

RESEARCH ARTICLE

Pathways to intercultural accuracy: Social projection processes and core cultural values

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Abstract

The present research examines intercultural accuracy—people's ability to make accurate judgments about outgroup values—and the role of social projection processes. Across four studies, U.S. and British participants showed low overall levels of intercultural accuracy for Chinese students' individualistic and collectivistic values. In line with recent changes toward individualism in China, we observed different levels of intercultural accuracy, hinging on whether the criterion values of Chinese were assessed before (2001) or after (2015) this shift. Important for the study of social projection, we observed that U.S./British participants projected their values onto the outgroup. Social projection tendency (measured in Study 2 and manipulated in Study 3) was associated with greater intercultural accuracy. The relationship between projection and accuracy also depended on the shifts in individualistic values of Chinese. Important for the study of intergroup relations, accuracy was positively associated with interest in future relationships with the Chinese.

People's ability to accurately gauge the values of outgroup members can facilitate intercultural relationships (Gelfand & Christakopoulou, 1999), which have become increasingly important in our global world. Nevertheless, little research has investigated people's ability to accurately predict outgroup members' core cultural values. Furthermore, although theory-of-mind processes have been studied extensively (Ames & Mason, 2012), the ability to predict group-level cultural values has received less attention from cultural psychology and person perception scholars (Gelfand & Christakopoulou, 1999; Li & Hong, 2001; Molinsky, Krabbenhoft, Ambady, & Choi, 2005). Yet, a growing area of research on intercultural competence suggests that identifying adaptive processes in intercultural judgments is important to both theory and practice (Chiu, Lonner, Matsumoto, & Ward, 2013; Mor, Morris, & Joh, 2013).

One such important and understudied process is social projection, namely people's reliance on their own preferences and values when judging others. Previous research suggests that social projection can facilitate accuracy in intergroup judgments (Li & Hong, 2001). This is a key finding, given that, in intergroup contexts, people focus too much on their dissimilarities with outgroup members (Mallett, Wilson, & Gilbert, 2008), which reduces the likelihood of social

projection (Clement & Krueger, 2002). As a consequence, inducing social projection processes to outgroup members may help improve accuracy in outgroup judgments (Cho & Knowles, 2013). We therefore suggest that the literature can benefit from understanding under which conditions social projection may facilitate outgroup judgment accuracy. Because cultural values shape interpersonal interactions, we focus on outgroup judgments on cultural values that have been identified as key cultural syndromes (e.g., individualism and collectivism; see Triandis, 1995) as a prominent feature of outgroup judgment accuracy.

More specifically, the present research aims to answer two focal research questions. First, do U.S. and British perceivers show different levels of accuracy when making judgments about Chinese individualistic and collectivistic values? Second, does social projection increase accuracy of U.S. and British perceivers when judging Chinese values and is this relation dependent on value type?

Accuracy on Core Cultural Values

Accuracy in judgments of others is one of the oldest topics in social and personality psychology (Kenny &

Albright, 1987; Swann, 1984). Researchers have defined and studied accuracy in different and sometimes conflicting ways (Park & Judd, 2005), but many have examined biases in accuracy judgments (Ames & Mason, 2012; Funder, 1987; Kenny & Albright, 1987). According to Schwartz and Struch (1989), a valid measure of intercultural accuracy should assess people's beliefs about others that (a) guide behavior across interaction settings, (b) are commonly used by individuals when forming impressions, and (c) demonstrate the degree of similarity or difference between one's own group and the outgroup.

Kruglanski (1989) proposed an approach for studying judgment accuracy that defines accuracy as the degree of correspondence between a perceiver's judgment and a criterion (e.g., target actual endorsements). However, in the context of intergroup relations, the judgment of accuracy is more complex. For example, Park and Judd (2005) suggest researchers may attempt to reduce response biases by employing a full accuracy design, comparing both ingroup and outgroup members' responses to similar items and examining prediction criteria with both negative and positive valence, such as cooperation versus competition. Across our four studies, we attempt to employ a similar methodology that corresponds with previous research by Wan *et al.* (2007), Li and Hong (2001), and Park and Judd's (2005) recommended approach.

Examining the domain of cultural values is relevant to the growing research on intercultural competence and intercultural perception. For individuals and groups interested in forging close intergroup relations, the ability to make accurate intercultural judgments is crucial, given that values direct behavior and preferences (Sagiv, 2011), and may facilitate cross-cultural understanding and coordination (Gelfand & Christakopoulou, 1999). For example, both American and Chinese individuals endorse their most important values along the core dimension of individualistic (for example, Americans/British perceivers) versus collectivistic values (for example, Chinese perceivers) (H. C. Triandis, 1995). Individualistic cultures emphasize individual rights, self-assertion, and self-oriented traits, such as independence and autonomy; by contrast, collectivistic cultures emphasize social connectedness, fulfilling social roles and obligations, and other-oriented traits, such as nurturance and deference (Hofstede, 1980; Markus & Kitayama, 1991; Schwartz, 1994; Triandis, 1989; Wan *et al.*, 2007).

Individualism versus collectivism is a critical concept in intercultural accuracy judgments and intercultural coordination for a number of reasons. First, collectivists, more often than individualists, make a large relational investment in ingroup members (Gudykunst, Ting-Toomey, & Chua, 1988; Ting-Toomey *et al.*, 1991). Traditionally, the collectivism of the Chinese is reflected in their use of language that maintains "face" for self and other—a strategy that reaffirms interpersonal bonds (Earley, 1993; Earley & Erez, 1997). By contrast, Americans and the British may rely more heavily on language to convey

information to counterparts rather than to lubricate social relationships. Second, a recent review by Krajczewicz, Hertkorn, Rössel, and Wagner (2002) shows the wide range of organizational dynamics that differ across the individualism–collectivism divide. These suggest that for an American or British person working with a Chinese counterpart, interpersonal communication and interpersonal coordination at work will hinge on their ability to predict their levels of individualism and collectivism.

From a practical research standpoint, past social psychological research by Ho and Chiu (1994) identified nine conceptually different components of individualism (self-reliance, individuality, autonomy, competition, individual interests, individual responsibility, financial independence, rights to privacy, and individual effort) and nine conceptually different components of collectivism (collective effort with peers, collective responsibility with peers, conformity, cooperation, group spirit, striving for common good, majority rule, self-sacrifice, and mutual support among peers). In the present research, we use these core values, as these are central to finding common ground in intercultural exchanges. More specifically, we investigate how U.S. and British participants predict the collectivistic and individualistic values of Chinese, factoring in how Chinese values have evolved over time.

A Shift Toward Individualism among the Chinese

Globalized commerce and unprecedented technological advances have brought rapid cultural changes across the world. Research has documented the extensive impact of global forces such as the World Wide Web on cognition (Saxe & Weitz, 1982), emotion (Mesquita, Frijda, & Scherer, 1997), creativity (Leung, Maddux, Galinsky, & Chiu, 2008), motivation (Twenge & Im, 2007), interpersonal behavior (Loucky, 1976), personality traits (Roberts & Helson, 1997), and the self-concept (Gentile, Twenge, Freeman, & Campbell, 2012).

