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James A. Mourey, Daphna Oyserman and Carolyn Yoon

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# One Without the Other: Seeing Relationships in Everyday Objects

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**James A. Mourey<sup>1</sup>, Daphna Oyserman<sup>2</sup>,  
and Carolyn Yoon<sup>1</sup>**

<sup>1</sup>Stephen M. Ross School of Business, and <sup>2</sup>Department of Psychology,  
The University of Michigan

## Abstract

People often make multiple choices at the same time, choosing a snack and drink or a cell phone and case, only to learn that some of their choices are unavailable. Do they take the available item (or items) or something else entirely? Culture-as-situated-cognition theory predicts that this choice is determined by one's accessible cultural mind-set. An accessible collectivist (vs. individualist) mind-set should heighten sensitivity to an emergent relationship among items chosen together so that having some is not acceptable if not all can be obtained. Indeed, we found that Latinos (but not Anglos) refuse chosen items if not all can be obtained (Study 1a). Further, making a collectivist mind-set accessible reproduces this between-groups difference (Study 1b), increases people's willingness to pay to complete sets (Study 1b), and shifts choice to previously undesired items if no set-completing option is provided (Studies 2–4). Finally, we found that increased sensitivity to an emergent relationship among chosen items mediates these effects (Studies 3 and 4).

## Keywords

culture, relationships, mind-sets, choice, cross-cultural differences, cognition, judgment, social cognition

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People often make multiple choices at the same time, for example, choosing a snack and drink or a cell phone and accessories, only to learn that some of their choices are unavailable. Consider the following situation. A moviegoer peruses the offerings at the movie theater's snack counter and decides to purchase a soda and pretzels. However, on ordering them, the moviegoer is told that the chosen soda is out of stock. Does this would-be snacker purchase the pretzels alone or maybe the pretzels and another drink? Or does the unavailability of the desired soda seem to loom large, shifting choice entirely, resulting in a decision to have no snack at all or a different snack altogether? We used culture-as-situated-cognition theory (Oyserman, 2011) to predict and demonstrate that the likelihood of choosing one without the other, purchasing the pretzels if the chosen soda is unavailable, is not simply happenstance or based on idiosyncratic tastes and circumstances. Rather, one's subsequent choice once initial choices are partially blocked is strongly predicted by which cultural mind-set is accessible at the moment of decision.

## Cultural Mind-Sets

Cultural mind-sets are tacit metatheories about what is important and valued (content), how to think (procedures), and why to act (goals; Oyserman, 2011; Oyserman & Lee, 2008b; Oyserman & Sorensen, 2009). The tacit metatheory of individualism is that institutions and relationships are just backdrops to individual striving; what matters are one's own goals. The tacit metatheory of collectivism is that individuals take on value through their engagement with social institutions and within their relationships with others. In the current studies, we contrasted the consequences of partially blocked choice for subsequent decisions when an individualist or a collectivist mind-set was accessible at the moment of judgment. We started with a core assumption of

### Corresponding Author:

Daphna Oyserman, The University of Michigan, Department of Psychology, 426 Thompson Ave., Institute for Social Research, Room 5240, Ann Arbor, MI 48109-1248  
E-mail: daphna.oyserman@umich.edu

culture-as-situated-cognition theory, which is that all societies socialize for both mind-sets because all societies need to address three core issues: ensuring survival of the group, regulating relationships among people within and outside the group, and ensuring that innovation is supported. The first two core issues are typically highlighted in descriptions of collectivism, which include the central role of social relationships, concern about what other people think (e.g., Chen, Chung, Lechcior-Kimel, & French, 2011; Oyserman, Kimmelmeier, & Coon, 2002; Schwartz, 1992; Triandis, 1995), between-groups antagonism (Oyserman, 1993), and willingness to sacrifice for one's own group (Leung & Bond, 1984; Oyserman & Lauffer, 2002). The third core issue, typically highlighted in descriptions of individualism, is the central role of being unique and different, and taking initiative in going one's own way (Triandis, 1995).

