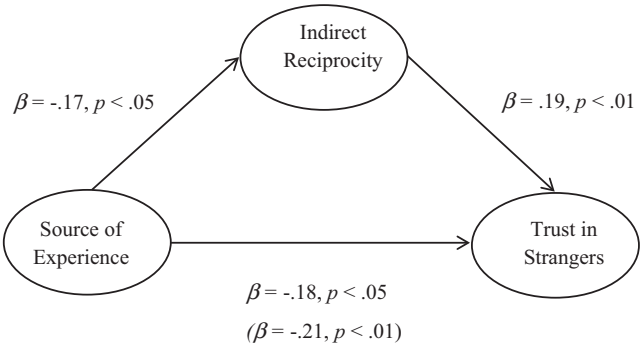

Fig. 2. The mediating effect of indirect reciprocity in Study 3. Upstream indirect reciprocity mediated the relationship between the source of the experience (ingroup vs. outgroup) and trust in strangers.

ULCI = 4.1367), suggesting that indirect reciprocity explained the difference in trust in strangers between the high trust/outgroup condition and the other three conditions.

In sum, Study 3 found that indirect reciprocity mediated the relationship between experience and trust in strangers: a positive experience with an outgroup member led to more indirect reciprocity and indirect reciprocity to higher trust than the same positive experience with an ingroup member. Although the trust game has been used in over 162 trust studies (Johnson & Mislin, 2011), some scholars criticized that its measure of trust, how much a player sends, confounds trust with traits such as altruism (Cox, 2004) or betrayal aversion (Fehr, 2009). We acknowledge this criticism. However, our design of random assignments shows that trust was a function of our study's manipulations but not due to participants' stable traits.

The results of Studies 1–3 have demonstrated an effect of positive experience with outgroup members on trust in strangers. Although we did not have a control group in Study 3, and so do not have a baseline measure of trust, participants were randomly assigned to conditions. Thus, the fact that participants in the positive experience/outgroup condition exhibited significantly more trust than participants in the other three conditions provides strong evidence that positive experiences with outgroup members increase trust. Study 4 was designed to include a control group and capture the change in trust over time.

9. Study 4

Study 4 used a 2 (within-subjects: pre-experience trust vs. post-experience trust) by 3 (between-subjects: positive experience vs. negative experience vs. control) mixed factorial design for several reasons. First, we wanted to investigate how intrapersonal trust changes over time. Thus, Study 4 uses a within-subjects design to compare people's trust before and after a positive experience. Second, Studies 1 to 3 manipulated the independent variable via priming. In contrast Study 4 has participants undergo an actual behavioral experience. Third, Study 4 tests both positive and negative experience with ingroup and outgroup members, and it includes a control group. Study 4's design allowed us to test the effect of a positive versus a negative versus no experience on trust.

9.1. Methods

9.1.1. Participants

Participants were 111 students from two Chinese universities. Their mean age was 20.09 years ($SD = 0.49$); 70 (63.07%) were female. Following Yamagishi and Cook's (1993) approach, we used a three-rather than a two-party Trust Game. Participants were seated in front of a computer in the lab. They were told that they would be randomly grouped with two others and that they would play the trust game for multiple rounds. They were not told how many rounds they would play. In fact, each participant played the game individually for 11 rounds. We tried to ensure that participants truly believed that they were playing the game with real people. For example, the visual interface asked participants to wait a reasonable amount of time for the system to assign group members and for other players to make their decisions. Each participant received RMB 20 for participating and a bonus of RMB 2 to RMB 10 that ostensibly depended on their performance but was actually randomly determined.

9.1.2. The three-party trust game

In the three-party (A, B, and C) Trust Game, A starts with 100 points and could give any portion of it to B, who then chooses how much to send to C, who then chooses how much to send back

to A. We informed participants that three people would be randomly grouped, play the game for multiple rounds, and that, in each round, one of them would be randomly assigned to be A, B, or C. Participants understood that the points that A gave to B as well as the points that B gave to C would be multiplied by 2, but the points C finally returned to A would not be multiplied.