Similarly, China has undergone dramatic social, economic, and cultural changes over the past three decades. Our focus on changes in Chinese values is pertinent to China's position in the world as a country undergoing significant cultural transitions. In line with our approach, Berry, Kim, Minde, and Mok (1987) claimed that populations that are in cultural transition, such as the Chinese, are particularly important to study in light of such changes. In particular, the media has reported a trend toward narcissism in China (Simon, 2007), which suggests individualism may be on the rise in the nation in recent years. As compared to Li and Hong's documentation of collectivism as a core value in a 2001 sample of Chinese students, more recent research reveals that young Chinese university students in Beijing and Shanghai behave more individualistically than their counterparts from Hong Kong and Vancouver, Canada (Chen, 2009). These recent

shifts toward individualism—the core value of U.S./British nationals—may require that we compare previous and current endorsement of core individualistic and collectivistic values of Chinese university students.

More importantly, it is important to test how value endorsement may relate to accuracy in person perception for U.S./British participants. Given that recent research reveals a rise in individualism among Chinese students (Parker *et al.*, 2009), we expect that U.S. and Chinese students' new values have become more similar over time, suggesting that U.S. students' accuracy on individualistic values would be higher when examining the new Chinese values (Parker *et al.*, 2009), than when examined with older data (Li & Hong, 2001). Notably, the present research does not aim to examine American/British perceivers' ability to detect changes in values among the Chinese; rather, it looks at whether accuracy judgments (e.g., as a consistent formula) may improve as a function of enhanced overlap between the Chinese and Americans/British perceivers on individualism. In other words, Americans/British perceivers might not be aware, or may not update their assumptions, that such shifts toward more intercultural similarity with Chinese occurred. One such factor that might aid similarity judgments and intercultural accuracy is a self-referential process, namely social projection.

Social Projection and Intercultural Judgments

When making social predictions, people often allow their own characteristics and values to influence how they judge others (Cho & Knowles, 2013). This egocentric tendency, called social projection, is a robust and powerful phenomenon that strongly influences how we perceive others (Robbins & Krueger, 2005). Social projection is often conceptualized as a bias that leads to an overestimation of the similarity between oneself and others. But does it also apply when we make judgments about outgroup members?

Research has shown that projection is much weaker toward people we dislike (Machunsky, Toma, Yzerbyt, & Corneille, 2014), people who compete with us (Toma, Yzerbyt, & Corneille, 2010), people who are dissimilar to us (Ames, Mor, & Toma, 2013), and outgroup members (Cadinu & Rothbart, 1996; Cho & Knowles, 2013; Clement & Krueger, 2002; J. Krueger & Zeiger, 1993; Riketta & Sacramento, 2008). Perceivers tend to judge outgroup members as highly dissimilar from themselves (sometimes even more dissimilar than they actually are) which reduces social projection onto outgroup members (Wilder, 1986). This tendency to focus on dissimilarities drives negative expectations regarding interactions with outgroup members, but those expectations become more positive when similarity is emphasized (Mallett *et al.*, 2008). Inducing similarity with different-race interaction partners reduces anxiety during interactions, arouses interest in sustained contact with one's partner, and improves accuracy in perceptions of one's partner's

relationship intentions (West, Magee, Gordon, & Gullet, 2014). In the context of intergroup judgments, inducing perceivers to focus on similarities rather than differences may promote social projection onto outgroup members—a psychological process that may enhance perceivers' intergroup perceptual accuracy.

In line with this idea, studies have shown that social projection improves empathic accuracy (Neyer, Banse, & Asendorpf, 1999; Thomas, Fletcher, & Lange, 1997); facilitates greater cooperation, according to the social projection hypothesis, (J. I. Krueger, DiDonato, & Freestone, 2012); and is associated with higher intergroup perceptual accuracy (Li & Hong, 2001). For example, Li and Hong (2001) showed that Hong Kong and mainland Chinese students more accurately predicted the values of the outgroup if they used projection as a judgment strategy. These findings are consistent with early work by Hoch (1987) examining social projection tendencies and perceptual accuracy. Hoch showed that people who displayed higher levels of projection were also more accurate when the targets were actually similar to them. Focusing on their own preferences and values when judging outgroup members' values allows perceivers to see greater similarities between themselves and others, both in interpersonal (Cho & Knowles, 2013) and in intergroup relations (Riketta & Sacramento, 2008).

Taken together, past research suggests that social projection may facilitate intercultural accuracy on cultural values. We next shift to examine the theoretical literature, which may inform about whether people should project more on some cultural values than on others.

In the realm of cultural values that differ along established cultural dimensions (H. C. Triandis, 1995), it is as yet unknown when and how social projection processes are triggered. Past theory suggests that people will be more likely to project onto others characteristics that satisfy their own motivational goals. For example, when individuals want to succeed at an intellectual task, they project their competence traits more, but when they want to succeed at a social task, they project their warmth traits more (Toma, Yzerbyt, & Corneille, 2012). In the context of intergroup relations, people may project more on some cultural values than on others because they are motivated to achieve or maintain optimal distinctiveness with the outgroup (Brewer, 1991). American and British perceivers may chronically engage in cognitive biases to maintain ingroup distinctiveness in order to minimize similarity with the Chinese. For example, the ingroup homogeneity effect would lead American/British perceivers comparing themselves on focal values to Chinese individuals (outgroup) to assume that individualism applies more to themselves than to the Chinese (Haslam, Oakes, Turner, & McGarty, 1995). Relying on Brewer's theory and on the ingroup homogeneity effect (Haslam *et al.*, 1995), we might expect that individuals would be less willing to project on values

that *distinguish* their ingroup from the outgroup—their core cultural values. For example, if individualistic values are perceived to distinguish Americans from outgroup members, such as the Chinese, then Americans might be less inclined to project these values onto the Chinese.

A different prediction would arrive from social projection research. According to social projection, individuals self-anchor on values they assign to themselves (Otten & Wentura, 2001) and project on values that are highly accessible to them (Newman, Duff, & Baumeister, 1997), such as individualistic values, in the case of Americans. This is in contrast to what the optimal distinctiveness and the ingroup homogeneity effect would predict. Importantly, people can also project as an overall inferential strategy (Krueger & Clement, 1996), which will lead Americans to generalize from their own values to Chinese values. Of importance too, people can use social projection to infer the characteristics of targets that they perceive as similar (similarity contingency model; Ames, 2004), regardless of value type. In other words, inducing similarity between Americans and the Chinese could enhance projection, which in turn should enhance accuracy of Americans' judgments, provided that an overlap between American and Chinese values truly exists (as also suggested by Li & Hong, 2001).

To sum up, there are two potential predictions here. On the one hand, Americans and British could project differently on different values (less on core individualistic values than on collectivistic values) as a way to maintain optimal distinctiveness with Chinese. If that is true, projection should lead to higher accuracy on collectivist than on individualistic values. On the other hand, Americans and British could use projection as an overall inferential strategy and project to the same extent to all values. If that is true, projection should lead to higher accuracy on values that truly overlap between Americans and Chinese.

Overview of Studies

Given past theory on cultural values and social projection in outgroup judgments, the present research aims to answer two focal research questions. First, do American and British perceivers show different levels of accuracy when making judgments about Chinese individualistic and collectivistic values? In our first two studies (Studies 1a & 1b), we examine intergroup accuracy by using Chinese students' endorsement of values a decade ago (2001) as a criterion, as well as endorsements on values collected more recently (2015). These two exploratory studies provide initial insight into the role of social projection in intercultural accuracy.

