Cross-Cultural Social Tuning in Morocco and the United States:

Effects of Cultural Orientation and Interdependence Mindset on Social Tuning

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Sadly, conflicts between groups exist throughout the world, and continue to erupt — ranging in magnitude from small intergroup conflicts to tensions between political parties in the United States, and even to the hacking of one country by another country. As these conflicts continue to emerge, there is a need to understand the cultural elements involved in the formation and maintenance of attitudes and beliefs; this is especially true regarding the formation of egalitarian beliefs.

Misunderstanding and mismatched interpretations of a situation are the seeds of awkward social interactions, which individuals are intrinsically motivated to avoid. Thus is the basis of shared reality theory, which argues that this avoidance is manifested through efforts to share internal states such as feelings, beliefs, and attitudes with one's interaction partners so as to develop a sense of mutual understanding, or a shared reality (Hardin & Conley, 2001). Thus, when in social interactions, especially when such interactions are between two individuals, humans tend to make small adjustments to better align themselves with the other people present. Body position, posture, and facial expression are some of the most salient examples of these adjustments in regular interactions. In addition to these external communication elements and in order to achieve this sense of shared reality, individuals may engage in an unconscious alignment of one's views with those of an interaction partner (Sinclair, Huntsinger, Skorinko, & Hardin, 2005). This is of particular interest because attitudes and views tend to be regarded as relatively fixed components of a set of beliefs which do not fluctuate from day to day, yet

research shows that attitudes can and do shift in social interactions depending on the views of one's interaction partner (Sinclair et al., 2005). Such social tuning can also facilitate belief transmission and maintenance over time (Echterhoff, Higgins, & Groll, 2005; Higgins & Rholes, 1978; Sinclair & Lun, 2007; Weisbuch, Sinclair, Skorinko, & Eccleston, 2009), indicating that social tuning could have a particularly important role in the long-term formation of egalitarian attitudes and beliefs.

Cultural Factors of Social Tuning

Hofstede's cultural dimensions theory describes how a society's culture affects the values and behaviors of members of that society across five cultural dimensions which distinguish one culture from another psychologically, providing a framework for cross-cultural communication (Hofstede, 1984). Previous research into the cultural factors of social tuning indicates that the cultural orientation dimension, which is measured on a spectrum from individualist to collectivist, significantly influences when and how people engage in social tuning (Skorinko, Lun, Sinclair, Marotta, Calanchini, & Paris, 2015). Specifically, people with a collectivist mindset are more likely to engage in social tuning than those with an individualistic mindset (Skorinko, Jeanine L. M. et al., 2015). In individualistic cultures, emphasis is placed on individuals, uniqueness, and nonconformity, whereas emphasis in collectivist cultures is placed on belonging to the larger family, community, or other group unit. Studies found that individualists do engage in social tuning when they are given a specific epistemic or affiliative motivation to do so, but otherwise do not engage in social tuning without that motivation present (Lun, Sinclair, Whitchurch, & Glenn, 2007). Meanwhile,

collectivists consistently engage in social tuning even when given no motivation for adjusting to another's views (Skorinko et al., 2015). That is, individualists need a reason to engage in social tuning, but collectivists appear to "automatically" tune.

However, the reasons why this cultural difference in social tuning occurs are yet unknown. Collectivists' desire to connect with others could stem from the need to maintain social harmony (Markus & Kitayama, 1991; Triandis, 1995). However, more recent research suggests that collectivists' social tuning behaviors may be explained by one of two interpersonal motivations — harmony seeking, as previously suggested, or rejection avoidance (Hashimoto & Yamagishi, 2013). In a 2015 study, collectivist participants were split into two experimental conditions and primed with either a mindset to maintain harmony in one condition or a mindset to avoid rejection in the other (Skorinko et al., 2015). Participants in both conditions were then given identical target stimuli for egalitarian views, and responded to implicit and explicit attitude measures to determine if they adjusted their views to the perceived egalitarian views from the target stimuli. Collectivists who were primed to think about avoiding rejection expressed significantly more egalitarian views than those primed to think about maintaining harmony, suggesting that seeking harmony is not the primary motivation behind collectivists' tendency to adjust to others' views (Skorinko, Jeanine LM & Sinclair, 2018). Thus, the implications of harmony seeking versus rejection avoidance explanations of social adjustment in individualist and collectivist cultures are not yet fully understood (Hashimoto & Yamagishi, 2013; Hashimoto, Li & Yamagishi, 2011; Yamagishi, Hashimoto & Schug, 2008).

Current Research

Therefore, present research seeks to investigate the cultural-social processes involved in the transmission of attitudes and beliefs because these cultural-social processes are likely to differ across cultures (see Heine, 2007 for a review). Utilizing a model that incorporates shared reality theory (Hardin & Conley, 2001) and well-established cultural dimensions (Hofstede, 1984), we conducted two experiments to better understand the roles that cultural orientation and interdependence mindsets (harmony seeking and rejection avoidance) play in the social tuning process. Specifically, these experiments sought to determine how rejection avoidance and harmony seeking affect social tuning when cultural orientation is manipulated. We anticipate that priming for cultural orientation will override one's natural cultural orientation; and, as a result, social tuning behaviors following interdependence primes will differ depending on one's primed cultural orientation. Experiment 1 specifically investigated whether collectivists would still "automatically" tune when first primed to think collectivistically and to avoid rejection, and whether collectivists primed to think individualistically would tune at all when primed to avoid rejection or seek harmony. Experiment 2 examined whether individualists would still refrain from tuning altogether when first primed to think collectivistically, and whether individualists primed to think collectivistically would tune to avoid rejection.