9.1.3. Manipulation and measures

The within-subject feature of the design allowed us to measure participants' trust over time. Because participants played the role of A in the first and the final rounds, the points they sent in these two rounds were our measures of pre- and post-experience trust. It is worth noting that the final round was unique: participants' roles changed across games, but they ostensibly played with the same group of people in each of the first ten games. Prior to the eleventh game, their computer screen announced that all the participants would be regrouped with different people. Thus, the eleventh game was ostensibly played with a new set of strangers.

The participants were also randomly assigned to the three valence conditions: 39 positive, 36 negative, and 36 control. Valence (positive vs. negative) was manipulated by the amount of points participants received when they played the roles B or C, that is, when they could evaluate how much they were trusted. Table 2 displays the participants' roles and the amounts they received in each round. In the positive experience condition, participants received many points from the person who was ahead of them in the chain; in the negative condition, participants received few points; in the control group, participants only played the first round, so the amount they sent serves as the baseline for further analysis.

At the end of the experiment, participants answered two manipulation check questions using a five-point Likert scale: "Do you think the overall experience is positive?" and "Do you think the overall experience is negative?" (Reversed). The reliability of this measure was $\alpha = 0.85$.

9.2. Results and discussion

Results of the manipulation check showed that participants were marginally more positive in the positive experience condition ($M = 3.63$, $SD = 0.89$) than in the negative experience condition ($M = 3.24$, $SD = 1.02$); $F(1,73) = 14.59$, $p = 0.08$. Thus, the manipulation appears to have been successful.

Levene's test of equality of error variances showed no significant difference in the error variance of the pre- [$F(1,73) = 0.874$, $p = 0.35$] and post-experience trust [$F(1,73) = 1.544$, $p = 0.22$], thereby justifying comparing these within-subject measures. In addition, there was no significant difference in pre-experience trust among the three groups, $F(2,108) = 0.04$, $p = 0.97$.

We ran a mixed ANOVA to test our hypothesis that positive experience would increase trust. There was a significant interaction between time of the trust measurement and the valence of the experience (positive vs. negative), $F(1,73) = 4.37$, $p < 0.05$. A repeated measures ANOVA further showed that in the positive experience group, participants' post-experience trust ($M = 42.18$, $SD = 30.67$) was significantly higher than their pre-experience trust ($M = 26.51$, $SD = 24.16$), $t(38) = -3.18$, $p < 0.01$. In the negative experience group, however, participants' pre- ($M = 25.03$, $SD = 26.59$) and post-experience trust ($M = 28.17$, $SD = 27.74$) were not significantly different, $t(35) = -0.98$, $p = 0.34$. More importantly, trust in the control group ($M = 25.56$, $SD = 22.22$) was not significantly different with pre-experience trust in both positive and negative experience condition (see Fig. 3).

This study focused only on experience with outgroup members, but it showed that trust in strangers increased over time after a positive experience, but not after a negative experience. The within-subject design of Study 4 allowed us to observe change in trust over time that corresponded with our theorizing that positive experience with a stranger generalizes to trust in other strangers. The inclusion of a control condition and a negative experience condition allowed us to show, consistent with our theorizing, that in these conditions trust in strangers did not change. Study 4 shows that only positive experience with strangers generates change in trust.

10. Study 5

Studies 1–4 used different experimental designs, operationalizations, and measurements to show that positive experience with strangers increases trust. Study 5 moved the research to the field to test the external validity of our findings. Study 5 also allows us to test our hypothesis about trust in strangers in the context of the realities of life and trust in China.

10.1. Method

10.1.1. Sample

We used the 2005 China General Social Survey (CGSS), which includes data on demographic characteristics and various general attitudes of residents in China. It is similar to the American General Social Survey (GSS). It includes 10,372 respondents with a mean age of 44.70 years ($SD = 14.79$); 52% of the respondents were female. After deleting respondents with missing data on our focal variables (listwise), our final sample included 1335 people, all of whom responded to questions that pertained to reciprocal helping and trust in strangers.

Table 2
Experimental design, Study 4.