### Culture-as-Situated-Cognition Theory

Culture-as-situated-cognition theory assumes that cultural mind-sets, though rooted in metatheories about social structures and human relationships, spill over from human relationships to influence cognitive processes that facilitate meaning making more generally (Oyserman, 2011; Oyserman & Lee, 2008a). The cultural mind-set that is accessible at the moment of judgment influences which mental procedures are brought to bear on the judgment task (Oyserman & Lee, 2008b). The procedures cued by an individualist mind-set are segmenting and parsing out a central point; the procedures cued by a collectivist mind-set are connecting and integrating across elements. Because they are rooted in social structures and relationships, cultural mind-sets are often accessible in everyday situations; in the lab, they can easily be primed using a variety of methods, as summarized in a recent meta-analytic synthesis (Oyserman & Lee, 2008a).

For example, previous research showed that a small task such as reading a paragraph and clicking on the first-person pronouns in the paragraph influenced visual performance (in a Stroop task) and auditory performance (in dichotic listening) among Chinese, Korean, American, and Norwegian participants (Oyserman, Sorensen, Reber, & Chen, 2009). No matter the country, participants were better at segmenting out information after clicking on first-person singular pronouns (an individualism prime) rather than first-person plural pronouns (a collectivism prime). Thus, between-countries differences in the propensity to think in related or holistic terms (e.g., Nakamura, 1960/1988; Nisbett, Peng, Choi, & Norenzayan, 2001) seem to be rooted in subjects' accessible cultural mind-set (Oyserman, 2011; Varnum, Grossmann, Kitayama, & Nisbett, 2010), which suggests that these differences are malleable and not fixed.

### Applying Culture-as-Situated-Cognition Theory to Blocked-Choice Situations

In the current studies, we were interested in the effect of a collectivist mind-set in blocked-choice situations, focusing especially on the difference between initial and final choices. Collectivism has been linked to choice in a number of important ways. First, people living in collectivist (vs. individualist) societies show somewhat higher conformity to group norms (for a meta-analysis, see Bond & Smith, 1996). This implies that they will be more likely to make choices on the basis of other people's preferences, something which has been demonstrated (e.g., Han & Shavitt, 1994). Second, people living in collectivist societies are more likely to use informal, intuitive reasoning rather than formal, rule-based reasoning in making choices (e.g., Norenzayan, Smith, Kim, & Nisbett, 2002). This implies that they will be more likely to make choices on the basis of some kinds of relationships than others. Indeed, people living in collectivist societies display a particular pattern of cognitive dissonance (e.g., Imada & Kitayama, 2010). They are more likely to justify their public choices, but not their private choices, by changing their preferences after choosing, so that the nonchosen object is liked less and the chosen object is liked more.

What has not yet been explored, however, is what happens in situations of blocked choice when multiple items are chosen at the same time and then not all can be obtained. The dissonance research summarized earlier implies that collectivists should like the chosen, obtainable items more if the choice is public. But beyond the effect of social context, this prediction does not take into account the possibility that items chosen at the same time will be experienced differently depending on whether a collectivist or an individualist mind-set is accessible at the moment of judgment.

We predicted that just as the cultural mind-set accessible at the moment of judgment influences people's sensitivity to social relationships, it will also influence people's sensitivity to noticing an emergent relationship among items chosen at the same time. First, consider the effect of an accessible individualist mind-set. Processing with an individualist mind-set should retain focus on each item separately. If not all chosen items can be obtained at the same time, the obtainable items will retain their separate value. Next, consider the effect of an accessible collectivist mind-set. In contrast to processing with an individualist mind-set, processing with a collectivist mind-set should train attention to an emergent relationship among selected items chosen at the same time. Once perceived as connected, the original set should be more valued and separate parts should be less valued. Thus, in blocked-choice situations in which not all of one's initial choices can be obtained, we predicted that

one's final choice will be selected from the available subset of initial choices if, at the time of judgment, the accessible mind-set is individualist. In contrast, if at the time of judgment, a collectivist mind-set is accessible, one's final choice should exclude the available subset of initial choices if the set cannot be completed, and participants with a collectivist mind-set should be willing to pay more than participants with an individualist mind-set for the option to obtain all initial choices if that option is available.

