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Culture Modifies the Operation of Prime-to-Behavior Effects

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## Abstract

Culture affects the extent to which people focus on other people or on the situation in drawing inferences. Building on recent research showing that perceptions of others and situations can mediate prime-to-behavior effects, we tested whether culture would modify both the mechanism and the outcome of primed constructs on behavior. Easterners and Westerners were primed with competitiveness or cooperativeness before playing a social dilemma game with an ambiguously or unambiguously competitive player. Results indicated that the primes had different effects on the social dilemma decisions of Easterners and Westerners and that these effects were due to the different consequences the primes had for Easterners' and Westerners' perceptions of the other player and construals of the situation.

People from Eastern and Western cultures differ in the inferences they draw about their environment. Easterners are more likely to attribute a given action to situational factors than are Westerners (Choi, Nisbett, & Norenzayan, 1999; Morris & Peng, 1994), possibly due to a greater initial focus on the situation. The present paper tests whether this difference in attribution tendencies could modify the nonconscious influence of construct accessibility on behavior. Recent research has shown that primed social constructs can influence behavior through their effects on people's perceptions of others and situations, and that the specific behavior that results can depend on the focus of the perceiver (Smeesters, Wheeler, & Kay, 2010). If culture were to affect whether primed constructs are used to disambiguate other people versus situations, it could potentially modify both the mechanism and outcome of prime-to-behavior effects.

#### *Culture and Attribution*

People from Western cultures frequently ignore situational constraints and attribute actions to the actor's disposition (Ross, 1977). This has been ascribed to Westerners' tendency to focus initially on the actor's behavior and only subsequently engage in effortful correction that incorporates the constraints of the situation (Gilbert & Malone, 1995). This tendency has been shown to be greatly reduced among Easterners (Choi et al., 1999), possibly due to their different implicit social theories about agency (Morris & Peng, 1994). Furthermore, whereas cognitive load has been shown to magnify Westerners' focus on dispositions, it has no effect on Easterners' attributions, consistent with the idea that Easterners automatically consider situational information in forming impressions (Knowles, Morris, Chiu, & Hong, 2001).

*Construct Accessibility, Person Perceptions, and Situation Construals*

One influence on the impressions people form of others is construct accessibility (e.g., Higgins, Rholes, & Jones, 1977). When a target requires interpretation, accessible constructs serve as inputs that can bias resulting perceptions. For example, being primed with competitiveness can lead one to perceive an ambiguous target as more competitive (Smeesters, Wheeler, & Kay, 2009). The effect of construct accessibility on person perceptions is observed primarily when the target is ambiguous, because it is these targets that require interpretation. Through the same interpretation process, accessible constructs can bias perceptions of ambiguous situations and their attendant norms when people are led to focus on the situation (Kay & Ross, 2003).

Recent research has shown that perceptions of even unambiguous targets can be biased when the actor's behavior is compared with that promoted by the situation (Kay, Wheeler, & Smeesters, 2008). When unambiguous targets are compared against a standard, such as a situational norm, it can lead to contrast in perceptions (e.g., Stapel & Koomen, 2001), consistent with Kelley's (1967) augmenting and discounting principles. Consider a person who acts unambiguously competitively in a given situation. When the competitive behavior takes place in what is perceived to be a cooperative situation, the person is working against situational norms, and is therefore perceived to be highly competitive (augmenting). When the competitive behavior takes place in a competitive situation, however, the person's behavior may be caused, at least in part, by congruent situational norms, and the person is therefore perceived to be less competitive (discounting). Hence, when a person's behavior is unambiguous, one's perceptions of his

or her characteristics can vary inversely with one's construal of the situation, due to the perceived influence of situational forces on the person's actions.

Of course, this can only occur to the extent that people consider the situation when interpreting the actor's behavior. That is, if people ignore the situation completely and instead focus on the actor, they are unlikely to take situational forces into account. In this case, accessible constructs should directly bias perceptions of the actor. For example, a person who ignores the situation should directly apply a "competitive" prime to an ambiguously competitive actor. It is only when people focus initially on the situation that (a) construals of the situation should be biased by the prime, and (b) perceptions of unambiguous actors should contrast with those construals. For example, a person who initially focuses on the situation should first apply a "competitive" prime to the situation. Then, when forming a perception of an unambiguously competitive actor, the situation would be used to discount that competitive behavior, making the actor seem less competitive. Hence, situation focus and actor ambiguity can jointly determine whether and how person perceptions are biased by accessible constructs.