Method

Participants

A total of 151 English-speaking undergraduate and graduate students (90 females and 70 males) participated in this experiment. Eighty-seven lived in the United States and 64 lived in

Morocco. Thirty-four participants were excluded from analyses because they lived in countries other than the United States or Morocco or were not heterosexual. American participants were offered class credit as compensation for participating, while Moroccan participants were offered 50 Moroccan Dirham (about US$5) as compensation for participating. All participants were given an informed consent agreement prior to beginning the study and were informed that compensation would still be offered regardless of whether they chose to withdraw at any point during the experiment.

Design

This was a 2x2 between-participants experimental design to determine what effects cultural orientation and the desire to maintain harmony or avoid rejection have on the adjustment of implicit attitudes to match those of an interaction partner. The study consisted of four experimental groups wherein participants were first exposed to either a collectivist or individualist prime followed by a second prime to either maintain harmony or avoid rejection in social interactions. After being exposed to the experimenter's supposed egalitarian beliefs about homosexuality, participants' implicit and explicit attitudes toward homosexuality were measured to determine any adjustment in implicit attitudes to closer match those of the researcher.

Materials

Cultural Orientation Priming Task. One of the two independent variables in the experimental design was cultural orientation, specifically regarding individualist versus collectivist mindsets. This was manipulated using a priming activity at the beginning of the experiment in which participants were presented with one of two possible versions of a story

about a warrior who must make an important military nomination (Oyserman & Lee, 2008; Skorinko et al., 2015; Skorinko & Sinclair, 2018). The two versions of the story differ in that in one, the warrior is making the decision based on self-interest and solely considering personal gain (Individualistic Orientation Prime). In the other version, the warrior is making the decision based on familial reasons and solely considering the benefits to his family (Collectivistic Orientation Prime). All participants then made a judgement about whether they admired the warrior character after they finished reading the story, with their options being "Yes", "No", and "Unsure".

Rejection Avoidance / Harmony Seeking Motivation Priming Task. The second independent variable was whether participants had the motivation to avoid rejection or seek harmony, which was manipulated using a second prime encountered by participants after completing the warrior prime task. In the rejection avoidance / harmony seeking prime, participants completed an open response writing task in which they were given two scenarios and asked to write about what they imagine they would do in those situations. The first scenario involved going to the movies with a friend and seeing the film that the participant's friend preferred over the one that the participant preferred, and the second scenario involved reluctantly rallying after a long, exhausting day to go to a concert that the participant's friends were excited about. Participants in the rejection avoidance condition were asked what they imagined they did to adjust their preferences in each scenario in order to avoid being rejected by their friends. Participants in the harmony seeking condition were given the same scenarios but asked instead

what they imagined they did to adjust their preferences in each scenario in order to maintain their good and harmonious relationships with their friends.

Image Rating Condition Task. In order to test the effects of the two independent variables on the adjustment of participants' attitudes to match those of a social interaction partner, participants first had to learn the supposed beliefs of their interaction partner - in this case, the experimenter. This was done using an image rating task following the completion of the reading and writing tasks used for the cultural orientation and social motivation primes. In this task, participants were given a series of five images shown in a random order, which they were told were being considered for an upcoming marketing campaign. Participants were asked to rate how much they liked each image on a five-point Likert-Type Scale (1 = Hated It; 5 = Loved It), and were told that the experimenter's personal ratings of the images would be given above the scale in order to provide an example of how the rating works. Four of the five images were neutral images not meant to evoke any strong opinions. The fifth image was the target image meant to express the experimenter's egalitarian views toward sexual orientation with a picture captioned "Tolerance is a virtue" and a five-star rating from the experimenter shown as the example rating. All images were pre-tested prior to being used.

Single Category Implicit Association Test. The first attitude assessment in the experiment was a single category implicit association test using homosexuality as the single category and using images as the target stimuli (Karpinski & Steinman, 2006). In the SC-IAT, participants were given instructions for a "cognitive skills assessment" wherein three category labels were listed at the top of the screen - good, bad, and homosexual - with two category labels

on one side of the screen and one category label on the other. The category labels were positioned such that "good" and "bad" were always on opposite sides of the screen so that they were never paired together, while the "homosexual" label was randomly placed beneath one of the other two category labels. One at a time, pictures or words appeared in the center of the screen, and participants pressed either the "E" key or the "I" key to categorize the stimuli under the applicable label. Words that appeared during the task embodied either the "good" or "bad" category, and images that appeared depicted homosexual romantic relationships. Prior to beginning this task, participants were told that it was imperative for them to go as quickly and accurately as possible throughout. Random assignment ensured that half of participants saw the "bad - homosexual" category label pairing first while the other half of participants saw the "good - homosexual" category label pairing first. Participants completed 24 practice trials and 48 experimental trials for each label pairing. Response times for each stimulus trial were recorded to measure how quickly participants were able to make the required categorical associations.

The single category IAT was chosen as the primary method of implicit attitude assessment because of the advantages the SC-IAT has over traditional implicit-association tests in determining valence of implicit attitudes toward a particular target group (Karpinski & Steinman, 2006). Traditional IATs can successfully determine if a participant has an implicit preference for one category over the other, but they cannot differentiate between the multiple explanations for such a result. For example, a participant might have, according to an IAT, a strong bias toward heterosexuality, thus implying a strong bias against homosexuality. These results have multiple interpretations, however, in that the participant could have an exceptionally

favorable attitude toward heterosexuality and a smaller favorable attitude toward homosexuality, they could have an unfavorable attitude toward heterosexuality and simply have an even more unfavorable attitude toward homosexuality, or they could have a favorable attitude toward heterosexuality and an unfavorable attitude toward homosexuality. The single category IAT resolves this ambiguity by only testing the respondent's associations to a single target category, meaning that results and their meaning are taken directly from the positive-negative association scale rather than from a comparison between two points on that scale, thus allowing for valence of the association to be determined. Higher scores indicate more favorable associations toward the target category.