## The Current Studies

In the current studies, we tested these predictions by having participants make choices (among puppies, cell-phone accessories, and snacks), blocking their ability to obtain some of their choices, and asking them how they would like to proceed. Because cultural psychology is based in between-groups differences, we started by showing a difference in the decisions made by Anglos and Latinos, who represent groups with average differences in collectivism (not individualism; for a meta-analytic review, see Oyserman, Coon, & Kemmelmeier, 2002). To demonstrate that this between-groups difference was due to participants' accessible mind-set, in subsequent studies, we primed which cultural mind-set was accessible at the moment of judgment. This allowed us to demonstrate that one's accessible mind-set is the active ingredient in any shifts after initial choice.

Our studies built on and extended prior findings in two ways. First, we demonstrated that an accessible collectivist mind-set reduces willingness to accept a partial set of initial choices in a blocked-choice paradigm, which results in a shift in preference toward previously nonchosen items. Second, we demonstrated that sensitivity to relationships mediates the effect of cultural mind-set on choice in situations in which initial choices are partially blocked or unavailable.

## Study 1

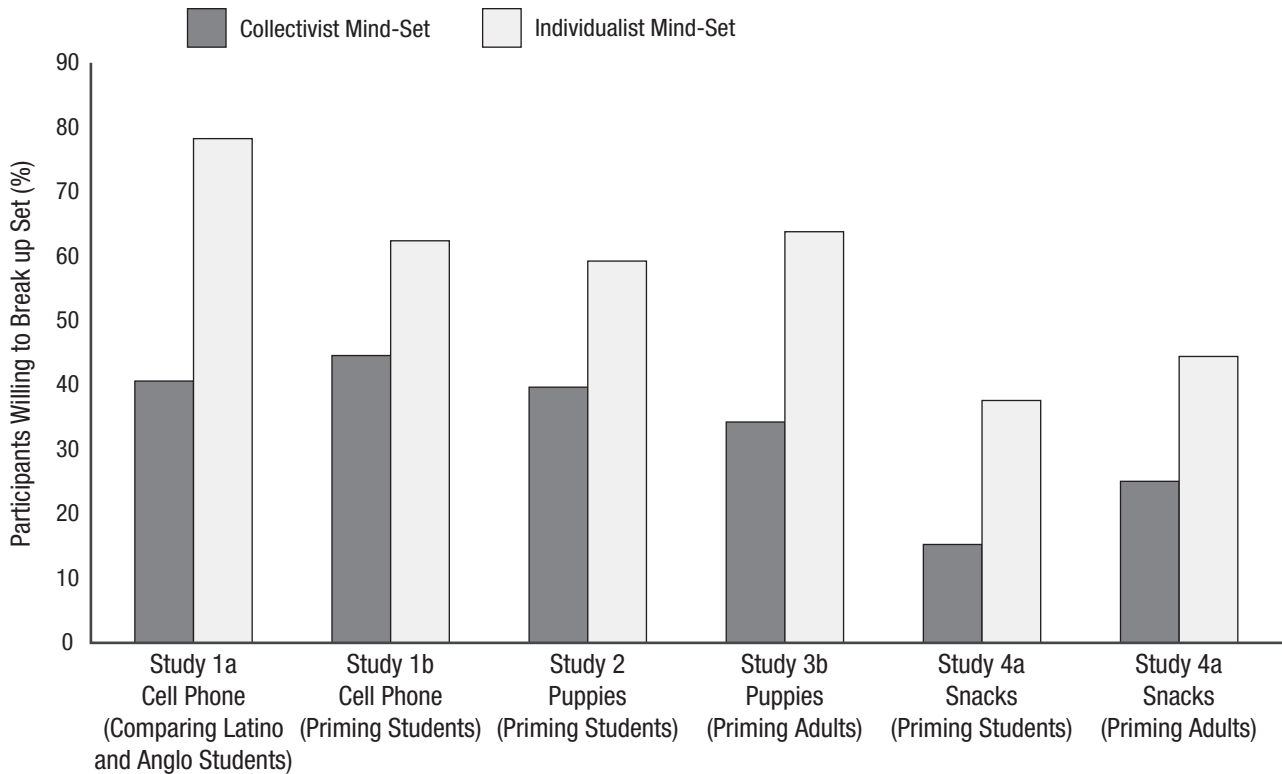
In Study 1a, the responses of Anglo ( $n = 34$ ) and Latino ( $n = 27$ ) students were compared. Latinos were assumed to be higher in chronically accessible collectivist mind-set than Anglos.<sup>1</sup> We predicted that if not all items in a set were available, Anglos would be willing to take chosen items and Latinos would refuse them.<sup>2</sup>