An untested possibility is that culture could determine how primed constructs affect their person perceptions and situation construals. Prior research on culture and attribution has tested the relative weight Easterners and Westerners place on situational versus dispositional causes. For example, participants have been asked whether a given action was influenced by internal factors or influenced by external factors (Morris & Peng, 2004), and Easterners are more likely than Westerners to identify external factors as causes. An untested question concerns whether Easterners and Westerners would use accessible constructs differently in interpreting an actor's behavior within a given

situation. There is no research, to our knowledge, testing whether (1) Easterners are more likely to apply accessible constructs (e.g., “competitive”) to situations, whereas Westerners are more likely to attribute accessible constructs to actors, or (2) as a result, Easterners and Westerners form different perceptions about the characteristics of situations and persons (e.g., as competitive). Given the apparent greater automatic focus of Easterners on situations, it is plausible that these patterns of attribution could occur and form the basis of subsequent behavior.

#### *Prime-to-Behavior Effects*

Primed constructs have been shown to direct not only perceptions of others and of situations, but also to direct behavior. Recent research has highlighted the role that perceptions of others and of the situation can play in determining the outcome of prime-to-behavior effects. In one illustrative study (e.g., Smeesters, et al., 2009), people who were primed with unkindness before playing a reciprocal dictator game (1) perceived their partner to be more unkind, and (2) allocated less to that person (due to their perceptions of that person being unkind). Perceptions of situational norms can also mediate the effects of primes on choices in economic games (Kay & Ross, 2003). If culture were to modify whether and how primes affect perceptions of others or situations, it could also modify the prime’s effects on behavior, at least insofar as these perceptions served as an input into behavior.

The present study tested this idea. We primed Eastern and Western participants with cooperation or competition before having them play an interdependent social dilemma game. The other player was described as either ambiguously or unambiguously competitive. Because Westerners tend not to focus on the situation (but rather more on

others), one would expect primes to directly bias perceptions of the other player, but only when he is sufficiently ambiguously competitive as to require interpretation. Behavior seems likely to follow such perceptions. Thus, we hypothesized that Westerners primed with competition would perceive the ambiguous other as more competitive and behave more competitively towards the other compared to participants primed with cooperation. Thus, for Westerners interacting with ambiguous targets in this context, we predicted: primes  $\rightarrow$  [A] perceptions of other  $\rightarrow$  [A] behavior, where [A] represents an assimilation effect. When the other is unambiguously competitive (and therefore does not require interpretation), primes were not expected to bias the perception of the other; rather, we hypothesized that Westerners' behavior would only be guided by the unambiguously competitive description of the other.

Easterners were hypothesized to exhibit a more complex pattern. If Easterners' were to direct their initial attention to the situation, they would construe the situation differently depending on the prime. Thus, we hypothesized that they would construe an ambiguous situation as more competitive (cooperative) when exposed to competitive (cooperative) primes. Whether those construals go on to bias perceptions of the other player should depend on the player's ambiguity. Situation construals should affect perceptions of others only when the other's behavior is sufficiently unambiguous to be compared against them. When the other player is unambiguously competitive, this behavior can be contrasted with the characteristics of the situation. Hence, when Easterners compare the actor's behavior with these construals, this should lead to a contrast effect on person perceptions. Thus, for Easterners interacting with an unambiguous other, we predicted: prime  $\rightarrow$  [A] situation construals  $\rightarrow$  [C] person



perceptions → [A] behavior, where [C] represents a contrast effect. When the player's behavior is ambiguous, it cannot be contrasted with the characteristics of the situation, and so should remain unaffected by primes when people focus on the situation (Kay et al., 2008). In this case, if the prime were to have any effect at all, it should occur through its effect on Easterners' construals of the situation. Thus, for Easterners interacting with an ambiguous other, we predicted: prime → [A] situation construals → [A] behavior.

### *Method*

*Participants.* Two hundred and one Dutch-born (98) and Chinese-born (103) undergraduates participated in exchange for course credit. They were randomly assigned to a prime (cooperation vs. competition) by player ambiguity (ambiguously competitive vs. unambiguously competitive) between-participants design.

*Procedure.* Participants first unscrambled 24 English sentences, 12 of which contained words either related to cooperation (e.g., cooperate, collaborate, help, share, support) or competition (e.g., compete, win, rival, oppose, contest) to unconsciously activate these constructs (Srull & Wyer, 1979). They then played a one-trial social dilemma game, ostensibly with another person present in the lab. The game task offered the participant a choice between seven options, varying systematically from least to most cooperative (cf., Van Lange, Ouwerkerk, & Tazelaar, 2002). The social dilemma was presented as a give-some situation in which each participant could choose between giving no coins, giving one coin, giving two coins, up to maximally giving six coins to the other. Each coin held by the participant had a value of € 0.50 to the participant and a value of € 1.00 to the partner. Similarly, each coin held by the partner had a value of € 0.50 to the partner and a value of € 1.00 to the participant. They were told the other person would

simultaneously make an allocation, such that no one would be informed about the other's choice before making his or her own choice.