Second, does social projection increase accuracy in intergroup judgments for American/British perceivers? In Studies 2–3, we examined these social projection

processes as they occurred naturally and when they were manipulated. We tested two alternative hypotheses here. First, projection would be associated with higher accuracy on collectivistic than on individualistic values as a way to maintain optimal distinctiveness. Second, projection would be associated with greater accuracy, especially when projecting on values that highly overlap between American/British and Chinese values. Overlap between American/British perceivers and Chinese individuals is expected to be greater on collectivistic values than on individualistic values when considering the criterion values from 2001 because the traditional values of Chinese were then more similar to American/British values of collectivism than individualism. However, when examining the new values (2015), which reflect a rise in individualism among Chinese, we expect Americans to be more accurate when projecting on individualism. We conducted a pilot study to examine the shift in values for the Chinese over time. In Study 3, we also explored the association between accuracy and interest in future relations as a means of connecting accuracy with intergroup behavior.

In all studies, we asked participants in the United States and Britain (with varying levels of experience with Chinese culture) to predict Chinese university students' endorsement of 18 core values identified in previous research (Wan et al., 2007). We then assessed Western participants' responses against the true values of Chinese university students (as identified in a study by Li & Hong, 2001, and by our recent survey in China with mainland Chinese university students, 2015).

Pilot Study: Shift in Values for Chinese

One hundred and five Chinese university students ($M_{\text{age}} = 21.86$, $SD = 3.96$; 60% female; Han Chinese: 100; Hui Chinese: 3; Kazak Chinese: 1; Mongol Chinese: 2; Tujia Chinese: 2) from a university in Mainland China were recruited for a study for pay. The study was administered in December 2015 and was open to undergraduate and graduate students.

Personal Endorsement of Values

Participants received a link to an online survey and completed different tasks that involved predicting Chinese people's values and behaviors. First, participants rated their own personal endorsement of the 18 values using the same procedures administered by Li and Hong (2001). Participants received the following instructions: "In this survey, we ask that you reflect about some of your most cherished values. The following list has 18 values. We would like you to choose 10 values from this list you strongly endorse. Next to each value, please enter a '1' if you endorse the value and a '0' if you do not endorse the value. For each of the following values, please indicate which of the following values you most strongly cherish." The

Table 1. Actual value endorsement by the Chinese and participants' predictions for ingroup and outgroup on individualistic and collectivistic values (Study 2)

Values	Chinese actual 2001 Mean (SD)	Chinese actual level 2015 Mean (SD)	Chinese predicted Mean (SD)	American predicted Mean (SD)	Self-rating Mean (SD)
Individualistic values					
Autonomy	87.10 (0.00)	85.70 (0.00)	49.13 (29.29)	59.60 (27.86)	52.69 (50.20)
Competition	71.40 (0.00)	41.90 (0.00)	66.68 (28.08)	62.05 (25.61)	32.26 (47.00)
Financial independence	85.70 (0.00)	84.80 (0.00)	66.83 (26.36)	70.69 (28.21)	81.72 (38.86)
Individual effort	24.30 (0.00)	85.70 (0.00)	67.22 (26.87)	65.91 (23.69)	84.95 (35.95)
Individual interests	32.90 (0.00)	69.50 (0.00)	52.47 (27.32)	72.20 (23.55)	73.12 (44.57)
Individual responsibility	54.30 (0.00)	85.70 (0.00)	65.54 (26.01)	61.40 (26.30)	81.72 (38.86)
Individuality	67.10 (0.00)	63.80 (0.00)	44.23 (26.24)	76.71 (22.62)	84.95 (35.95)
Rights to privacy	72.90 (0.00)	68.60 (0.00)	47.63 (28.63)	78.60 (26.15)	83.87 (36.98)
Self-reliance	90.00 (0.00)	74.30 (0.00)	65.19 (26.77)	68.66 (23.95)	89.25 (31.15)
Collectivistic values					
Collective effort	54.30 (0.00)	29.50 (0.00)	65.58 (25.44)	56.63 (23.48)	43.01 (49.78)
Collective responsibility	31.40 (0.00)	57.10 (0.00)	65.94 (25.04)	57.28 (23.12)	50.54 (50.27)
Conformity	4.30 (0.00)	18.10 (0.00)	68.10 (24.49)	35.88 (26.81)	7.53 (26.53)
Cooperation	90.00 (0.00)	73.30 (0.00)	72.25 (22.06)	61.73 (23.41)	90.32 (29.73)
Group spirit	51.40 (0.00)	75.20 (0.00)	62.85 (28.10)	59.15 (26.22)	37.63 (48.71)
Majority rule	21.40 (0.00)	12.40 (0.00)	52.95 (31.52)	55.91 (28.70)	24.73 (43.38)
Mutual support from peers	80.00 (0.00)	67.60 (0.00)	59.65 (27.50)	65.04 (25.04)	52.69 (50.20)
Self-sacrifice	28.60 (0.00)	11.40 (0.00)	72.74 (26.07)	42.84 (26.05)	40.86 (49.42)
Striving for common good	37.10 (0.00)	37.10 (0.00)	68.53 (25.72)	59.03 (25.55)	77.42 (42.04)

percentage endorsement of each value is reported in Table 1 (column 2). In 2001, 65.08% of Chinese students endorsed individualistic values as compared to 73.33% who were surveyed in 2015, revealing an upward trend, in line with ongoing research. With regard to collectivism, the trend suggests that this value did not change much: 44.28% of the Chinese in 2001 and 42.41% surveyed in 2015 endorsed collectivism. The survey results obtained, which were used as criterion measures in Studies 1–3, revealed convergent validity with recent studies showing an increase in endorsement of individualistic values among Chinese students (Cai, Kwan, & Sedikides, 2012; Kwan, Kuang, & Hui, 2009).

Study 1A: Intercultural Accuracy among MBA Students

Method

Participants. As part of an out-of-class exercise that they completed at home, 57 MBA students (62% male, mean age = 28 years) attending a negotiations course at a large East Coast American university participated in this study. Of these, 67.2% were identified from program records as European-American, 24.1% as East- or South Asian, 3.4% as Latino/Hispanic, 3.4% as Other, and 1.7% as African-American.¹

¹Only 6% of the larger cohort of 390 MBA students in this entering class who completed a pre-orientation program survey reported working or studying in China prior to entering the program.

Table 2. Standardized Beta coefficients representing accuracy on collectivistic and individualistic values both for old values (2001) and new values (2015) in all studies

	Accuracy old values	Accuracy new values
Study 1a		
Collectivistic values	.086*	.074*
Individualistic values	-.024	.007
Study 1b		
Collectivistic values	.069*	.069*
Individualistic values	-.043	.018
Study 2		
Collectivistic values	-.087*	-.092*
Individualistic values	-.024	.029
Study 3		
Collectivistic values	.063*	-.009
Individualistic values	-.032	-.029

* $p < .05$.

Materials and procedure. Participants received a link to an online survey and completed a number of negotiation course exercises, including a task that involved predicting Chinese students' cultural values. Before beginning the task, participants were presented with the following prompt: "In the next task, we would like you to try to estimate the values most cherished by university students from China. For each of the following values, please estimate the percentage of Chinese University students who would choose the value as one of their 10 most cherished values." Participants then assessed the importance to Chinese students of the same nine individualistic values (e.g., competition and individual interests) and nine collectivistic values² (e.g., collective responsibility

²Judgment confidence was also assessed for a different test of hypotheses and reported in the Methods file available in the supplementary materials available online.

and conformity) identified by Wan et al. (2007). Respondents then made predictions about the prevalence of these values using percentage scores (Min = 0%, Max = 100%).

Results³

Strategy of data analysis. Because the ratings of values were nested within participants, the data were analyzed by means of multilevel models. Such models allowed us to estimate random effects of rated values and value type, thus capturing possible variations of the effect within and between participants.