Paid undergraduate participants were recruited for a "marketing research partnership between Amazon.com and [their university]." They were then presented with four cell-phone-related items (cell phone, ear buds, cell-phone charger, and cell-phone case). Each item was presented in four colors (red, blue, black, white). Participants were asked to choose one of each type of

item in whatever color they preferred. After they made their choices, participants were told that one of their selected items was unavailable, and then they were asked how they wanted to proceed: purchase just the available products, start over and select all new products, or purchase nothing and exit. Proceeding with only the available products meant that participants had broken up their selected set, whereas the other two choices meant that participants were unwilling to break up their initially selected set. To reflect our prediction that holding a collectivist mind-set would reduce willingness to break up a set, we coded responses as either willing to break apart the related set (first choice) or not (other two choices). Most Latinos did not want to break up the set they had initially chosen; in contrast, most Anglos were willing to. Indeed, Anglos (79%) were almost twice as likely as Latinos (41%) to purchase whatever products were available from their initial choice,  $\chi^2(1, N = 61) = 3.39, p < .04$ , odds ratio = 3.04 (Fig. 1).

Thus, by showing that Anglos and Latinos significantly differ in the expected direction, Study 1a lends support to the prediction that a person's accessible cultural mind-set influences sensitivity to the possibility of a relationship and, therefore, choice. Although it provided a face-valid test, what a between-groups difference cannot be used to test is the underlying assumption that effects are due to difference in accessible cultural mind-set. Therefore, in Study 1b, we addressed this gap using Qualtrics (2010–2011) to randomly assign a second sample of subject-pool undergraduates ( $N = 267$ ) to view one of two "new" Amazon.com advertisements. The ads consisted of either one stick figure or several stick figures beneath a modified version of the familiar Amazon logo. Depending on which ad they viewed, participants were then asked, "How can Amazon.com help you stick out?" or "How can Amazon.com help you stick together?" Participants then completed the same choice task as in Study 1a, learned that an item was out of stock in the color they chose, and were asked how they would like to proceed. After responding, participants were told that Amazon.com could offer the out-of-stock item via a third-party partner and were asked what they would be willing to pay for this service.

Like Anglos in Study 1a, individualist-mind-set participants in Study 1b were 50% more likely to accept the partial set ( $M = 63\%$ ) than individuals in the collectivist-mind-set condition ( $M = 45\%$ ),  $\chi^2(1, N = 267) = 8.25, p < .005$ , odds ratio = 2.04 (see Fig. 1). Participants were willing to pay more to have the out-of-stock item delivered via a third-party partner if they accepted the partial set ( $M = \$4.84, SD = \$5.46$ ) rather than refused it ( $M = \$3.50, SD = \$4.13$ ),  $F(1, 266) = 5.60, p < .02$ . This main effect was moderated by accessible mind-set,  $F(1, 266) = 8.41, p < .004$ : Participants in the collectivist-mind-set condition



**Fig. 1.** Percentage of participants in Studies 1 through 4 willing to break up a chosen group of items as a function of the mind-set that was primed.

were willing to pay more to complete the set if they had just accepted the partial set ( $M = \$6.33$ ,  $SD = \$6.06$ ) than if they had just refused the partial set ( $M = \$3.12$ ,  $SD = \$4.35$ ,  $p < .001$ ). For individualist-mind-set participants, willingness to pay was not influenced by whether participants accepted the partial set ( $M = \$3.77$ ,  $SD = \$4.75$ ) or refused the partial set ( $M = \$4.05$ ,  $SD = \$3.78$ ,  $p = .72$ ). As predicted, an accessible collectivist mind-set increased the likelihood of rejecting a partial set and the willingness to pay more to complete the set.