Round	Role	Positive experience group		Negative experience group	
		The amount the last person sent	The amount the focal person received	The amount the last person sent	The amount the focal person received
1	A				
2	B	80	160	20	40
3	A				
4	C	110	220	30	60
5	B	75	150	25	50
6	A				
7	B	100	200	0	0
8	B	70	140	30	60
9	C	125	250	15	30
10	A				
11	A				

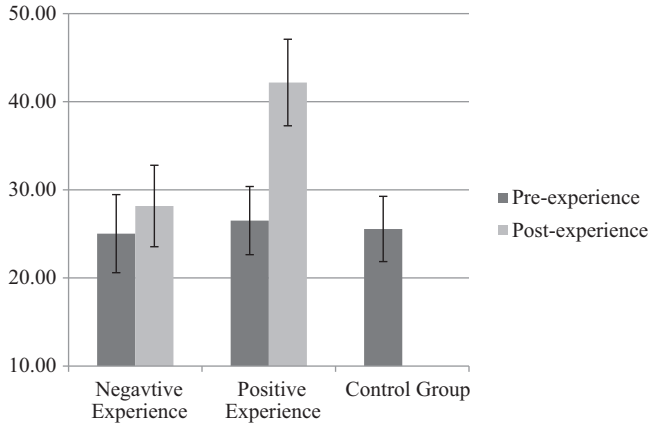

Fig. 3. The amount that participants sent in rounds 1 and 11 in Study 4. In the positive experience group, post-experience was significantly higher than pre-experience trust, while in the negative experience group, there was no significant difference.

10.1.2. Measures

We used ingroup and outgroup reciprocal helping as proxies for having positive experiences with ingroups and outgroups. Ingroup reciprocal helping was measured by the question "How often do you engage in reciprocal helping activities with alumni from your school or colleagues from your organization?" In contrast, outgroup reciprocal helping was measured by the question "How often do you engage in reciprocal helping activities with people attending the same fund-raising event or environmental protection event?" These questions reflect a normal pattern of Chinese social interaction in which fellow alumni and colleagues can be viewed as ingroup members and people involved in general social activities can be viewed as outgroup members (Fei, 1992). Participants responded using a five-point Likert scale (1 = not at all to 5 = very often).

To measure trust in strangers, we used a single question in the survey: "How many strangers can be trusted?" Participants responded using a five-point Likert scale (1 = most of them cannot be trusted to 5 = most of them can be trusted). Research has indicated that single-item trust measures like this one are valid (e.g., Chanley, Rudolph, & Rahn, 2000; Zmerli & Newton, 2008). Our analyses also included four control variables: sex (1 = male, 2 = female), age, education (0 = below college, 1 = college or above), and social economic status, which was measured by asking respondents to indicate their relative social economic status via a five-point Likert scale (1 = low, 5 = high).

10.2. Data analysis

We analyzed the data using a two-stage least squares (2SLS) regression with instrumental variables. It is possible that we would encounter the problem of reverse causality due to the fact that the survey measured both independent and dependent variables. In other words, individuals' trust in strangers may lead them to interact reciprocally with other people rather than different types of reciprocal helping affecting people's trust as we predicted. Incorporating instrumental variables can help us alleviate the problem of reverse causality, because the introduction of instrumental variables to the model can control for this probability (Wooldridge, 2012). Instrumental variables are variables that have a strong fit with endogenous variables (i.e., social interactions) but do not correlate with the error term in the equation examining the dependent variable (i.e., trust in strangers), thereby allowing us to draw casual interferences from the model (Wooldridge, 2012).

To perform the analysis, in the first stage the analysis computed a predicted probability of the endogenous event (i.e., people with higher trust in strangers actively involved in social interactions) as a function of instrumental variables and all other variables including control variables; in the second stage we perform the ultimate regression analysis, incorporating this predicted probability but meanwhile without including the instrumental variables anymore.