Prior to setting their allocations, participants learned that the other player had already played the game against six other individuals, and they received information about the six choices that this person had made (cf., Van Lange, 1999). In the ambiguously competitive condition, three choices were rather cooperative (4, 5, and 5 coins) and three choices were rather competitive (1, 1, and 2 coins). In the unambiguously competitive condition, two choices were rather cooperative (4 and 5 coins) and four choices were rather competitive (1, 1, 2, and 2 coins).<sup>1</sup>

Participants then indicated their construal of the situation on two 7-point scales (cf., Kay & Ross, 2003; Kay, et al., 2008): “To what extent does the game task seem to be competitive versus cooperative?” (1 = *very competitive* and 7 = *very cooperative*), and “Do you think the game task is better described as adversarial or friendly?” (1 = *very adversarial* and 7 = *very friendly*). They also indicated their perception of the other player on two 7-point scales with endpoints 1 (*very competitive*) and 7 (*very cooperative*) and 1 (*very individualistic*) and 7 (*very prosocial*). Finally, participants indicated how many coins (from 0 to 6) they would like to allocate to the other.<sup>2</sup>

A funnelled debriefing procedure indicated no suspicion among participants regarding the purpose of the study, any relationships between the different experimental phases, or the scrambled sentences task.

### *Results*

We conducted a 2 (cultural group: Westerners vs. Easterners)  $\times$  2 (prime: cooperation vs. competition)  $\times$  2 (ambiguity: ambiguously competitive vs.

unambiguously competitive) between-participants ANOVA on (a) situation construals ( $r = .87$ ), (b) person perceptions ( $r = .85$ ), and (c) allocations.<sup>3</sup>

*Situation construal.* Results supported our hypothesis that the primes would affect Easterners', but not Westerners' construal of the situation. A main effect of prime,  $F(1, 192) = 17.05, p < .01$ , was qualified by a significant cultural group  $\times$  prime interaction,  $F(1, 192) = 9.88, p < .05$  (see Figure 1). Consistent with the idea that Easterners would initially focus more on the situation, Easterners rated the situation as more cooperative following cooperation primes ( $M = 4.66, SD = 1.16$ ) than following competition primes ( $M = 3.69, SD = 1.08$ ),  $F(1, 192) = 27.14, p < .001$ , but Westerners' construals did not differ as a function of cooperation ( $M = 4.19, SD = 0.91$ ) and competition primes ( $M = 4.04, SD = 0.78$ ),  $F(1, 192) = 0.50, p = .48$ .

*Person perceptions.* Person perceptions showed a different pattern. Here we found a main effect of ambiguity,  $F(1, 192) = 70.34, p < .001$ , and three significant two-way interactions: a cultural group  $\times$  prime interaction,  $F(1, 192) = 8.95, p < .01$ , a prime  $\times$  ambiguity interaction,  $F(1, 192) = 21.31, p < .001$ , and a cultural group  $\times$  ambiguity interaction,  $F(1, 192) = 6.85, p = .01$ . More germane to our hypotheses, the omnibus test for our predicted three-way interaction was marginally significant,  $F(1, 192) = 2.84, p = .09$ . Given that we had clear a priori expectations for the attributions of Westerners and Easterners, we tested the interaction between prime and ambiguity for each of these groups (see Figure 2).

Recall that we expected that primes would bias Westerners' perceptions of ambiguous, but not unambiguous targets, because only the former require interpretation. This expectation was confirmed. The prime  $\times$  ambiguity interaction was significant for

Westerners,  $F(1, 192) = 4.22, p < .05$ . Westerners who were confronted with an ambiguously competitive other rated the other as more cooperative following cooperation primes ( $M = 4.52, SD = 0.99$ ) than following competition primes ( $M = 3.72, SD = 1.05$ ) (i.e., an assimilation effect),  $F(1, 192) = 7.01, p < .01$ . Prime did not affect the person perceptions of Westerners confronted with an unambiguously competitive other ( $M_{cooperation} = 2.41, SD_{cooperation} = 1.13$  and  $M_{competition} = 2.50, SD_{competition} = 0.73$ ),  $F(1, 192) = 0.08, p > .77$ .