Word Search. To provide a mental rest period between the two implicit attitude assessments, participants completed a word search puzzle as a filler task. In the word search task, participants viewed a grid of letters containing English color words mixed among other various letters. Participants searched the grid for words and wrote each color word they found into a box provided on the screen below the letter grid. The word search was on the screen for 60 seconds before automatically bringing participants to the next section of the study.

Implicit Association Test. The traditional Implicit-Association Test was included in the study as the second tool for measuring participants' implicit attitudes as it has been used in previous work (Skorinko et al., 2015; Skorinko & Sinclair, 2018). It also serves as a means of confirming the validity of the results from the SC-IAT (Karpinski & Steinman, 2006).

In the Implicit-Association Test, participants first saw a screen with two category labels at the top. As words or images appeared in the center of the screen, participants categorized those

stimuli into one of the two categories using the “D” and “K” keys of the keyboard. After completing 20 practice trials of categorizing stimuli as either “good” or “bad” and 20 practice trials of categorizing stimuli as either “homosexual” or “heterosexual”, the layout of the task then changed to include all four category labels at the top of the screen and participants completed a total of 108 more trials. Of these, 54 trials (24 practice, 30 experimental) involved categorizing stimuli as either “good OR homosexual” or “bad OR heterosexual”, and the other 54 trials (24 practice, 30 counted) involved categorizing stimuli as either “good OR heterosexual” or “bad OR homosexual”. Random assignment ensured that half of participants saw the “good - homosexual, bad-heterosexual” category label pairings first, and half of participants saw the “good - heterosexual, bad - homosexual” category label pairings first. As with the SC-IAT, response times for each stimulus trial were recorded to measure how quickly participants made the required categorical associations. Higher scores indicate a stronger preference toward the target category.

Explicit Attitude Questionnaire. To measure explicit attitudes toward homosexuality, participants completed the Attitudes Toward Lesbians and Gay Men Scale (ATLG; Herek, 1998). The ATLG is a 20-item questionnaire consisting of ten attitude statements pertaining to male homosexuality and ten attitude statements pertaining to female homosexuality. Participants indicated how much they agreed with each statement using a seven-point Likert-Type Scale (1="Strongly Disagree"; 7="Strongly Agree"). Answers to these explicit attitude questions were used to generate a measurement of participants’ external attitudes toward homosexuality to determine whether participants’ attitudes toward homosexuality were adjusted to match those of

the experimenter. Two items were modified from the original ATLG because the items referred to American Laws.

Interdependence/Independence Scale. In addition to implicit and explicit attitudes towards homosexuality, interdependence and independence was also measured using the Singelis Self-Construal Scale (Singelis, 1994). This questionnaire consisting of 18 Likert-Type Scale items (1="Strongly Disagree"; 7="Strongly Agree") containing statements such as, “My personal identity independent of others is very important to me," and, “My happiness depends on the happiness of those around me."

Tight/Loose Cultural Orientation Scale. Recent research has also identified countries as being tight or loose in their cultural orientation (Gelfand et al., 2011). Morocco was not one of the countries in the original study. For exploratory purposes, participants also completed a six-item questionnaire that measured Tight/Loose Cultural Orientation. An example statement is: “People in this country almost always comply with social norms." For each of the six questions, participants indicated how much they agreed with the given statement using a seven-point Likert-Type scale (1="Strongly Disagree"; 7="Strongly Agree").

Manipulation Checks and Demographics. Participants completed a series of checks in the form of a 12-item questionnaire to check for demand characteristics. In the demand characteristics questionnaire, participants answered questions such as, “How much did you want the experimenter to like you?” using a seven-point Likert-Type Scale (1="Not at All"; 7="Very Much") to indicate responses. The demand characteristic questions specifically checked for any indication of intentional adjustment of answers on behalf of the participant. After completing the

demand characteristic questions, participants answered two multiple-choice manipulation check questions. The first question was regarding whether the participant had been instructed during the writing task to think about seeking harmony or avoiding rejection. The second question asked whose example ratings the participant viewed during the image rating task in order to confirm that participants had acknowledged that they were seeing the experimenters supposed views during that portion of the study. Finally, participants answered two debrief questions to check for suspicion, both of which consisted of an open-ended response field. Participants were first asked if anything seemed odd or unusual during their session, and then in the second question were asked what hypothesis they suspected was being tested in the experiment.

In the final portion of the experiment, participants answered a set of multiple-choice demographic questions regarding gender, year in school, race, cultural background, sexual orientation, and native language. The demographic questions were modified to be inclusive of Moroccan participants by changing questions about school enrollment year from “freshman”, “sophomore”, etc. to “first year”, “second year”, and so on to accommodate for the linguistic difference in how grade years are referenced in the United States and Morocco. Answer options for the demographic question asking for participants’ native language were also adjusted to include Arabic, Tamazight, and French as possible answers.

Modifications

Minor modifications were made to almost every section of the study before implementing it. The entire study, including the script, was read over before implementation to evaluate comprehensibility for non-native English speakers. Any words that were either deemed too

difficult, uncommon, or colloquial were replaced either with a synonym that had a French cognate whenever possible, or with the closest synonym with a French root. This was done to make any necessary on-the-spot translation by Moroccan participants throughout the experiment as easy as possible.