Technically, we first created a dummy variable – social interaction – in which a value of 1 indicated that a person was involved in either ingroup or outgroup reciprocal helping and a value of 0 indicated no such involvement. Next, we identified theoretically and methodologically valid instrumental variables. From a theoretical perspective, good instruments should be a good proxy for the endogenous variable but uncorrelated with the error term. We suggest that people's physiological states may affect their willingness to interact with different social actors, but not their trust in social actors. Thus, we selected three instrumental variables related to people's health, emotions, and energy, all measured using a five-point Likert scale. Health was measured using the question "In the last month, did the state of your health affect your daily work?" (1 = no influence, 5 = it made me unable to work). Emotional condition was measured by the question "In the last month, did your emotions affect your daily activities?" (1 = no influence, 5 = it made me unable to perform my daily activities). Energy condition was measured using the question "In the last month, what was the status of your energy?" (1 = very good, 5 = very bad). In addition, we inspected the correlations between variables to determine whether instrumental variables were more strongly correlated with the endogenous variable (i.e., social interaction) than they were with trust in strangers. Health was correlated with social interaction ($r = -0.11$, $p < 0.001$), but not with trust ($r = -0.02$, $p = 0.10$); emotional condition was correlated with social interaction ($r = -0.09$, $p < 0.001$) more than with trust ($r = -0.02$, $p = 0.03$); energy was correlated with social interaction ($r = -0.09$, $p < 0.001$), but not with trust ($r = -0.01$, $p = 0.10$). The results of an overidentification test (Johnston & DiNardo, 1997) also indicated that these three variables were not correlated with the error term of in the equation examining the dependent variable, thereby allowing us to draw casual interferences from our two-stage model (Wooldridge, 2012).

10.3. Results and discussion

The correlation results in Table 3 indicate that outgroup and ingroup reciprocal helping were correlated positively, but only outgroup reciprocal helping was correlated with trust in strangers while ingroup reciprocal helping was not, providing some initial support for our hypotheses.

Because the purpose of the first stage of the two-stage least squares analysis is to generate a predicted probability to use in the second stage, we only present the results of the second-stage regression in Model 1 in Table 4. We used the code "ivregress 2sls" in Stata to perform our analysis, and we found that ingroup reciprocal helping had no effect on trust ($B = 0.17$, $p = 0.92$), whereas outgroup reciprocal helping had a significantly positive effect on trust ($B = 2.15$, $p < 0.05$). The results of an OLS (ordinary least squares) regression without instruments (see Model 2) shows the same pattern of results: ingroup reciprocal helping had no effect on trust ($\beta = -0.04$, $p = 0.19$) while outgroup reciprocal helping had a positive effect on trust ($\beta = 0.09$, $p < 0.01$). Results of a Hausman test (Hausman, 1978) indicated no significant difference between 2SLS and OLS models, further alleviating our concerns over reverse causality. These results provide additional support for our theories.

Table 3
Descriptive statistics and correlations, Study 5.

Variables	Mean	SD	1	2	3	4	5	6	7
1. Sex	1.52	0.50							
2. Age	44.70	14.79	−0.01						
3. Health condition	1.77	1.00	0.08**	0.29***					
4. Emotion condition	1.77	0.95	0.03	0.23***	0.64***				
5. Energy condition	1.78	0.05	0.03	0.21***	0.59***	0.82***			
6. Ingroup reciprocal helping	2.67	0.87	−0.01	−0.14***	−0.05	−0.07*	−0.07*		
7. Outgroup reciprocal helping	2.51	0.05	−0.02	−0.03	0.03	0.02	−0.00	0.39***	
8. Trust in strangers	1.83	0.96	0.01	0.02	−0.07*	−0.05	0.05*	−0.00	0.07*

Note:
* $p < 0.05$.
** $p < 0.01$.
*** $p < 0.001$.

Table 4
Multiple regression results of trust in strangers, Study 5 ($n = 1335$).

Variables	Model 1 2SLS		Model 2 OLS	
	B	*s.e*	*β*	*s.e*
Sex	0.12	0.13	0.02	0.05
Age	0.01	0.02	0.00	0.00
Education	−0.20	0.19	−0.06	0.08
Social economic status	0.07	0.15	0.06*	0.03
Ingroup reciprocal helping	0.17	1.67	−0.04	0.03
Outgroup reciprocal helping	2.15*	1.08	0.09**	0.03
R square	0.01		0.01	
F test	1.95*		2.19*	

Note:
* $p < 0.05$.
** $p < 0.01$.