Recall also that we expected that primes would bias Easterners' perceptions of unambiguous, but not ambiguous targets, because only the former are sufficiently concrete to be contrasted against (prime-biased) construals of the situation. This expectation was also confirmed. The significant prime  $\times$  ambiguity interaction for Easterners,  $F(1, 192) = 20.25, p < .001$ , indicated that prime did not significantly affect perceptions of an ambiguously competitive other ( $M_{cooperation} = 3.94, SD_{cooperation} = 1.14$  and  $M_{competition} = 3.54, SD_{competition} = 1.18, F(1, 192) = 1.86, p > .17$ , but did significantly affect perceptions of an unambiguously competitive other, who was rated as more cooperative following competition primes ( $M = 3.54, SD = 1.19$ ) compared to cooperation primes ( $M = 2.12, SD = 1.17$ ) (i.e., a contrast effect),  $F(1, 192) = 24.66, p < .001$ .

*Allocations.* The effects of the primes were not limited to perceptions. Analyses on allocations revealed main effects for prime,  $F(1, 192) = 5.42, p < .05$ , and ambiguity,  $F(1, 192) = 23.56, p < .01$ , which were qualified by the predicted three-way culture  $\times$  prime  $\times$  ambiguity interaction,  $F(1, 192) = 3.85, p = .05$  (see Figure 3). We decomposed

this three-way interaction into separate prime  $\times$  ambiguity analyses for Westerners and Easterners.

Westerners exhibited main effects of prime,  $F(1, 192) = 9.75, p < .01$ , and ambiguity,  $F(1, 192) = 16.69, p < .01$ , as well as a significant prime  $\times$  ambiguity interaction,  $F(1, 192) = 4.10, p < .05$ , that paralleled their perceptions of the other player. Westerners allocated more to the ambiguously competitive other when primed with cooperation ( $M = 4.12, SD = 0.93$ ) than when primed with competition ( $M = 2.92, SD = 0.76$ ) (i.e., an assimilation effect),  $F(1, 192) = 13.54, p < .01$ , but there was no effect on their allocations to the unambiguously competitive other ( $M_{competition} = 2.44, SD_{competition} = 0.71$  versus  $M_{cooperation} = 2.70, SD_{cooperation} = 1.11$ ),  $F(1, 192) = 0.58, p > .44$ .

Easterners also exhibited a main effect of ambiguity,  $F(1, 192) = 7.65, p < .01$ , as well as a prime  $\times$  ambiguity interaction,  $F(1, 192) = 23.69, p < .001$ . They allocated more to an ambiguously competitive other when primed with cooperation words ( $M = 3.70, SD = 1.32$ ) compared to competition words ( $M = 2.56, SD = 1.33$ ) (i.e., an assimilation effect),  $F(1, 192) = 12.77, p < .01$ , which parallels their situation construals. However, as predicted, this effect was reversed for the unambiguous other ( $M_{competition} = 3.04, SD_{competition} = 1.59$  versus  $M_{cooperation} = 1.96, SD_{cooperation} = 1.17$ ) (i.e., a contrast effect),  $F(1, 192) = 10.97, p < .01$ .

*Mediation analyses.* In the analyses above, we showed that primes affected Easterners', but not Westerners', construals of the situation. We also showed different effects for Easterners and Westerners on person perceptions and behaviors. These findings indicate that different processes underlie prime-to-behavior effects for Westerners and Easterners who interact with ambiguous or unambiguous others. To test

these mechanisms more formally, we conducted separate mediation analyses for Westerners and Easterners.

We expected that person perceptions would mediate the effect of prime on Westerners' allocations to the other, but only for those interacting with an ambiguously competitive player. We conducted a mediated moderation analysis using three regressions (Preacher, Rucker, & Hayes, 2007). In a first equation, we regressed prime, ambiguity, and the prime  $\times$  ambiguity interaction on the dependent variable (number of coins allocated to the other). Paralleling the analyses reported above, we observed a prime  $\times$  ambiguity interaction on allocations,  $\beta = 0.22$ ,  $t(94) = 2.64$ ,  $p < .05$ . In a second equation, we observed the same interaction on person perceptions,  $\beta = 0.17$ ,  $t(94) = 2.33$ ,  $p < .05$ . In a last step, we added person perceptions to the equation tested in the first step and found that person perceptions had a significant effect on allocations,  $\beta = 0.51$ ,  $t(93) = 5.05$ ,  $p < .01$ , whereas the prime  $\times$  ambiguity interaction on allocations dropped in significance,  $\beta = 0.13$ ,  $t(93) = 1.70$ ,  $p > .09$ . For a more fine-grained analysis, we examined the conditional indirect effects at both levels of the moderator (ambiguity). Person perceptions mediated the prime's effect on allocations in the ambiguously competitive other condition ( $z = 2.11$ ,  $p < .05$ ) but not in the unambiguously competitive other condition ( $z = 0.31$ ,  $p > .75$ ). Not surprisingly, because primes did not affect Westerners' perceptions of the situation, parallel analyses showed that situation construal did not mediate the effect for Westerners ( $zs < 1.07$ ,  $ps > .28$ ).