Procedure

Participants were recruited from various universities in Rabat, Morocco to participate in a "cross-cultural psychology study looking at the differences in attitudes toward popular media and cognitive processes between Moroccans and Americans". Upon arrival for the study, participants were greeted, engaged in small talk by the experimenter, and asked if they had any questions about the study before beginning. Once enough of a rapport had been established that participants were comfortable and ready to begin, they were given an informed consent agreement explaining the expected risks, rewards, time commitment, and intended monetary compensation for the experiment. After agreement to continue, the researcher secured a smart watch around the participant's left wrist and started an activity on the watch under the category "other". The experimenter then explained that she would be reading from a script for the duration of the experiment in order to ensure that all participants receive the same information, and continued on to explain that there would be a brief wait before starting the first task while the watch recorded some baseline heart rate data.

After receiving the first set of instructions from the experimenter during that wait period, participants completed an ostensible reading task (the Cultural Orientation Manipulation). In this task, participants were randomly assigned to read a story about a warrior who made a

decision for personal gain (Individualistic Orientation Condition) or family interests (Collectivistic Orientation Condition). The participants then engaged in an ostensible writing task which served as the Harmony Seeking/Rejection Avoidance prime. Participants read two scenarios (one about seeing a movie they did not want to see and the other about going to a concert even though they were too tired). After each scenario, participants were randomly assigned to write about what they did to either: maintain harmony with their friends (Seeking Harmony Condition) or avoid being rejected by their friends (Avoid Rejection Condition).

Once they had completed the reading and writing tasks, participants learned they would view some images that were being considered for an upcoming marketing campaign and they would rate their personal opinion of those images. The experimenter also explained that as an example, participants would see her personal ratings for each image above the sliding response bar. Participants saw four neutral images that had average "experimenter" ratings. Participants also saw a target image that expressed egalitarian views towards homosexuality and had an excellent "experimenter" rating. This was where the perceived attitude was manipulated and participants saw what they believed to be a genuine, egalitarian attitude expressed by the experimenter regarding homosexuality. The order of the images was randomized.

After completing the image rating task, participants' implicit attitudes toward homosexuals were measured in two ways. First, participants completed a single category implicit association test, or SC-IAT, in which they were tasked with categorizing stimulus words or images into three category labels at the top of the screen (Karpinski & Steinman, 2006). All participants completed 24 practice trials and 72 test trials of the categorization task before

repeating the process with the category label pairings reversed (order of pairings was counterbalanced). Participants' response times were recorded for each test trial and used to determine implicit associations based on how quickly participants made the required associations.

Once finished with the SC-IAT in its entirety, participants completed a filler task to provide time in between the SC-IAT and the regular IAT. The filler task was a word search puzzle containing English color words. The word search task was timed for one minute, during which participants entered as many color words as they could find in the word search grid.

Participants' implicit attitudes toward homosexuality were measured again using a homosexuality Implicit-Association Test (IAT) as was done in past work (Skorinko et al., 2015). In the IAT, participants see labels on each side of the screen and they categorize pictures or words into those categories. In this version of the IAT, participants categorize pictures or words as being "good", "bad", "homosexual", or "heterosexual". Participants completed 54 categorization trials with these category label pairings and then completed another 54 categorization trials with the category label pairings reversed. As with the SC-IAT, response times for each stimulus trial were recorded to measure how quickly participants made the required categorical associations. Participants always engaged in the single category implicit association test prior to completing the traditional Implicit-Association Test as recommended by the creators of the SC-IAT to avoid any effect that the dichotomous thinking in the IAT may have on the SC-IAT (Karpinski & Steinman, 2006).

Participants' explicit attitudes toward homosexuality were measured using the Attitudes Toward Lesbians and Gay Men (ATLG) Scale (Herek, 1998), a 20-item questionnaire consisting of agree-disagree Likert-Type Scale (1="Strongly Disagree"; 7="Strongly Agree") questions about participants' attitudes toward both male and female homosexuality. Participants directly answered how much they agreed with statements comparing homosexuality to sickness as well as statements condoning homosexuality.

Once they finished providing their explicit attitudes toward homosexuality, participants completed several brief follow-up questionnaires. First, participants responded to an Interdependent / Independent questionnaire (Singelis, 1994) consisting of 18 Likert-Type Scale items (1="Strongly Disagree"; 7="Strongly Agree") used to gauge how much a culture and its members value independence and interdependence. Participants then completed the six-item Tightness-Looseness Scale (Gelfand et al., 2011). For this questionnaire, participants used a Likert-Type Scale (1="Strongly Disagree"; 7="Strongly Agree") to evaluate how diligently their country adheres to social norms. In the final portion of the experiment, participants answered questions to assess demand characteristics, manipulation checks, and suspicion. Participants also completed a brief demographic questionnaire measuring native language, cultural background, race, gender, school year, and sexual orientation. Finally, participants were thanked, extensively debriefed, and offered the applicable compensation for their time.

Results

Experiment 1: Results

All data were assessed for statistical significance at $\alpha = .05$ and analyzed by 2 X 2 analyses of variance (ANOVA) with Cultural Orientation Mindset (individualist, collectivist) and Interdependence Mindset (harmony seeking, rejection avoidance) as independent variables.

Moroccan participants, who are natively collectivists, are expected to replicate previous collectivists' social tuning behaviors when primed to think collectivistically. Participants with the collectivist mindset condition are expected to engage in social tuning when also in the mindset of avoiding rejection. Participants primed to think collectivistically with a mindset of maintaining social harmony are not expected to engage in such attitude adjustments. In particular, collectivistically primed participants who are avoiding rejection should express more favorable / less prejudiced views toward homosexuals on both the implicit attitude measures and explicit attitude measures than collectivistically primed participants who are seeking harmony. Indeed, the attitudes expressed by participants did appear to trend in the expected direction: Moroccans with a collectivistic mindset did express less prejudice across all attitude measures when thinking about avoiding social rejection than when thinking about maintaining social harmony, particularly so in the implicit attitude measures. Contrary to expectations, however, this difference in attitudes between the two interdependence conditions was not statistically significant.