The 2SLS analysis allowed us to infer a causal relationship between reciprocal helping and trust: reciprocal helping with outgroup members increased trust in strangers, but reciprocal helping with ingroup members did not affect it. Notably, this finding from the large-scale survey is consistent with the experimental results of Studies 3 and 4. However, this study also has some limitations. We used reciprocal helping activities with people "from your school" as the proxy measure of ingroup positive experience. However, it is possible that this question elicit participants' associations with institutions. Likewise, to measure the outgroup positive experience, we used circumstances such as "fund-raising event or environmental protection event" that might also elicit participants' associations with institutions. We admit this limitation, but we believe that due to the consistency of findings between experiments and field evidence, Study 5's contributions outweigh its limitations.

11. General discussion

In five studies we found a robust relationship between positive experiences with outgroup members and trust in strangers. Studies 1, 2, and 3 – all experiments – operationalized positive experiences in terms of perceiving support, receiving help, and being trusted, respectively. Participants who were prompted to think about positive experiences with outgroup members consistently displayed higher levels of trust toward as-yet-unknown strangers than did their counterparts who were prompted to think about positive experiences with ingroup members. Moreover, Study 3 demonstrated that upstream indirect reciprocity partially explained the relationship between positive experiences and trust. Specifically, when participants were asked to think about positive experiences with outgroup members, they tended to exhibit higher upstream indirect reciprocity and, subsequently, higher trust in strangers.

Study 4 used a mixed factorial design to test our hypotheses and, more importantly, to capture change in trust over time among participants who had positive experiences with anonymous others. We measured participants' trust before and after a positive interaction with an anonymous counterpart and found that their trust increased and generalized from the current group to new group of unfamiliar strangers. The control group in this study provided baseline data on trust. Results showed that only positive experience significantly increased trust. Trust did not change from the baseline in the negative experience condition. Finally, Study 5 used a secondary large-scale Chinese social survey to show that outgroup reciprocal helping could predict trust in strangers, while ingroup reciprocal helping could not. This final study provided valuable evidence to validate our findings in the real-world settings.

11.1. Theoretical contributions

As the global economy expands, trust in strangers will become increasingly important for facilitating efficient and effective social interaction, particularly between unfamiliar parties. Given the high probability that Westerners will encounter more and more Chinese business partners (and vice versa), understanding trust in strangers not only provides insight into how trust can be developed during social interaction but also reveals the responsibility of strangers to ease the way for future strangers. Our research contributes to the literature on trust in two major ways. First, our studies consider trust in strangers as dynamic and responsive to events in people's immediate social environment rather than static, as generalized trust has been traditionally conceptualized. Second, by examining the role of indirect versus direct reciprocity as the underlying mechanism explaining increased trust in strangers, we extend current understanding of how social contexts affect trust.

Research has often treated generalized trust in interpersonal interactions as a stable, macro social phenomenon, focusing on environmental antecedents such as income inequality (Neville, 2012), wealth (Delhey & Newton, 2005) and corruption (Rothstein & Uslaner, 2005). Our research in contrast takes an individual-developmental perspective by showing how positive experiences with outgroups can boost trust and cause trust to be generalized to other social actors. In this sense, our research offers a unique perspective recognizing the important influence of meaningful positive events on people's general feelings to others.

We also extend the existing understanding of the relationship between intergroup positive experience and trust in strangers by proposing that indirect rather than direct reciprocity mediates this effect. Direct reciprocity is a central feature of social exchange, but according to our research, it is not effective in developing trust in strangers. Instead in our research it was upstream indirect

reciprocity that was effective in developing trust in strangers. Understanding this phenomenon as an effect of indirect reciprocity provides insight into how positive attitudes and behaviors evolve among unfamiliar social actors. Upstream indirect reciprocity has not received much research attention even though it can influence a variety of interpersonal interactions (Boyd, Gintis, Bowles, & Richerson, 2003; Boyd & Richerson, 1989). We showed the evidence of its powerful role in social interactions. In doing so we provided a novel explanation for the connection between interpersonal experience and trust.

11.2. Trust deficit in China

China is experiencing a trust deficit conundrum. By testing our hypotheses about trust development in China, we hoped to be able to contribute insight into how to solve this conundrum. We used Chinese participants in our studies for both conceptual and practical purposes. Theoretically, our purpose was to study how trust in strangers develops. This made it appropriate to do the research in a culture in which generalized trust is low and people favor ingroup members such as nuclear family members, relatives, and friends and neither tend to interact socially nor trust outgroup members.