## Study 2

To ensure that effects were not an artifact of the particular prime and choice situation we used in Study 1, we changed each of these in Study 2. We used a pronoun task (Gardner, Gabriel, & Lee, 1999) adapted for computer (Oyserman et al., 2009) to prime mind-set, and we had participants choose puppies (not phone accessories) for a friend (rather than for themselves). In the pronoun task, participants read a paragraph and were asked to click on the pronouns they saw. They either read a paragraph with first-person singular pronouns (I, me, my) or first-person plural pronouns (we, our, us). Whether read

in English, Chinese, Korean, or Norwegian, first-person singular pronouns cue an accessible individualist mind-set and first-person plural pronouns cue an accessible collectivist mind-set (Oyserman et al., 2009).

Undergraduates ( $N = 177$ ) were welcomed to a “preference study” programmed in Qualtrics (2010–2011). Ostensibly to clear participants’ minds, we first asked them to read a paragraph (the prime) and click on the pronouns they saw (which turned the pronouns red). They were randomly assigned to see either first-person singular pronouns (individualist-mind-set condition) or first-person plural pronouns (collectivist-mind-set condition). Everyone then read about a friend who wanted two puppies as pets, had selected five finalist puppies, and wanted help narrowing down the list to two. Participants chose two puppies from a randomly ordered set of five photographs and then learned that the friend’s landlord would allow only one pet per apartment. Participants were presented with the five puppies again and asked to choose only one puppy.

Replicating Studies 1a and 1b, results of Study 2 showed that participants’ cultural mind-set affected their final choice: Individualist-mind-set participants took one of their previous top puppy choices ( $M = 60\%$ ) but



collectivist-mind-set participants did not ( $M = 40\%$ ),  $\chi^2(1, N = 177) = 6.14, p < .01$ , odds ratio = 2.13 (Fig. 1). Thus, whether implied by cultural group as in Study 1a, primed with a catch phrase (Study 1b), or primed with first-person pronouns (Study 2), an accessible cultural mind-set influenced choice. Participants in the collectivist-mind-set condition preferred an initially nonchosen puppy over initially chosen ones if these puppies were first considered as part of a set. In Studies 3 and 4, we turned to the question of whether the process was mediated by sensitivity to an emergent relationship, as we predicted.

### Study 3

To test whether the influence of a collectivist mind-set on choice was due to increased sensitivity to emergent relationships among choices, in Study 3, we used the same prime and puppies as in Study 2 but examined the effect of mind-set on sensitivity to relationships more directly. We did so in two steps. In the first step (Study 3a), we tested the effect of being randomly assigned to mind-set condition on the reasons that pairs of puppies seemed to go together. In the second step (Study 3b), we looked at whether reasons mediated choice.

In Study 3a ( $N = 37$ ), we recruited a sample of adults online. Participants were asked to choose pairs of puppies that seemed to go together and to give reasons why they went together. To create an obvious choice, we randomly designated two puppies as siblings. In the collectivist-mind-set condition, participants listed more reasons overall ( $M = 3.41, SD = 1.58$ ) than in the individualist-mind-set condition ( $M = 2.30, SD = 1.13$ ),  $F(1, 35) = 6.54, p < .01$ ; even when reasons referring to siblinghood were excluded from analysis, collectivist-mind-set participants still listed more reasons ( $M = 2.47, SD = 1.59$ ) than individualist-mind-set participants did ( $M = 1.55, SD = 1.10$ ),  $F(1, 35) = 4.31, p < .05$ . Moreover, whereas the number of reasons differed across conditions, word count did not (individualist-mind-set condition:  $M = 38.85, SD = 24.07$ ; collectivist-mind-set condition:  $M = 35.12, SD = 14.06$ ),  $F(1, 35) = 0.07, p = .80$ , which suggests that compliance did not account for this difference.

Having shown an effect on reasons in Study 3a, in Study 3b, we replicated Study 2 using a new adult sample ( $N = 77$ ) recruited online. However, we made one addition—we informed participants about a sibling pair and requested that they list the reasons for their initial pair choice only after they learned they could not have all of their choices.

Replicating the basic finding from Study 2, results of Study 3b showed that participants stuck with one of their initial two choices in the individualist-mind-set condition ( $M = 64\%$ ), but not in the collectivist-mind-set condition ( $M = 34\%$ ),  $\chi^2(1, N = 77) = 6.88, p < .01$ , odds ratio = 3.43

(Fig. 1). Thus, even when provided with an obvious relationship, participants in the individualist-mind-set condition were more willing to break the relationship than participants in the collectivist-mind-set condition were.