Rated values and value type (individualism vs. collectivism) were our level-1 variables. Our accuracy analysis used the *true values as criterion* and the *rated values and value type as predictors* at level-1. Our hypothesis predicts that value type influences the covariation between the true values and the rated values (i.e., accuracy). We implemented the following basic model:

$$\begin{aligned} \text{TrueVal}_{ij} = & \beta_{0j} + \beta_{1j}\text{RatedVal} + \beta_{2j}\text{TypeVal} \\ & + \beta_{3j}\text{RatedVal} \times \text{TypeVal} + u_{1j}\text{RatedVal} \\ & + u_{2j}\text{TypeVal} + u_{3j}\text{RatedVal} \times \text{TypeVal} + e \end{aligned}$$

with β_{0j} as fixed intercept, β_{1j} to β_{3j} as fixed regression weights, u_{1j} to u_{3j} as random effects, and e as residual. Value type was coded -1 for individualistic values and $+1$ for collectivistic values. The critical parameter for our hypothesis is β_{3j} because it denotes the extent to which the accuracy depended on value type. We report analyses both for the true Chinese values by Mainland Chinese students as reported by Li and Hong (2001) (old values) and for the Chinese values found in our survey (2015, new values).

Intercultural accuracy⁴. Values rated by our participants did not predict the true values of Chinese students, $B = .031$, $SE = .02$ ($\beta = .031$), $t = 1.05$, $p = .29$ (old values), $B = .039$, $SE = .02$ ($\beta = .041$), $t = 1.60$, $p = .11$ (new values), which suggests that the overall intercultural accuracy among MBA students is poor, not statistically different from 0.

In line with our hypothesis, we found a marginally significant value type \times accuracy interaction: intercultural accuracy depended on value type, $B = .055$, $SE = .030$ ($\beta = .119$), $t = 1.85$, $p = .06$. Accuracy for collectivistic values was significantly different from 0, $B = .090$, $SE = .044$ ($\beta = .086$), $t = 1.94$, $p = .05$, and

higher than for the individualistic values, $B = -.024$, $SE = .039$ ($\beta = -.024$), $t = -.6$, $p = .55$ (old criterion values).

When considering the new criterion values, the pattern was similar, although the value type \times accuracy interaction was not significant, $B = .033$, $SE = .024$ ($\beta = .074$), $t = 1.34$, $p = .18$: accuracy for the collectivistic values was again positive and significantly different from 0, $B = .072$, $SE = .037$ ($\beta = .074$), $t = 1.96$, $p = .05$, and non-significant for the individualistic values, $B = .006$, $SE = .032$ ($\beta = .007$), $t = .20$, $p = .84$.

Study 1A found that this sample of Americans had a generally low level of intercultural accuracy for Chinese values. We also found a main effect of value type on accuracy, revealing that participants were more accurate in making predictions for collectivistic (prototypical for Chinese) than for individualistic values (prototypical for American participants) on both old and new values, see Table 2. We will return to discuss the possible underlying reasons for this pattern of finding in the General Discussion.

Study 1B: Intercultural Accuracy among British Students

In the second study, we tested whether the results from Study 1A would replicate among a different sample of individuals who are also expected to strongly endorse individualistic values—British students (Triandis, McCusker, & Hui, 1990). We also measured participants' familiarity with the Chinese people to rule out a third variable previously associated with accuracy in emotion recognition across cultures (Elfenbein & Ambady, 2003).

Method

Participants. From the subject pool of a London-based business school, we recruited 93 participants who took part in a study about personal values and beliefs in return for £10 compensation and the chance to win a book voucher; 12 participants were removed from the analyses for not following study instructions or failing comprehension checks.

In the resulting sample of 81 participants (67.9% female; $M_{\text{age}} = 29$), 90.1% were British citizens. In the demographic measures we administered, 51.9% identified themselves as White, 25.9% as Asian, 13.6% as Mixed/Other, and 8.6% as Black or Caribbean. Two participants further reported they had previously studied or worked in China. On a four-point scale (1 = none and 4 = a lot), participants reported moderate levels of familiarity with Chinese culture ($M = 2.42$, $SD 0.90$).

Procedure. This study consisted of two parts to separate the administration of individual difference measures from the main study measures. A week later,

³Preliminary analyses reported in the supplementary materials revealed no significant differences ($ps > .10$) in intercultural accuracy between American East-Asian participants and other ethnic groups in the study samples. Therefore, we decided to report the results for the entire sample in the results section of all four studies.

⁴Perspective taking and metacognition, which were also measured, did not influence intercultural accuracy. This also applies to Study 1B.

participants received an email asking them to complete part two, which required them to complete a number of online tasks that involved predicting people's values and behaviors. Clicking on the enclosed link took them to the same online survey used in Study 1, where they made predictions about Chinese students' values.

Results

A similar multilevel model as in Study 1A was used.

Intercultural accuracy. As in Study 1A, the overall accuracy was poor when considering the old criterion values, $B = .013$, $SE = .023$ ($\beta = .013$), $t = .537$, $p = .591$, but was significantly greater than 0 when considering the new values, $B = .040$, $SE = .019$ ($\beta = .044$), $t = 2.10$, $p = .04$. This could be due to a rise in the endorsement of individualistic values by the Chinese students between 2001 (Li & Hong's, 2001 study, 65.08%) and 2015 (at the time we collected the data, 73.33%).

Intercultural accuracy again depended on value type, $B = .054$, $SE = .023$ ($\beta = .123$), $t = 2.32$, $p = .02$. Accuracy for the collectivistic values was significant, $B = .067$, $SE = .034$ ($\beta = .069$), $t = 1.95$, $p = .05$, and higher than for the individualistic values, $B = -.042$, $SE = .032$ ($\beta = -.043$), $t = -1.31$, $p = .19$ (old values). The pattern was similar, although not significant, when considering the new criterion values, $B = .024$, $SE = .019$ ($\beta = .056$), $t = 1.22$, $p = .22$: accuracy for the collectivistic values was significant, $B = .064$, $SE = .028$ ($\beta = .069$), $t = 2.26$, $p = .02$, and higher than for the individualistic values, $B = .017$, $SE = .026$ ($\beta = .018$), $t = .64$, $p = .52$.

Discussion

Using a different sample of Westerners (British students), Study 1B found a low-to-moderate level of intercultural accuracy for Chinese values. Importantly, participants were again more accurate in making predictions for collectivistic than for individualistic values. When comparing accuracy on old values and new values, we again found greater accuracy levels in Study 1B when using the new values, see Table 2.

The higher score on intercultural accuracy for collectivistic values in Studies 1A & 1B can be explained in three ways. A first explanation is that participants formed their judgments by relying on Chinese cultural stereotypes (Also see Mor et al., 2013 for a similar effect), which were more closely aligned with collectivistic than individualistic values. A second explanation is that Americans projected onto the Chinese, but only on that dimension that ensures optimal distinctiveness, namely collectivistic values (Brewer, 1991). However, this should lead to higher accuracy on the collectivistic values (than on individualistic values) only if the collectivistic values overlap between Americans and Chinese in 2001 and 2015. Our pilot study

and the existing literature seem to suggest a switch in Chinese values toward more individualism in 2015 compared to 2001. A third possibility is that Americans use projection as an overall inferential heuristic (Krueger et al., 2012), which should improve accuracy when there is overlap between American and Chinese values (see the pilot). More specifically, projection should improve accuracy on the old collectivistic values (2001) and on the new individualistic values (2015) due to shifts in values in both Chinese and American culture (Parker et al., 2009). We tested this potential mechanism in Study 2.