One reason why trust may be low in China is that people have limited interactions with people from other social groups. In the current Chinese society, especially in modern cities, people's daily lives are dominated by social interaction limited to familiar and formal social networks. For example, people living in cities may complete an entire day of work and return home without ever talking with any strangers. A local survey in Xi'an, for instance, reported that over 60% of residents did not know their neighbors' names (Ren, 2015). Our research suggests that to address this trust conundrum communities should create opportunities for people to have positive cross-group experiences. In 2016, the Chinese government announced a new policy to tear down walls of gated condos and open up the compounds. This policy aims to increase the urban density and address the traffic and pollution issues. From our understanding, this may also create an opportunity for city residents in China to expand their social networking beyond the walls and reshape their trust in unfamiliar others.

Our research additionally provides two explanations for why such cross-group experiences should have a positive impact on trust in strangers. First, positive experiences with members of outgroups are likely to influence people to increase their trust in strangers beyond those directly involved in the positive experience. Second, the mediating role that indirect reciprocity played in our study implies that people can gradually change their attitudes through their own behaviors. Even though increasing trust in strangers in a society cannot be accomplished quickly, our research suggests that, over time with more and more positive outgroup social interaction, it is possible.

11.3. Practical implications and generalizability

This research was motivated by a desire to understand the trust deficit in China. The results may have been stronger because of the trust deficit in China, but findings would not appear to be limited to the Chinese situation. To be sure, in China the fundamental principles of guanxi and the differential modes of association create a particularly salient boundary between ingroups and outgroups (Leung & Bond, 1984). But our research shows that even in this extreme context, positive experiences with outgroup members leads to increased trust in strangers. This suggests that our results should hold in other cultures in which there also are strong boundaries between ingroups and outgroups. Furthermore, our results provide a good explanation as to why trust in strangers is high in cultures in which the boundaries between ingroups and outgroups are weak: opportunities for social interaction with outgroup members leads to positive experiences and a spiral of trust in outgroup members. We suggest that the relationships between positive experiences with members of outgroups, upstream indirect reciprocity, and increased trust in members of outgroups may be universal. The social relationships we studied do not only occur in China.

11.4. Strengths, limitations, and future directions

This research provides strong evidence of the effects of positive experience on trust in strangers. It also identifies areas for future research on this phenomenon. A major strength of this research is its use of multiple methods with complementary strengths. A series of laboratory experiments and a survey used to investigate the same phenomenon yielded similar results. The survey addressed one of the limitations of the laboratory experiments. They showed that "in the moment" positive experiences clearly and consistently affected trust in strangers. Had we only relied on these experiments, it would be impossible to know if these effects were only short-term and likely to dissipate over time. The survey data dispel this possibility, but do not disclose the complexities in the real world that lock in the effects on trust in strangers of positive experiences with members of outgroups. This is a major opportunity for future research. A second opportunity for future research is to further understand the differences between positive experience with members of an outgroup and downstream versus upstream indirect reciprocity. In our research upstream, but not downstream, indirect reciprocity accounted for increases in trust. This may be due to different psychological processes for reconsidering prior categorizations of ingroups and outgroups underlying the different types of indirect reciprocity. A third opportunity for future research would be to test the relationships found in this research in cultures where the boundaries between ingroups and outgroups are less stark. A fourth opportunity for future research is to test the hypothesis that weak boundaries between ingroups and outgroups is the underlying psychosociological explanation for high generalized trust. Overall, our studies open the door to future research on how positive events and experiences influence people's normally stable attitudes, beliefs, or values.

12. Conclusion

The phenomenon of Chinese's trust deficit in strangers led us to hypothesize that positive experiences with outgroup rather than ingroup members would increase trust in strangers. A variety of positive experiences – getting support from, receiving help from, and being trusted by outgroup members – increased trust in strangers. In addition, upstream indirect reciprocity mediated the positive experience-trust effect. We also observed in a large-scale survey that reciprocal helping with outgroups – but not with ingroups – generated higher trust in strangers. These findings suggest that even people in a low-trust society like China where ingroup-outgroup distinctions are strong can learn to trust strangers when they have positive experiences with outgroup members.

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