It is also expected that despite natively being collectivists, Moroccan participants when primed to think individualistically will replicate individualists' social tuning behaviors. Participants with the individualistic mindset condition are expected not to engage in social tuning in either the harmony seeking or avoiding rejection conditions. Individualistically-primed

participants who are avoiding rejection and individualistically-primed participants who are seeking harmony should express equally favorable or prejudiced views across the implicit and explicit attitude measures. Again, participants' attitude scores did follow the expected trend: there were no significant differences between the views expressed by individualistically-primed participants avoiding rejection and individualistically-primed participants seeking harmony on any of the attitude measures. Notably, participants primed to think individualistically actually expressed less prejudiced views toward homosexuals in the implicit attitude measures when seeking harmony than they did when avoiding rejection.

Implicit Attitudes

Single Category Implicit Attitude Measures. For the single category implicit attitude measures (SC-IAT), higher scores indicate more favorable associations with homosexuality. Contrary to hypotheses, the predicted main effect for Cultural Orientation was not statistically significant in the single category implicit attitude measures, F (1, 53) = .375, p = .543, η_p^2 = .007. As shown in Figure 1, participants primed to think collectivistically did not significantly differ from participants primed to think individualistically in their implicit attitudes toward homosexuality. There were no significant main effect for Interdependence Mindset in the single category implicit attitude measures, F (1, 53) = .306, p = .583, η_p^2 = .006. Participants primed to avoid rejection did not significantly differ from participants primed to maintain harmony in their implicit attitudes toward homosexuality.

The interaction between Cultural Orientation and Interdependence Mindset was also not statistically significant, F (1, 53) = 1.248, p = .269, η_p^2 = .023 and the single category implicit

attitudes toward homosexuality were not significantly more positive for participants primed to think collectivistically and avoid rejection than for participants primed to think collectivistically and seek harmony. The single category implicit attitudes toward homosexuality were slightly more positive for participants primed to think individualistically and seek harmony than for participants primed to think individualistically and avoid rejection, though not significantly so, thus supporting original predictions on the tuning behavior of collectivists primed as individualists.

Dual-Category IAT. For the dual-category implicit attitude measures (regular IAT), higher scores indicate positive associations with heterosexuality across all categories, which also indicates negative associations with homosexuality. Contrary to hypotheses, the predicted main effect for Cultural Orientation was not statistically significant in the regular implicit attitude measures, F (1, 53) = .281, p = .598, η_p^2 = .005. As shown in Figure 2, participants primed to think collectivistically did not significantly differ from participants primed to think individualistically in their implicit attitudes on sexual orientation. There were no significant main effects for Interdependence Mindset in the regular implicit attitude measures, F (1, 53) = .317, p = .576, η_p^2 = .006. Participants primed to avoid rejection did not significantly differ from participants primed to maintain harmony in their implicit associations toward sexual orientation.

Contrary to predictions, the interaction between Cultural Orientation and Interdependence Mindset was not statistically significant, F (1, 53) = 1.179, p = .283, η_p^2 = .022 and participants primed to think collectivistically and seek harmony did not express significantly more implicit prejudice toward homosexuality than participants primed to think collectivistically and avoid

rejection. Conversely, the implicit attitudes toward homosexuality were slightly more positive for participants primed to think individualistically and seek harmony than for participants primed to think individualistically and avoid rejection. This difference was not significant, though, thus supporting original predictions on the tuning behavior of collectivists primed as individualists.

Explicit Attitude Measures

For explicit attitude measures (the Attitudes Toward Lesbians and Gay Men Scale [ATLG]), higher scores indicate more explicit prejudice toward homosexuality. Prior to statistical analysis, reverse-scoring questions on the ATLG were re-coded to match the valence directionality of the regularly-scored questionnaire items, so that higher scores for each answer indicate more prejudiced views toward homosexuals than lower scores.

In opposition to hypotheses, the predicted main effect for Cultural Orientation was not statistically significant in the explicit attitude measures, F (1, 53) = 2.492, p = .120, η_p^2 = .045. As shown in Figure 3, participants primed to think collectivistically did not significantly differ from participants primed to think individualistically in their explicit attitudes toward homosexuality. There were no significant main effects for Interdependence Mindset in the explicit attitude measures, F (1, 53) = .135, p = .714, η_p^2 = .003. Participants primed to avoid rejection did not significantly differ from participants primed to maintain harmony in their explicit attitudes toward homosexuality.

Contrary to predictions, the interaction between Cultural Orientation and Interdependence Mindset was not statistically significant, F (1, 53) = .174, p = .678, η_p^2 = .003 and participants primed to think collectivistically and avoid rejection did not express significantly less explicit

prejudice toward homosexuality than participants primed to think collectivistically and seek harmony. The explicit attitudes toward homosexuality were identical between participants primed to think individualistically and seek harmony and participants primed to think individualistically and avoid rejection. The identical explicit attitude results between the two groups means that participants primed with the individualist mindset did not engage in social tuning in either interdependence condition, thus partially supporting original predictions on the tuning behavior of collectivists primed as individualists.

Experiment 2: Results

All data were assessed for statistical significance at $\alpha = .05$ and analyzed by 2 X 2 analyses of variance (ANOVA) with Cultural Orientation Mindset (individualist, collectivist) and Interdependence Mindset (harmony seeking, rejection avoidance) as independent variables.