Interestingly, we found no evidence for accuracy on individualistic values (either old or new criterion values). These findings may suggest that participants were not projecting their self-values on individualism sufficiently onto the Chinese. In the next study, we revised our methodology to trigger heightened projection on this dimension to the outgroup by measuring both self and outgroup judgments on these core dimensions.

Study 2: Projection to Outgroup as a Mediating Mechanism

In the next two studies, we tested whether the reduced tendency to recognize similarities with the outgroup is the underlying mechanism hindering intercultural accuracy. If so, increased projection should increase intercultural accuracy (especially when the criterion values are individualistic values recently assessed (2015), which are more similar to Americans' individualistic values). In Study 2, we measured projection onto outgroups and tested whether more projection was associated with higher accuracy.

Method

Participants. We recruited 159 American participants via Mturk to participate in a study about personal values and beliefs, of whom 66 were removed from the final dataset for not following study instructions (e.g., entering "0" for prediction responses) or failing two of the comprehension checks administered.⁵ To allow for a more conservative test of our research questions, we examined our research questions with an Mturk sample, which is expected to have fewer experiences abroad with the Chinese relative to higher socioeconomic university samples (Behrend, Sharek, Meade, & Wiebe, 2011; Buhrmester, Kwang, & Gosling, 2011). Of the resulting sample of 93

⁵Follow-up *t* test analyses revealed that the participants who were removed from the dataset did not differ from those who remained in the primary analysis in age, gender, ethnicity, or overall accuracy and projection scores, $ps > .05$. Moreover, in the supplementary materials, we also provide the analyses with the full sample. Those analyses suggest that effects are not changed when using the full sample of Mturk participants.

participants, 52.7% were female, with a mean age of 38 and 97.8% reported American nationality. Of these, 80.6% identified themselves as White, 5.4% as Asian, 3.2% as Hispanic, and 10.8% as African American. None of the participants reported having ever lived in China. Only three participants reported speaking Mandarin.

Procedure

Personal endorsement of values. Participants received a link to an online survey and completed different tasks that involved predicting Chinese people's values and behaviors. In the first part, participants were asked to rate their own personal endorsement on the 18 values identified by Wan et al. (2007) that were also used to gather the new criterion values and to make predictions for Chinese in Study 1 and Study 2. To assess Americans' personal endorsement on these values, participants received the following instructions: "In the first part, we ask that you reflect about some of your most cherished values. The following list has 18 values. We would like you to choose 10 values from this list you strongly endorse. Next to each value, please enter a '1' if you endorse the value and a '0' if you do not endorse the value. For each of the following values, please indicate which of the following values you most strongly cherish." These values are reported in Table 1 (column 3).

Filler task. Participants then completed a filler task, an ostensible visual perception task that asked them to count the number of dots in a given space.

Outgroup and ingroup values. For the outgroup task, participants were asked to estimate the percentage of Chinese students who would choose each value as one of their 10 most cherished values. For the ingroup task, participants were asked to indicate the percentage of American students who would choose the value as one of their 10 most cherished values. The ingroup and outgroup cultural values judgment task was randomly assigned within participants to prevent group order effects. The values were presented in the same order as in previous studies.

Post-study measures. Participants completed demographic questions and questions about their familiarity with Chinese culture (1 = none and 4 = a lot) and their close relationship with Chinese people (1 = strongly disagree and 7 = strongly agree) and Chinese students (1 = strongly disagree and 7 = strongly agree). Participants reported a moderate level of familiarity with Chinese culture (e.g., "How familiar are you with Chinese culture?"; $M = 2.25$, $SD = 0.69$) and overall low levels of close relationships with Chinese people (e.g., "I have close relationships with people from China"; $M = 2.63$, $SD = 1.78$).⁶

⁶None of those variables influences subsequent analyses.

Results

Strategy of data analysis. Because participants were asked to rate both the Chinese values and the American values (which might strongly reflect their own values), we implemented a multilevel accuracy model in which both the rated Chinese values and the rated American values were introduced as predictors of true Chinese values, as a function of value type.

We implemented the following model:

$$\begin{aligned} \text{TrueVal}_{ij} = & \beta_{0j} + \beta_{1j}\text{RatedValChinese} \\ & + \beta_{2j}\text{RatedValAmericain} + \beta_{3j}\text{TypeVal} \\ & + \beta_{4j}\text{RatedValChinese} \times \text{TypeVal} \\ & + \beta_{5j}\text{RatedValAmericain} \times \text{TypeVal} \\ & + u_{1j}\text{RatedValChinese} \\ & + u_{2j}\text{RatedValAmericain} + u_{3j}\text{TypeVal} \\ & + u_{4j}\text{RatedValChinese} \times \text{TypeVal} \\ & + u_{5j}\text{RatedValAmericain} \times \text{TypeVal} + e \end{aligned}$$

with β_{0j} as fixed intercept, β_{1j} to β_{5j} as fixed regression weights, u_{1j} to u_{5j} as random effects, and e as residual. Value type was coded -1 for individualistic values and $+1$ for collectivistic values. The parameters of interest are β_{1j} , denoting the overall accuracy; β_{2j} , which expresses the degree to which the rated Americans values were good predictors of true Chinese values; β_{4j} , which denotes the extent to which the accuracy deepened on value type; and β_{5j} , which denotes the extent to which the predictive power of American values deepened on value type. We will again report analyses when using the true Chinese values in 2001 (old values) and in 2015 (new values).

Intercultural accuracy⁷. The overall accuracy index was negative, significantly different from 0 for the old values, $B = -.052$, $SE = .022$ ($\beta = -.055$), $t = -2.36$, $p = .02$, and not significant when considering the new values, $B = -.029$, $SE = .018$ ($\beta = -.032$), $t = -1.60$, $p = .11$. Similar to MBA and British students, the American Mturk participants' intercultural accuracy was again poor and, interestingly, in the opposite direction of the true values. This could suggest that because participants were asked to reflect on their own and their group values, they were more inclined to see the Chinese values in opposition to their own.

Intercultural accuracy was not influenced by value type for the old values, $B = -.030$, $SE = .022$ ($\beta = -.076$), $t = -1.34$, $p = .18$. However, the accuracy index for the collectivistic values was negative and significant (e.g. higher inaccuracy), $B = -.082$,

⁷As in the previous studies, we did not find significant differences in our effects among self-identified American-Asian and American non-Asian participants; therefore, we report the results for the entire sample (93 participants).

$SE = .033$ ($\beta = -.087$), $t = -2.49$, $p = .01$, and non-significant for the individualistic values, $B = -.023$, $SE = .030$ ($\beta = -.024$), $t = -.76$, $p = .45$.

Intercultural accuracy was influenced by value type for the new values, $B = -.055$, $SE = .018$ ($\beta = -.146$), $t = -2.98$, $p = .003$: the accuracy index for the collectivistic values was negative (e.g. higher inaccuracy) and significant, $B = -.083$, $SE = .027$ ($\beta = -.092$), $t = -3.07$, $p = .002$, and not significant for the individualistic values, $B = .026$, $SE = .024$ ($\beta = .029$), $t = 1.06$, $p = .29$. This pattern suggests that Americans' accuracy for Chinese collectivistic values, although significant, was in opposition to the true values of Chinese—participants were more inaccurate about predictions about collectivistic values, see Table 2. The negative accuracy scores suggest that the collectivistic values were lower than those predicted by participants. As also suggested by the descriptive statistics shown in Table 1, Americans saw the Chinese students as more collectivistic than they really were.