Moreover, replicating Study 3a, Study 3b showed that collectivist-mind-set participants listed more reasons the puppy pair went well together overall ( $M = 4.37, SD = 2.62$ ) than individualist-mind-set participants did ( $M = 2.59, SD = 1.43$ ),  $F(1, 75) = 13.73, p < .001$ ; even when reasons referring to siblinghood were excluded from analysis, collectivist-mind-set participants listed more reasons the puppies went well together ( $M = 2.10, SD = 1.97$ ) than individualist-mind-set participants did ( $M = 1.44, SD = 1.43$ ),  $F(1, 75) = 2.92, p = .09$ . This difference was not due to compliance, as the word count of responses did not differ between the two groups (collectivist-mind-set condition:  $M = 40.76, SD = 30.80$ ; individualist-mind-set condition:  $M = 32.79, SD = 22.64$ ),  $F(1, 75) = 1.69, p = .20$ . As predicted, this measure of greater sensitivity to relationships over and beyond the obvious sibling relationship mediated the relationship between cultural mind-set and choice: Compared with individualist-mind-set participants, collectivist-mind-set participants generated more reasons (beyond the obvious) that their puppies were related, which led them to avoid breaking up their initial selection—95% confidence interval (CI) = [0.01, 1.22] (Preacher & Hayes, 2008). In Study 4, we conceptually replicated Study 3, returning to a choice for oneself and focusing again on sensitivity to the existence of an emergent relationship as mediating the effect of an accessible collectivist mind-set on choice when initial choice is partially blocked.

### Study 4

In Study 4, participants in a “consumer-preference study” were randomly assigned to a prime condition using the pronoun task as in Study 2. They then chose a drink and snack from three bottled beverages (milk, soda, fitness water) and three packaged snacks (cookies, chips, fitness bar) presented in randomized order. This choice situation allowed us to conceptually replicate Study 3 without mention of an obvious relationship among choices and addressed the possibility that participants’ choices were influenced by the time at which they provided reasons for their choices. In Study 4a, a sample of undergraduates ( $N = 91$ ) were asked to type the reasons their items went well together before being told that “Whoops! A mistake had been made: Instead of getting to choose two options, you can select only *one* (a beverage or snack).” Participants were shown the original six items and asked to choose the one they would like to have. In Study 4b, a second online sample of adult participants ( $N = 106$ ) were asked to type the reasons their items went well

together but, in contrast to Study 4a, only after learning that they could have only one.

Results were not influenced by the order in which reasons for choice were obtained. Compared with participants in the collectivist-mind-set condition, those in the individualist-mind-set condition were about twice as likely to take one of their initial choices, breaking up the initial pairing both before (individualist-mind-set condition:  $M = 38\%$ ; collectivist-mind-set condition:  $M = 15\%$ ),  $\chi^2(1, N = 91) = 5.55, p < .02$ , odds ratio = 3.27, and after (individualist-mind-set condition:  $M = 45\%$ ; collectivist-mind-set condition:  $M = 25\%$ ),  $\chi^2(1, N = 106) = 3.99, p < .04$ , odds ratio = 3.65, learning that they could have only one (Fig. 1).

Replicating Studies 3a and 3b, Studies 4a and 4b revealed that individualist-mind-set participants gave fewer reasons that their choices went together (Study 4a:  $M = 1.57, SD = 0.73$ ; Study 4b:  $M = 2.02, SD = 1.35$ ) than collectivist-mind-set participants did (Study 4a:  $M = 2.45, SD = 1.50$ ; Study 4b:  $M = 2.74, SD = 1.98$ ), Study 4a:  $F(1, 89) = 12.35, p < .001$ ; Study 4b:  $F(1, 104) = 4.64, p < .03$ . This effect was not due to compliance because condition did not affect number of words used to respond in either Study 4a (individualist-mind-set condition:  $M = 16.64, SD = 15.85$ ; collectivist-mind-set condition:  $M = 16.06, SD = 13.80$ ),  $F(1, 89) = 0.03, p = .85$ , or in Study 4b (individualist-mind-set condition:  $M = 18.60, SD = 15.42$ ; collectivist-mind-set condition:  $M = 18.33, SD = 12.13$ ),  $F(1, 104) = 0.01, p = .92$ .