U.S. participants, who are natively individualists, are expected to replicate previous collectivists' social tuning behaviors when primed to think collectivistically. Participants with the collectivist mindset condition are expected to engage in social tuning when also in the mindset of avoiding rejection. Participants primed to think collectivistically with a mindset of maintaining social harmony are not expected to engage in such attitude adjustments. In particular, collectivistically primed participants who are avoiding rejection should express more favorable / less prejudiced views toward homosexuals on both the implicit attitude measures and explicit attitude measures than collectivistically primed participants who are seeking harmony. Indeed, the attitudes expressed by participants did appear to trend in the expected direction: Americans with a collectivistic mindset did express less prejudice across all attitude measures

when thinking about avoiding social rejection than when thinking about maintaining social harmony, particularly so in the implicit attitude measures. Contrary to expectations, however, this difference in attitudes between the two interdependence conditions was not statistically significant.

It is also expected that despite natively being individualists, U.S. participants when primed to think individualistically will replicate individualists' social tuning behaviors. Participants with the individualistic mindset condition are expected not to engage in social tuning in either the harmony seeking or avoiding rejection conditions. Individualistically-primed participants who are avoiding rejection and individualistically-primed participants who are seeking harmony should express equally favorable or prejudiced views across the implicit and explicit attitude measures. Again, participants' attitude scores did follow the expected trend: there were no significant differences between the views expressed by individualistically-primed participants avoiding rejection and individualistically-primed participants seeking harmony on any of the attitude measures. Notably, participants primed to think individualistically actually expressed less prejudiced views toward homosexuals in the implicit attitude measures when seeking harmony than they did when avoiding rejection.

Implicit Attitudes

Single Category Implicit Attitude Measures. For the single category implicit attitude measures (SC-IAT), higher scores indicate more favorable associations with homosexuality. Contrary to hypotheses, the predicted main effect for Cultural Orientation was not statistically significant in the single category implicit attitude measures, $F\,(1, 56) = 1.522$, $p = .223$, $\eta_p^2 =$

.026. As shown in Figure 4, participants primed to think collectivistically did not significantly differ from participants primed to think individualistically in their implicit attitudes toward homosexuality. There were no significant main effects for Interdependence Mindset in the single category implicit attitude measures, F (1, 56) = .005, p = .942, η_p^2 = .000. Participants primed to avoid rejection did not significantly differ from participants primed to maintain harmony in their implicit attitudes toward homosexuality.

The interaction between Cultural Orientation and Interdependence Mindset was also not statistically significant, F (1, 56) = 1.898, p = .174, η_p^2 = .033 and the single category implicit attitudes toward homosexuality were not significantly more positive for participants primed to think collectivistically and avoid rejection than for participants primed to think collectivistically and seek harmony. The single category implicit attitudes toward homosexuality were slightly more positive for participants primed to think individualistically and seek harmony than for participants primed to think individualistically and avoid rejection, though not significantly so, thus supporting original predictions on the tuning behavior of collectivists primed as individualists.

Dual-Category Implicit Attitude Measures. For the dual-category implicit attitude measures (regular IAT), higher scores indicate positive associations with heterosexuality across all categories, which also indicates negative associations with homosexuality. Contrary to hypotheses, the predicted main effect for Cultural Orientation was not statistically significant in the regular implicit attitude measures, F (1, 56) = .297, p = .588, η_p^2 = .005. As shown in Figure 5, participants primed to think collectivistically did not significantly differ from participants

primed to think individualistically in their implicit attitudes on sexual orientation. There were no significant main effects for Interdependence Mindset in the regular implicit attitude measures, F (1, 56) = .112, p = .740, η_p^2 = .002. Participants primed to avoid rejection did not significantly differ from participants primed to maintain harmony in their implicit associations toward sexual orientation.

Contrary to predictions, there was no significant interaction between Cultural Orientation and Interdependence Mindset, F (1, 56) = .001, p = .971, η_p^2 = .000 and participants primed to think collectivistically and seek harmony did not express significantly more implicit prejudice toward homosexuality than participants primed to think collectivistically and avoid rejection. Conversely, the implicit attitudes toward homosexuality were slightly more positive for participants primed to think individualistically and seek harmony than for participants primed to think individualistically and avoid rejection. This difference was not significant, though, thus supporting original predictions on the tuning behavior of collectivists primed as individualists.

Explicit Attitude Measures

For explicit attitude measures (the Attitudes Toward Lesbians and Gay Men Scale [ATLG]), higher scores indicate more explicit prejudice toward homosexuality. Prior to statistical analysis, reverse-scoring questions on the ATLG were re-coded to match the valence directionality of the regularly-scored questionnaire items, so that higher scores for each answer indicate more prejudiced views toward homosexuals than lower scores.

In opposition to hypotheses, the predicted main effect for Cultural Orientation was not statistically significant in the explicit attitude measures, F (1, 56) = 1.472, p = .230, η_p^2 = .026.

As shown in Figure 6, participants primed to think collectivistically did not significantly differ from participants primed to think individualistically in their explicit attitudes toward homosexuality. There were no significant main effects for Interdependence Mindset in the explicit attitude measures, F (1, 56) = .154, p = .696, η_p^2 = .003. Participants primed to avoid rejection did not significantly differ from participants primed to maintain harmony in their explicit attitudes toward homosexuality.

Contrary to predictions, the interaction between Cultural Orientation and Interdependence Mindset was not statistically significant, F (1, 56) = 1.051, p = .310, η_p^2 = .018 and participants primed to think collectivistically and avoid rejection did not express significantly less explicit prejudice toward homosexuality than participants primed to think collectivistically and seek harmony. The explicit attitudes toward homosexuality were identical between participants primed to think individualistically and seek harmony and participants primed to think individualistically and avoid rejection. The identical explicit attitude results between the two groups means that participants primed with the individualist mindset did not engage in social tuning in either interdependence condition, thus supporting original predictions on the tuning behavior of collectivists primed as individualists.