Projection. First, we tested if Americans projected their values more onto the Chinese (outgroup) as compared to onto the Americans (ingroup). To test this hypothesis, we used a multilevel model in which we predicted the *Chinese-/American-rated values* using *Americans' self-rated values*, the *value type*, and their *interaction*. We found a strong and significant relation between American self-rated values and predicted Chinese values, $B = 5.447$, $SE = 1.449$ ($\beta = .095$), $t = 3.76$, $p = .001$ (outgroup projection); however, it was weaker than the relation between American self-rated values and predicted American values, $B = 10.341$, $SE = 1.361$ ($\beta = .185$), $t = 7.60$, $p = .001$ (ingroup projection). This finding is line with previous results showing that people project more onto ingroups than onto outgroups. Projection was not influenced by value type, $B = 1.036$, $SE = 1.449$ ($\beta = .028$), $t = .715$, $p = .47$ (outgroup projection), $B = 1.002$, $SE = 1.361$ ($\beta = .028$), $t = .736$, $p = .46$ (ingroup projection).

Projection and intercultural accuracy. We tested whether the degree of projection onto the outgroup is related to accuracy and also whether this relation depended on the value type. To do so, we computed two independent accuracy and projection scores. The accuracy score was computed as the absolute difference between true Chinese values and predicted Chinese values. The projection score was computed as the absolute difference between self values and predicted Chinese values. In a multilevel model, we used as *criterion the accuracy score* and as *predictors projection, value type*, and their *interaction*.

This analysis showed that greater projection was associated with higher accuracy, $B = .167$, $SE = .023$ ($\beta = .173$), $t = 7.17$, $p = .001$ (old values), $B = .308$, $SE = .024$ ($\beta = .303$), $t = 13.01$, $p = .001$ (new values). As expected, the relation was stronger for the new values as compared to the old ones. The relation

between projection and accuracy was positive and significant for the collectivistic values when considering the old values, $B = .054$, $SE = .023$ ($\beta = .093$), $t = 2.33$, $p = .02$, and for the individualistic values when considering the new values, $B = -.061$, $SE = .024$ ($\beta = -.100$), $t = -2.58$, $p = .01$.

Discussion

This study showed that participants did not project differently as a function of value type (as the optimal distinctiveness hypothesis would suggest), but they rather used projection as an overall inferential strategy (as the social projection hypothesis suggest). However, even if projection did not differ between values, its consequence on accuracy depended on value type. More specifically, social projection among Americans was associated with greater accuracy when making predictions for the older Chinese collectivistic values and for the current Chinese individualistic values. In the past, Chinese were more collectivistic; thus, by using projection on this dimension, Americans were more accurate than when projecting individualistic values. As Chinese become more individualistic over time, social projection processes facilitated greater intercultural accuracy on individualistic values for the new values as compared to the old values. As revealed in Table 1, in 2015, the Chinese and Americans equally endorsed individualistic values: 73.33% of the Chinese and 73.84% of the American sample surveyed endorsed individualism in 2015. With regard to collectivism, the means reveal an interesting trend suggesting a higher mean for Americans (in line with Parker and colleagues' 2009 finding): 47.19% of Americans surveyed in 2015 endorsed collectivism as compared to only 42.41% of the Chinese. This is a point we will return to in the General Discussion. Overall, Study 2 provides convincing empirical evidence that social projection on values overlapping between ingroup and outgroup members is associated with increased accuracy on those values.

Study 3: Testing for Causality

Study 3 was designed to causally induce social projection and test its effect on intercultural accuracy. We predicted that manipulated similarity with the Chinese (facilitating social projection processes) would increase intercultural accuracy. Moreover, we expected projection to enhance accuracy more when cultural values highly overlapped between ingroup and outgroup members than when they greatly differed. In Study 2, projection enhanced accuracy on collectivistic values because those values overlapped more with Americans values in 2001. Projection enhanced accuracy on individualistic values because those values overlapped more with American values in 2015. We therefore expected intercultural accuracy

to be influenced both by the manipulated similarity and by the value type.

Study 3 also explores the external validity of projection and accuracy by testing whether greater accuracy increases the desire for future relationships with outgroup members.

Method

Participants. Via Mturk, 318 American participants were recruited to participate in a study about personal values and beliefs. Ninety-four participants did not follow the study instructions or failed two of the comprehension checks administered. Because they did not provide adequate responses, we were unable to form reliable measures of accuracy and judgment confidence; thus, we removed their responses from the final dataset. The resulting sample consisted of 224 participants (female = 69.4%; $M_{\text{age}} = 37$). Of these, 96.3% were American citizens; 77.7% identified themselves as White, 5.3% as Asian⁸, 4.1% as Hispanic, 9.5% as African American, and 3.2% as Other.

Procedure. *Personal endorsement of values.* Participants received the same instructions and protocol as in Study 2.

Dot estimation task. Participants completed the same filler task as in Study 2.

Manipulation. Participants were randomly assigned to an induced similarity manipulation or control condition. In the induced similarity condition, participants were requested to think about a typical Chinese student (what his/her day might look like, the type of everyday interactions he/she might have) and to describe the similarity with their own everyday activities in a few sentences (Toma et al., 2012). Participants in the control condition were asked to take a few moments to think about their typical day.

Outgroup and ingroup values. Next, participants were asked to predict the values of the two groups. Using the same protocol as in Study 2, they made their predictions about Chinese students' top 10 values and about those of Americans.

Interest in a future relationship. Using a scale from 1 to 7 (1 = not at all and 7 = very much), participants next were asked to respond to the following two statements: "I would be interested in working on tasks with a typical Chinese student" and "I would be interested in having a close relationship with a typical Chinese student." Individual participants' responses to the two items were averaged to create a measure of interest in a future relationship with a Chinese student (Cronbach's $\alpha = .92$).

Demographics. At the end of the study, participants reported their prior interactions with Chinese

people and Chinese students and their familiarity with Chinese culture and then answered the same demographic questions as in Study 2.

Results

Manipulation check. A one-way ANOVA revealed that participants in the similarity condition felt more similar to Chinese students ($M = 2.28$, $SD = 1.03$) than did participants in the control condition ($M = 2.85$, $SD = 1.11$), $F(1, 240) = 17.06$, $p < .001$, $\eta^2 = .07$.

Strategy of data analysis. We again implemented a multilevel accuracy model in which the *rated Chinese values* (level-1) were introduced as predictors of *true Chinese values* (level-1) as a function of value type (level-1) and manipulated condition (level-2).

We implemented the following model:

$$\begin{aligned} \text{TrueVal}_{ij} = & \beta_{0j} + \beta_{1j}\text{RatedValChinese} + \beta_{2j}\text{Condition} \\ & + \beta_{3j}\text{TypeVal} + \beta_{4j}\text{RatedValChinese} \\ & \times \text{TypeVal} + \beta_{5j}\text{RatedValChinese} \\ & \times \text{Condition} + \beta_{6j}\text{Condition} \times \text{TypeVal} \\ & + \beta_{7j}\text{RatedValChinese} \times \text{Condition} \\ & \times \text{TypeVal} + u_{1j}\text{RatedValChinese} \\ & + u_{2j}\text{TypeVal} + u_{3j}\text{RatedValChinese} \\ & \times \text{TypeVal} + e \end{aligned}$$

with β_{0j} as fixed intercept, β_{1j} to β_{7j} as fixed regression weights, u_{1j} to u_{3j} as random effects, and e as residual. Value type was coded -1 for individualistic values and $+1$ for collectivistic values. The similarity condition was coded $+1$ and the control condition was coded -1 . The parameters of interest are β_{1j} , denoting the overall accuracy; β_{4j} , expressing the degree to which accuracy depended on value type; β_{5j} , expressing the degree to which accuracy depended on the manipulated condition; and β_{7j} , denoting the extent to which accuracy depended on condition and value type. We will first report analyses when using the true Chinese values in 2001 (old values) and then in 2015 (new values).