Replicating Study 3b, Studies 4a and 4b showed that the number of reasons choices went together mediated the relationship between cultural mind-set and final choice. Compared with participants in the individualist-mind-set condition, participants in the collectivist-mind-set condition listed more reasons their initial snack and beverage selections went together and then, when told that one of their selected items was unavailable for consumption, chose to select a new snack or beverage instead of consuming their other initially selected item that was available (Study 4a: 95% CI = [0.11, 1.43]; Study 4b: 95% CI = [0.01, 0.94], neither of which included zero). Compared with collectivist-mind-set participants, individualist-mind-set participants listed fewer reasons their selected snack and beverage went together and then, when told that one of their selected items was unavailable for consumption, were nonetheless content with accepting the other selected item that was available.

## Discussion

We presented people with a variety of choice situations and found that when a collectivist mind-set was accessible at the moment of judgment, people were 50% to

100% more likely to respond as if choices they made at the same time had emergent value. They were less likely to want some of their choices if they could not have all of them whether they were choosing for themselves or someone else and whether choices were inanimate (a snack or cell phone) or animate (a puppy). We started with a between-groups comparison of Anglos and Latinos and followed up using a number of different priming methods, randomly assigning people to either an individualist- or a collectivist-mind-set condition. Latinos and people randomly assigned to the collectivist-mind-set condition were more hesitant to break up a set, more willing to pay extra to restore a set, and more sensitive to the existence of a relationship among members of a set. Indeed, the more participants noticed relationships among their just-made choices, the more their subsequent choices were affected.

Taken together, our results contribute to a better understanding of how culture situates cognition and provide insights into underlying cognitive processes. Although having and maintaining relationships is culturally universal (Mellar, Boyle, Bar-Yosef, & Stringer, 2007; Schwartz & Bardi, 2001), individualist and collectivist cultural mind-sets differentially influence sensitivity to the possibility of a relationship. Though likely developed to highlight the meaning of social relationships, cultural mind-sets carry over into nonsocial contexts. Thus, a collectivist mind-set creates a momentary attunement to the possibility of a relationship, such that people with collectivist mind-sets can and do create relationships among objects on the spot and are loath to break up these relationships. As we showed in our puppy study, this can result in otherwise surprising choices, including choosing what was previously a less preferred choice (e.g., rejecting a first and second choice once they are seen as a pair). Although, at first glance, these preferences seem incompatible with rational choice, in particular with the dominance principle in choice (Kahneman & Tversky, 1984), a second look demonstrates that once considered together, choices may not be separable. Because people with a collectivist mind-set experience initial choices together as a relationship, they are not valued separately. We studied effects in consumer choices, but effects should generalize across domains, including, for example, public-policy choices. Our studies imply that an accessible collectivist mind-set would reduce willingness to accept some chosen policy options if others cannot be obtained, which would reduce compromise.

## Author Contributions

J. A. Mourey and D. Oyserman planned the studies, and J. A. Mourey ran the studies and analyzed the data with D. Oyserman's suggestions. D. Oyserman and J. A. Mourey wrote

the manuscript, and C. Yoon was involved in the revision process.

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### Notes

1. This assumption was based on a meta-analysis of all available data sets comparing cultural values of Anglo Americans and other groups (Oyserman, Coon, & Kimmelmeier, 2002). The meta-analysis included a subgroup comparison of 21 studies comparing Latino Americans and Anglo Americans within the United States. Analyses show that Latino Americans are higher in collectivism and no different in individualism than Anglo Americans. This same pattern emerges in the larger set of studies comparing the United States with Latin American countries. For the within-U.S. comparison, scale-content-moderator analysis suggests that the lack of difference in individualism is not moderated by scale content and that differences in collectivism are due to differences in obligation to the in-group rather than to differences in advice seeking or in the content of self-concept (Oyserman, Coon, et al., 2002).
2. Our dependent variable was thus a binary choice. The appropriate test is a chi-square test, which cannot be represented as an effect size; instead, we present choice percentages and odds ratios of choice by condition (Bland & Altman, 2000).

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