Discussion

Previous research investigating the cross-cultural elements of social tuning shows that collectivists tend to engage in social tuning without needing a specific motivation to do so, and that the desire to align themselves with an interaction partner may come from the desire to avoid being rejected. Thus, when cultural orientation was manipulated in an experimental condition,

collectivists were expected to replicate these behaviors when still primed to think collectivistically. Individualists, on the other hand, require motivation to engage in social tuning, and they do not engage in social tuning in response to either interdependence mindset of seeking harmony or avoiding rejection. When cultural orientation was manipulated in an experimental condition, individualists were expected to replicate these behaviors when primed to think individualistically. Cultural orientation manipulation was expected to affect participants' social tuning behavior by overriding one's normal cultural orientation when the manipulated orientation was different from the participants' own cultural orientation. For example, individualist participants were expected to engage in social tuning under the rejection avoidance mindset if they were first primed to think collectivistically, even though individualists would not typically react to a rejection avoidance prime. Thus, expected results of this study were fourfold.

First, we expected that collectivists primed to think collectivistically would engage in social tuning when also primed to avoid rejection, but not when primed to seek harmony. In reality, there were no significant differences between collectivists primed to think collectivistically and seek harmony and those primed to think collectivistically and avoid rejection. Collectivist participants under a collectivist mindset prime trended toward exhibiting less prejudice toward homosexuals when avoiding rejection rather than seeking harmony, but this difference was not significant and did not occur across all attitude measures.

Secondly, collectivists primed to think individualistically were not expected to engage in social tuning under either of the interdependence mindset conditions. If interdependence mindset *did* affect collectivists' attitude results in the individualistic condition, those primed to seek

harmony would exhibit more egalitarian views than those primed to avoid rejection. In practice, there were no significant differences between the level of prejudice toward homosexuals exhibited by collectivist participants who were primed to think individualistically across both interdependence conditions. Therefore, collectivist participants in the individualist mindset did not engage in social tuning when in a mindset to seek harmony nor when in a mindset to avoid rejection. However, collectivist participants did trend toward exhibiting less prejudice when primed as individualists to seek harmony for some measures.

Overall, there was no significant difference between the cultural orientation primes or the interdependence primes in the collectivist participants of Experiment 1.

Third, individualists primed to think individualistically were not expected to engage in social tuning under either of the interdependence mindset conditions. This prediction was supported, as individualist participants under the individualist orientation condition did not engage in social tuning when seeking harmony nor when avoiding rejection.

Fourth, individualists primed to think collectivistically were expected to engage in social tuning when also primed to avoid rejection, but not when primed to seek harmony. In reality, individualist participants in a collectivist orientation mindset exhibited equally prejudiced views when seeking harmony and when avoiding rejection. Individualist participants primed to think collectivistically did not engage in social tuning under either of the interdependence conditions, thus rejecting the initial prediction.

Overall, Moroccan participants primed to think collectivistically tended to exhibit less prejudice when avoiding rejection, while U.S. participants primed to think collectivistically

tended to exhibit less prejudice when seeking harmony. However, there is no statistical significance to these trends. Thus, we see that individualists do not engage in social tuning regardless of cultural orientation (individualist / collectivist) manipulation.

The results from the U.S. participants, our individualist sample, are to be expected to a certain extent; these participants were given no specific epistemic or affiliative motivation to engage in social tuning, which previous research shows is imperative for social tuning in individualists.

The most significant potential limitation to the results from Experiment 1 with the Moroccan collectivist participants is that the experiment was conducted in English as opposed to Arabic, Darija (Moroccan Arabic), or French. In addition to being a non-native language for any of these participants, English is inherently an individualistically-charged language. Some research has investigated how language influences cultural orientation, and found that the memories, thoughts, and ideals available to a person are affected by the language in which they are speaking and thinking. Thus, having collectivist participants complete the experiment in an individualist language may have acted as a secondary cultural orientation prime that inadvertently gave the collectivist participants a more individualistic mindset.

Future work should delve further into these influences of language on cultural orientation to see whether these influences are strong enough to act as cultural orientation primes on their own. If so, similar studies to this could be done in the future while aligning the language they are conducted in with the target cultural orientation of the participants. Additionally, no research has yet been done to investigate the physiological response to social tuning; it is not known whether

this alignment of attitudes is physiologically stressful because one is going against one's natural attitudes, or if it actually decreases stress because the person is now more in line with their interaction partner and closer to achieving a sense of shared reality. Finally, recent studies investigating alternative cultural dimensions have suggested that a cultural tightness and looseness may play as significant a role in cross-cultural interactions as cultural orientation does. In this dimension, tight cultures adhere more strictly to social norms and expectations, while loose cultures offer more leniency in the necessity of conforming to such norms. Another future direction could be to replicate the current cross-cultural social tuning work using tight/loose orientation instead of individualist/collectivist orientation.

Though this particular study was unable to offer any conclusive evidence as to the effects of cultural orientation manipulation and interdependence mindset on social tuning across cultures, it is still an important first step in the continuation of cross-cultural psychological research that until now had not yet been extended to cultures like Morocco which exist at a cross-section of opposing placements across cultural dimensions. It is imperative that such cross-cultural research be continued in the future in order to fully develop a comprehensive understanding of how cultural elements affect the formation and maintenance of attitudes and beliefs. This is the sole method through which we, as individualists, collectivists, and humans, can attain understanding across all cultures.