Intercultural accuracy. When using the old values as criterion, the overall accuracy was poor and not significantly different from 0, $B = .014$, $SE = .013$ ($\beta = .016$), $t = 1.11$, $p = .27$. We found a significant interaction with value type, $B = .042$, $SE = .013$ ($\beta = .107$), $t = 3.38$, $p = .001$, suggesting that overall accuracy for the collectivistic values was higher than for the individualistic values using the old values.

Intercultural accuracy did not depend on condition, $B = .018$, $SE = .013$ ($\beta = .046$), $t = 1.49$, $p = .14$. Importantly, we did find the hypothesized three-way interaction (value type \times accuracy \times condition), $B = .026$, $SE = .013$ ($\beta = .065$), $t = 2.004$, $p = .041$. We

⁸Analyses of accuracy scores of Asian participants relative to non-Asian participants are reported in the supplement.

further decomposed this three-way interaction separately for the similarity and for the control condition. In the similarity condition, accuracy was marginally significant, $B = .032$, $SE = .018$ ($\beta = .036$), $t = 1.83$, $p = .06$, and also depended on the value type, $B = .068$, $SE = .018$ ($\beta = .172$), $t = 3.88$, $p < .001$. More specifically, accuracy was positive, significant, and higher for the collectivistic values, $B = .101$, $SE = .021$ ($\beta = .110$), $t = 3.91$, $p < .001$, than for the individualistic values, for which accuracy was negative and non-significant, $B = -.039$, $SE = .022$ ($\beta = -.049$), $t = -1.50$, $p = .13$. In the control condition, accuracy was negative and non-significant, $B = -.004$, $SE = .018$ ($\beta = -.005$), $t = -.24$, $p = .81$, and did not depend on the value type, $B = .016$, $SE = .017$ ($\beta = .042$), $t = .93$, $p = .35$. Figure 1 illustrates the standardized coefficients for accuracy on old values as a function of condition and separately for individualistic and collectivistic values.

When using the new values as criterion, the overall accuracy was again non-significant, $B = -.014$, $SE = .011$ ($\beta = -.019$), $t = -1.34$, $p = .18$. Central to our hypothesis, we found evidence for the hypothesized accuracy \times condition interaction using the new values, $B = .025$, $SE = .011$ ($\beta = .072$), $t = 2.29$, $p = .02$, suggesting that accuracy in the similarity condition was positive and higher, $B = .010$, $SE = .015$ ($\beta = .013$), $t = .68$, $p = .50$, than in the control condition, where it was negative, $B = -.039$, $SE = .015$ ($\beta = -.051$), $t = -2.54$, $p = .01$. Accuracy again depended on value type by condition (three-way interaction), $B = -.022$, $SE = .011$ ($\beta = -.066$), $t = -2.09$, $p = .04$. By decomposing this three-way interaction, we found that accuracy did not depend on value type in the similarity condition, $B = -.015$, $SE = .015$ ($\beta = -.044$), $t = -.99$, $p = .32$, but did depend on value type in the control condition, $B = .030$, $SE = .015$ ($\beta = .088$), $t = 1.95$, $p = .05$ (lower accuracy for collectivistic than individualistic

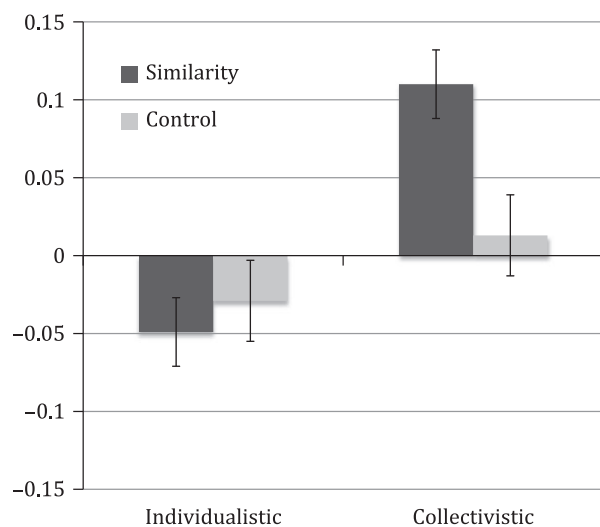


Fig. 1: Accuracy scores (standardized betas) on individualistic and collectivistic values by condition for predictions regarding old Chinese values (Study 3)

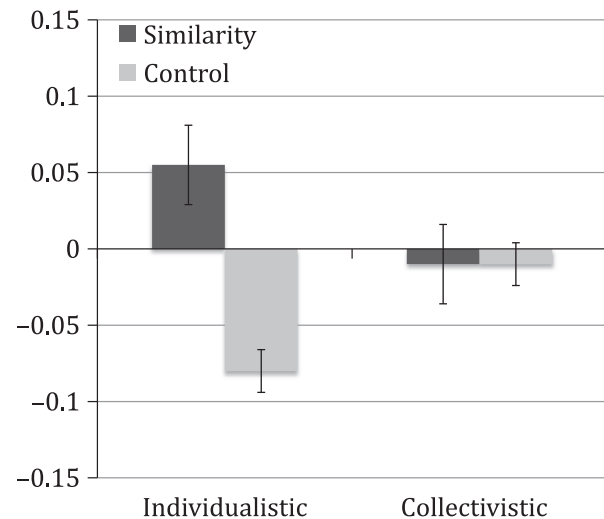


Fig. 2: Accuracy scores (standardized betas) on individualistic and collectivistic values by condition for predictions regarding new Chinese values (Study 3)

values using the new values). Figure 2 illustrates the standardized coefficients for accuracy on new values as a function of condition and separately for individualistic and collectivistic values.

Accuracy and interest in a future relationship. To examine the predictive validity of the accuracy measures, we further explored whether higher levels of intercultural accuracy were associated with participants' general preferences in a future relationship with a Chinese student. Higher overall accuracy was associated with higher interest in future relations with a Chinese student, $B = .005$, $SE = .0001$ ($\beta = .088$), $t = 5.81$, $p < .001$, using the new values, but not when using the old values, $B = .001$, $SE = .0001$ ($\beta = .023$), $t = 1.53$, $p = .12$. The association between accuracy and interest in future relations was particularly strong in the similarity condition, $B = .004$, $SE = .0001$ ($\beta = .118$), $t = 4.47$, $p < .001$ (old values), $B = .044$, $SE = .001$ ($\beta = .113$), $t = 4.61$, $p < .001$ (new values). Overall, our results provide direct evidence that accuracy on values can be enhanced through induced social projection processes, and that higher accuracy is associated with higher interest in relations with Chinese, especially when values are similar. At the same time, the fact that overall accuracy using new values is associated with greater interest in a future relationship with outgroup members is in line with past research suggesting a strong association between the two (Li & Hong, 2001)

General Discussion

In four studies, we examined two research questions concerning accuracy in intergroup judgments and found convergent empirical support for our hypotheses. First, using participant samples with variable experience with the outgroup, we found that American

and British perceivers showed higher levels of accuracy on collectivistic relative to individualistic values. Second, greater similarity between ingroup and outgroup cultural values was associated with greater intercultural accuracy. As predicted, social projection processes were linked with greater accuracy for collectivistic values in 2001 and for individualistic values in 2015, probably due to the concomitant use of stereotypes and projection when judging collectivistic values and the shift that had occurred in endorsement of individualistic values among the Chinese by 2015. When social projection processes were manipulated in Study 3, we found this effect replicated; furthermore, higher levels of overall accuracy using new criterion from China were associated with greater interest in fostering relations with the Chinese.