We conducted separate mediation analyses for Easterners in the ambiguously competitive condition and the unambiguously competitive condition, because we predicted different mediation paths in those conditions. Recall that in the ambiguously

competitive condition, we expected the effect of prime on allocations to be mediated by situation construal—that is, participants should have allocated more (less) in the cooperative (competitive) prime condition because they construed the situation as more cooperative (competitive). In the unambiguously competitive condition, participants exhibited contrast effects on person perceptions and behavior, both of which were presumably due to their assimilating situation construals. Hence, we expected the effect of prime on behavior in these cells to be mediated through both situation construal *and* person perception—that is, participants should have allocated less (more) in the cooperative (competitive) prime condition because they construed the situation as more cooperative (competitive) leading to a competitive (cooperative) perception of the other player.

Thus, for Easterners in the ambiguously competitive condition, we tested the following mediational path: prime  $\rightarrow$  situation construal  $\rightarrow$  allocation behavior. Prime had a significant effect on allocations to the other,  $\beta = 0.40$ ,  $t(50) = 3.11$ ,  $p < .01$ , and on situation construals,  $\beta = 0.33$ ,  $t(50) = 2.44$ ,  $p < .05$ . When we entered prime and situation construal as simultaneous predictors of allocations, situation construals significantly affected allocations,  $\beta = 0.66$ ,  $t(49) = 6.54$ ,  $p < .001$ , and the effect of prime dropped in significance,  $\beta = 0.19$ ,  $t(49) = 1.85$ ,  $p > .07$ . Tests verified that situation construals significantly mediated the effect of the prime on allocations ( $z = 2.26$ ,  $p < .05$ ). Not surprisingly, because prime had no effects on person perceptions in this condition, they did not mediate the effect of the prime on allocations ( $z = 0.94$ ,  $p > .34$ ).

For Easterners in the unambiguously competitive condition, we tested the predicted mediational path: prime  $\rightarrow$  situation construal (Mediator 1)  $\rightarrow$  person

perceptions (Mediator 2) → allocation behavior. This path involves two sequential mediators. We tested this mediation with an adapted mediation SPSS macro from Preacher and Hayes (2004; i.e., MEDTHREE, see also Hayes, Preacher, & Myers, 2010). As reported above, the direct effect of prime on the dependent variable (allocation to the other) was significant,  $\beta = -0.37$ ,  $t(48) = -2.73$ ,  $p < .01$ . The mediating path was then tested in four steps. In the first step, Mediator 1 (situation construals) was regressed on prime and shown to be significant,  $\beta = 0.49$ ,  $t(48) = 3.96$ ,  $p < .05$ . In the second step, Mediator 2 (person perceptions) was regressed on prime and was also significant,  $\beta = -0.54$ ,  $t(48) = -4.46$ ,  $p < .01$ . In a third step, Mediator 2 (person perceptions) was regressed on Mediator 1 (situation construals) and prime. This analysis showed that situation construals had a significant effect on person perceptions,  $\beta = -0.72$ ,  $t(47) = -7.59$ ,  $p < .01$ , whereas the significant effect of prime on person perceptions dropped in significance,  $\beta = -0.18$ ,  $t(47) = -1.91$ ,  $p > .06$ . In a fourth step, the dependent variable was regressed on Mediator 2, Mediator 1, and prime. This regression showed that person perceptions had a significant effect on allocations,  $\beta = 0.77$ ,  $t(46) = 4.12$ ,  $p < .01$ . When controlling for person perceptions, the effects of situation construals on allocations,  $\beta = 0.10$ ,  $t(46) = 0.53$ ,  $p > .60$ , and the effect of prime on allocations,  $\beta = 0.01$ ,  $t(46) = 0.04$ ,  $p > .96$ , were not significant. A follow-up test showed that this overall indirect path was significant ( $z = 2.87$ ,  $p < .01$ ).

### *Discussion*

In this paper, we showed some of the complex ways social variables can combine to determine how construct accessibility affects behavior. We built on previous research in showing that perceptions of situations and others in the environment can mediate



prime-to-behavior effects. We went beyond this prior work by showing the important moderating role played by culture. Easterners and Westerners were shown to differ in their initial focus on situations (vs. actors), and as a result, behave differently following exposure to subtle primes.