These cumulative findings advance theoretical knowledge on social projection and intergroup judgments in several important ways. First, our findings advance previous research on intergroup judgment accuracy. Past research examining intergroup social judgments revealed differential effects of accuracy in values for majority versus minority groups (Gelfand & Christakopoulou, 1999; Li & Hong, 2001). Our research extends those results in an intercultural context and additionally shows that the type of values influences accuracy. Furthermore, our findings reveal the role of projection on intergroup judgment accuracy, which may reconcile past research showing no evidence of social projection with outgroup members (Cho & Knowles, 2013), while other work revealed the contrary (Li & Hong, 2001). Building on this research, our findings suggest that focusing on similarities between the ingroup and the outgroup on overlapping cultural values can be beneficial because it actually improves accuracy and the desire for future relationships.

Second, our research contributes to ongoing research on social projection in intergroup relations (Clement & Krueger, 2002; Robbins & Krueger, 2005) by unveiling the moderating factors of outgroup social projection. It shows that people can project onto outgroups even if there is no imagined contact (Crisp, Stathi, Turner, & Husnu, 2009) or intergroup cooperation (Riketta & Sacramento, 2008). It also suggests that people do not necessarily project differently on different dimensions to ensure optimal distinctiveness, even if there is a context in which there is an asymmetry in power position between Americans and Chinese (Toma, Yzerbyt, Corneille, & Demoulin, 2017). In line with Li and Hong (2001), we find that social projection can facilitate accuracy when there is some overlap between the cultural values of ingroup and outgroup members. This consistent finding in our article is an important addition to social projection and accuracy theory. We also found new evidence that social projection onto outgroup members can be experimentally induced and facilitate judgment accuracy on values highly endorsed by both ingroup and outgroup members. This, in turn, had a positive effect on individuals'

interest in future relationships with outgroup members. Our findings further contribute to ongoing social-psychological theory by revealing that American/British perceivers project their individualistic values onto outgroup members, suggesting that social projection processes could trump optimal distinctiveness motives in intercultural judgments. It could be that greater clarity in appraisal about the preferences and values of people from other cultures facilitates interest in forming relationships with outgroup members. We believe this finding is yet another important avenue for future research that has important practical implications for solving intergroup conflicts.

Furthermore, the results from the U.S./British and Chinese samples collected in this study suggest that East versus West dichotomizations (see Earley, 1993; Montgomery, 2010; Triandis, 1995) are no longer relevant. In fact, in our studies, American and Chinese perceivers endorsed collectivistic values to a similar extent. Moreover, the U.S./British samples and the Chinese data from 2015 revealed that the Chinese are endorsing more individualistic values and, in fact, are more similar in individualistic value endorsement to Americans/British. In addition, recent research shows that regional variations in China due to economic activity may affect interdependent views of the self and more holistic cognitive tendencies (e.g., perhaps a lower level of individualism) (Talhelm *et al.*, 2014). In other words, the pattern of individualism in 2015 observed among Chinese students in Beijing may differ from those observed by rice farmers in China (given the high levels of interdependence and coordination this type of farming requires). In line with recent theories proposing the integration of a broader set of social categories into the study of culture (Cohen & Varnum, 2016), we suggest that future research may seek to examine intercultural accuracy among different regions in China (e.g., urban students vs. rural farmers).

Furthermore, our study results reveal that overall accuracy has not improved in general but rather has improved for people high on social projection. As observed in Studies 2–3, accuracy was enhanced when U.S./British and Chinese values highly overlapped. This finding is consistent with past work by Li and Hong (2001) and further suggests that high overlap across values may not be a sufficient condition for intercultural accuracy. Future research may be needed to understand the mechanisms deterring intercultural accuracy in the face of similarity, such as affective processes.

Finally, our results contrast with prior work on the role of accuracy in emotion recognition (Elfenbein & Ambady, 2003) by revealing that greater experience with Chinese culture is not associated with more accurate judgments on cultural values. Knowing more about outgroup members does not improve judgment accuracy if people are unable to infer similarities between themselves and the outgroup. A recent study (Kidd & Castano, 2013) revealed that reading literary fiction (rather than popular fiction or literary

nonfiction) improved participants' results on tests that measured social perception and empathy, which are crucial to "theory of mind"—the ability to guess accurately what another person might be thinking or feeling, a skill humans start to develop around age four. Those findings and our present results suggest that processes that reduce egocentric processes yet promise "perpetual union" with another mind are the most optimal for achieving judgment accuracy (Eyal, Steffel, & Epley, 2018).

Limitations and Future Research

Despite the merits of the present research, it also has some limitations. First, we examined accuracy only among Westerners who judge the Chinese. At the same time, we find convergent evidence with past research revealing that projection processes can facilitate intergroup accuracy. Furthermore, we examined our effects on criterion values at two different time points, which revealed trends consistent with recent research revealing shifts in Chinese cultural values (Kwan et al., 2009). Second, we used only one type of values task. Other studies have also examined other types of behavioral task, such as helping behaviors (Bohns et al., 2011). However, we believe that different tasks assess different types of intercultural knowledge and skills among perceivers; hence, relying on a specific domain allowed us to compare our findings across different samples. Future research may also gain insights by manipulating projection using different methods (Ames et al., 2013). In our current studies, we manipulated projection by asking participants to generate similarities between themselves and a Chinese student. Future research could explicitly ask participants not to rely on personal values when judging outgroup members' values. In addition, distilling the role of social projection from perspective-taking processes is another important direction for expanding our understanding of the underlying cognitive processes facilitating inter- versus intragroup accuracy.

Another interesting area for future research is distilling the casual mechanisms for greater intercultural accuracy for collectivistic values than individualistic values. One reason, based on optimal distinctiveness theory (Brewer, 1991) suggests that American/British participants would be less prone to project on values that are more distal from their core values (individualistic values). Hence, future research should investigate cultural distance—the degree of difference in cultural values (Shenkar, 2001) as a potential moderator for intercultural accuracy.

Other directions for future research include examining other cultural values, such as those found in honor cultures (Cohen, Nisbett, Bowdle, & Schwarz, 1996). In the same vein, it would be interesting to examine cross-nation and within-nation differences in accuracy. For example, it may be that Russian participants would be more inclined to project to the Chinese than to Indians. Other dimensions on which accuracy may

differ include social class and religion (Cohen & Var-num, 2016). For example, individuals with low socioeconomic status (SES) have higher empathic accuracy; however, it is unknown whether this ability would translate into intercultural accuracy. Furthermore, greater affluence has been linked to individualism (Greenfield, 2013). As such, while white-collar individuals are expected to be more similar to individualistic cultures, they may perhaps be less skilled in empathic accuracy, which may reduce their intercultural accuracy. Future research should continue to investigate whether low versus high SES moderates the effects observed on intercultural accuracy among Americans and British individuals in our studies.

Conclusion

The present research reveals that, overall, perceivers from individualistic Western cultures exhibit low levels of intercultural accuracy on cultural values, but that their accuracy levels are improved via social projection. Future research should continue to examine contingencies for outgroup projection and how projection may shape the accuracy of people's intercultural judgments.

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Conflict of Interest

The authors confirm they have no conflict of interest to declare. Authors also confirm that this article adheres to ethical guidelines specified in the APA Code of Conduct as well as the authors' national ethics guidelines.

Supporting Information

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