Three decades of research has made it clear that culture can exert deep and meaningful effects on how people construe and react to their social environments (Heine, 2010). There has been less research, however, examining how these differences can result in different step-by-step psychological processes. One difference in construal can lead to fascinating downstream differences in behavior, because it instigates a different chain of psychological processes. In this study, by combining recent insights from the social cognition and priming literatures – namely, that intervening perceptual processes can play a crucial role in the prime-to-behavior pathway (Smeesters, et al., 2010) – with well established findings in the cultural psychology literature implicating different default processes of social perception for Easterners and Westerners, we demonstrated that culture not only modifies how people make sense of their environments, but also affects how nonconscious inputs are translated into perceptions and behavior.

In this study, competitiveness primes led Westerners to act more competitively in a social dilemma game, but only when they interacted with an ambiguously competitive player. This was because the primes first biased their perceptions of the other player, which were in turn used as a determinant of their behavior. Competitiveness primes led Easterners to act more competitively when they interacted with an ambiguously competitive player, but the behavior of Easterners was driven by their prime-biased construals of the situation.

Most prior research has shown that perceptions of unambiguous persons are not biased by primed constructs, because it is only ambiguous persons that require the interpretive processes in which accessible constructs are used. In line with this idea, we showed that when Westerners played against an unambiguously competitive player, the primes had no effect on their behavior, presumably because they did not first bias perceptions of the other. By contrast, Easterners who played against an unambiguously competitive player were influenced by the competitiveness primes, but their behavior became more cooperative following such primes. Our analyses showed that this was because the primes made them view the situation as more competitive, and as a result, view the other player as more cooperative. That primes would lead Easterners to view an unambiguously competitive player as more cooperative and allocate more to him as a result is rather counterintuitive and difficult to predict without understanding the mechanisms that are the focus of this paper.

These findings provide several advances beyond the prior literature. First, they show that Easterners and Westerners use accessible constructs differently in forming impressions of others. Whereas previous research has shown that that Easterners and Westerners differ in the relative weight they give to situations and persons as causes of action (e.g., Morris & Peng, 1994), this work shows that they also differ in how their impressions are affected by primed constructs. The person perceptions of both Easterners and Westerners are affected by primes, but for different reasons and under different circumstances. This moves beyond a demonstration of relative weighting to elucidate the pathways of attention and their implications for ultimate perceptions of a target's personality. Second, they are the first to show prime-to-behavior effects mediated by

situation construals and person perceptions within the same experiment. Third, they provide the first evidence for an individual difference moderator of these mechanisms. Hence, these findings lend insight into the cognitive processes of Easterners and Westerners, the effects of culture on attribution, and a new moderator of both the outcome and the mechanism of prime-to-behavior effects.

We have observed, then, that the same prime leads to different behavioral outcomes with Westerners and Easterners, but not because the primes are viewed differently or activate different psychological constructs across these two groups. Rather, this occurs because the different default perceptual foci in Easterners and Westerners cause a different psychological chain of events for the two groups following construct activation. In other words, culture can moderate both the behaviors that result from primed constructs as well as their mediating mechanism – an entirely novel demonstration. As such, this paper not only deepens our understanding of how implicitly activated constructs can influence behavior across different contexts but also highlights the power of culture to influence the attentional and inferential processes that dictate social behavior.

## References

- Choi, I., Nisbett, R. E., & Norenzayan, a. (1999). Causal attribution across cultures: Variation and universality. *Psychological Bulletin*, *125*(1), 47-63.
- Gilbert, D. T., & Malone, P. S. (1995). The correspondence bias. *Psychological Bulletin*, *117*(1), 21-38.
- Hayes, A. F., Preacher, K. J., & Myers, T. A. (2010). Mediation and the estimation of indirect effects in political communication research. In E. P. Bucy & R. L. Holbert (Eds.), *Sourcebook for political communication research: Methods, measures, and analytical techniques*. New York: Routledge.
- Heine, S. J. (2010). Cultural psychology. In S. T. Fiske, D. T. Gilbert & G. Lindzey (Eds.), *Handbook of Social Psychology* (Vol. 1). Hoboken, New Jersey: Wiley.
- Higgins, E. T., Rholes, W. S., & Jones, C. R. (1977). Category accessibility and impression formation. *Journal of Experimental Social Psychology*, *13*(2), 141-154.
- Kay, A. C., & Ross, L. (2003). The perceptual push: The interplay of implicit cues and explicit situational construals on behavioral intentions in the Prisoner's Dilemma. *Journal of Experimental Social Psychology*, *39*(6), 634-643.
- Kay, A. C., Wheeler, S. C., & Smeesters, D. (2008). Situationally embedded social cognition: The interplay of construct accessibility, situational construal, and person perception. *Journal of Experimental Social Psychology*, *44*, 275-291.
- Kelley, H. H. (1967). Attribution Theory in Social Psychology. *Nebraska Symposium on Motivation*, *15*, 192-238.

- Knowles, E. D., Morris, M. W., Chiu, C.-Y., & Hong, Y.-Y. (2001). Culture and the process of person perception: Evidence for automaticity among East Asians in correcting for situational influences on behavior. *Personality and Social Psychology Bulletin*, 27(10), 1344-1356.
- Morris, M. W., & Peng, K. (1994). Culture and cause: American and Chinese attributions for social and physical events. *Journal of Personality and Social Psychology*, 67(6), 949-971.
- Preacher, K. J., & Hayes, A. F. (2004). SPSS and SAS procedures for estimating indirect effects in simple mediation models. *Behavior Research Methods, Instruments, & Computers*, 36(4), 717-731.
- Ross, L. (1977). The intuitive psychologist and his shortcomings: Distortions in the attribution process. In L. Berkowitz (Ed.), *Advances in Experimental Social Psychology* (Vol. 10, pp. 173-220). New York: Academic Press.
- Smeesters, D., Wheeler, S. C., & Kay, A. C. (2009). The role of interpersonal perceptions in the prime-to-behavior pathway. *Journal of Personality and Social Psychology*, 96(2), 395-414.
- Smeesters, D., Wheeler, S. C., & Kay, A. C. (2010). Indirect prime-to-behavior effects: The role of perceptions of the self, others, and situations in connecting primed constructs to social behavior. *Advances in Experimental Social Psychology*, 42, 259-317.
- Strull, T. K., & Wyer, R. S. (1979). The role of category accessibility in the interpretation of information about persons: Some determinants and implications. *Journal of Personality & Social Psychology*, 37(10), 1660-1672.

- Stapel, D. A., & Koomen, W. (2001). The impact of interpretation versus comparison mindsets on knowledge accessibility effects. *Journal of Experimental Social Psychology, 37*(2), 134-149.
- Van Lange, P. A. M. (1999). The pursuit of joint outcomes and equality in outcomes: An integrative model of social value orientation. *Journal of Personality and Social Psychology, 77*(2), 337-349.
- Van Lange, P. A. M., Ouwerkerk, J. W., & Tazelaar, M. J. A. (2002). How to overcome the detrimental effects of noise in social interaction: The benefits of generosity. *Journal of Personality and Social Psychology, 82*(5), 768-780.

## Footnotes

<sup>1</sup> Thirty-six pretest participants who read a description of the game and viewed one of these two sets of choices rated the unambiguously competitive other as more competitive ( $M = 2.94$ ,  $SD = 1.66$ ) than the ambiguously competitive other ( $M = 4.11$ ,  $SD = 1.60$ ),  $t(34) = 2.14$ ,  $p < .04$ .

<sup>2</sup> Readers may speculate about why we chose to measure person perceptions and situation construals prior to allocations, as this measurement could have potentially affected the likelihood of participants using such perceptions as a basis for action. We did so for three reasons. First, when trying to establish a causal pathway, it is useful to assess the mediator prior to the outcome to guarantee that the mediator is not, in fact, caused by the outcome. Second, some research has counterbalanced the order of assessment of person perceptions and behavior and shown it not to affect the results (e.g., Smeesters, Wheeler, & Kay, 2009). Third, the notion that measurement of these factors led participants to use these factors as a basis for behavior more than they ordinarily would does not explain our key effects, namely differential usage of person perceptions and situation construals as a function of participant culture. For example, if measurement led everyone to attend to and use situation construals in determining their behavior, we would not have observed differences between Easterners and Westerners in this regard.

<sup>3</sup> One statistical outlier with large studentized deleted residuals ( $> 3.5$ , see McClelland, 2000) was omitted.

Figure 1. Situational construal as a function of cultural group and prime

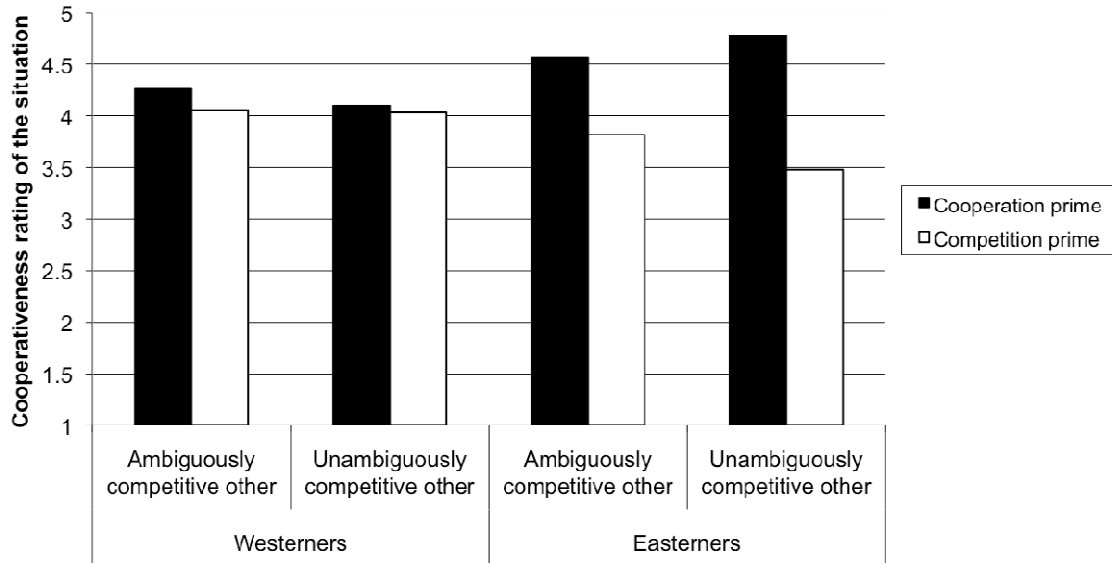




Figure 2. Perception of the other in function of cultural group, ambiguity, and prime

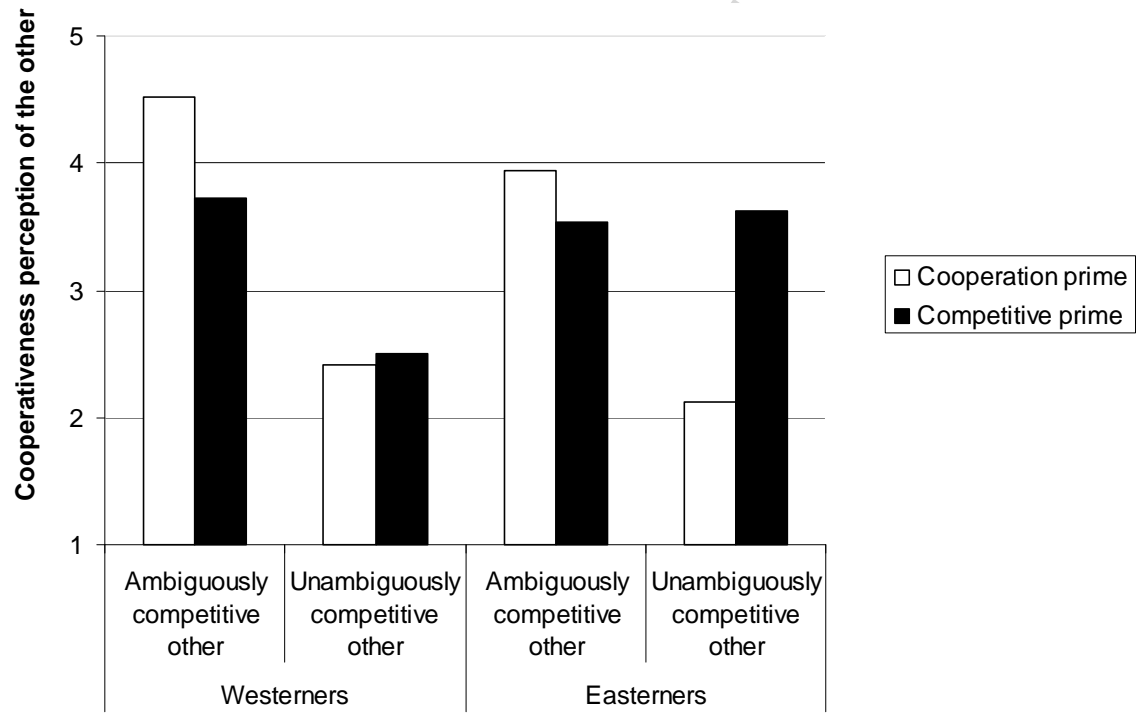


Figure 3. Allocation to the other in function of cultural group, ambiguity, and prime