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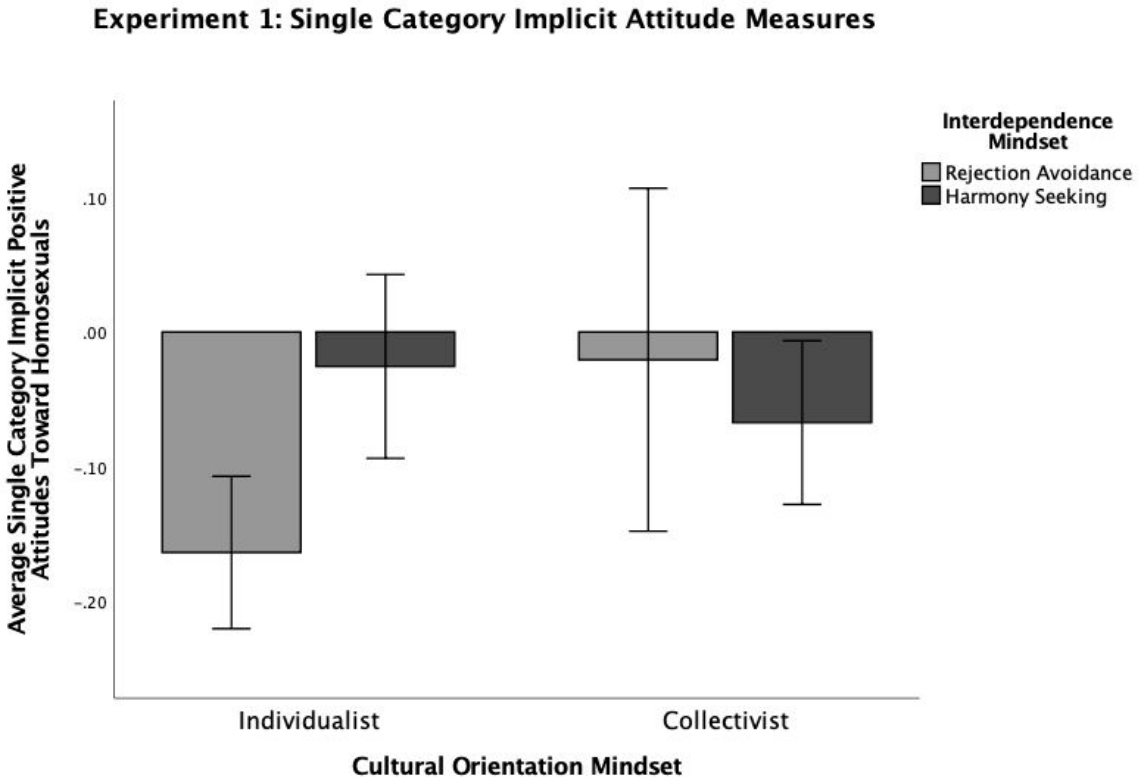


Figure 1. Effect of Cultural Orientation and Interdependence Mindset on Single Category Implicit Attitude Scores in Experiment 1.

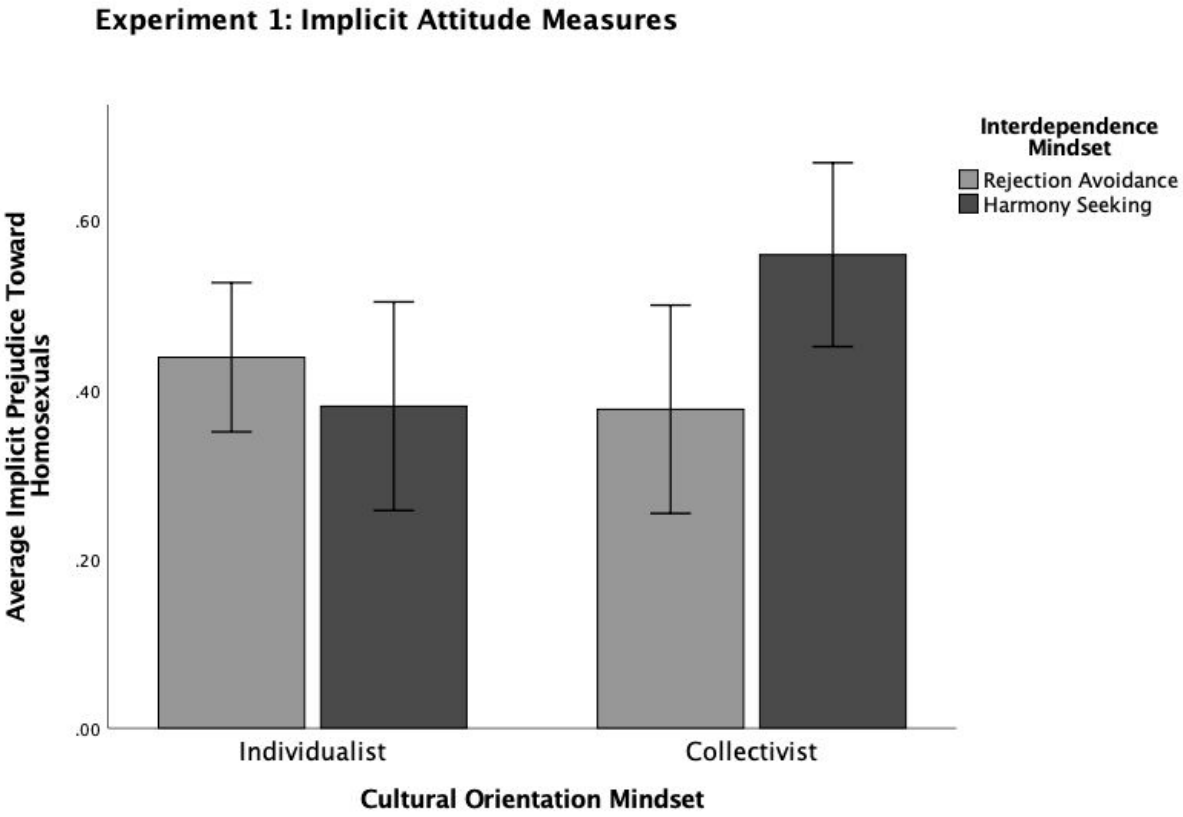
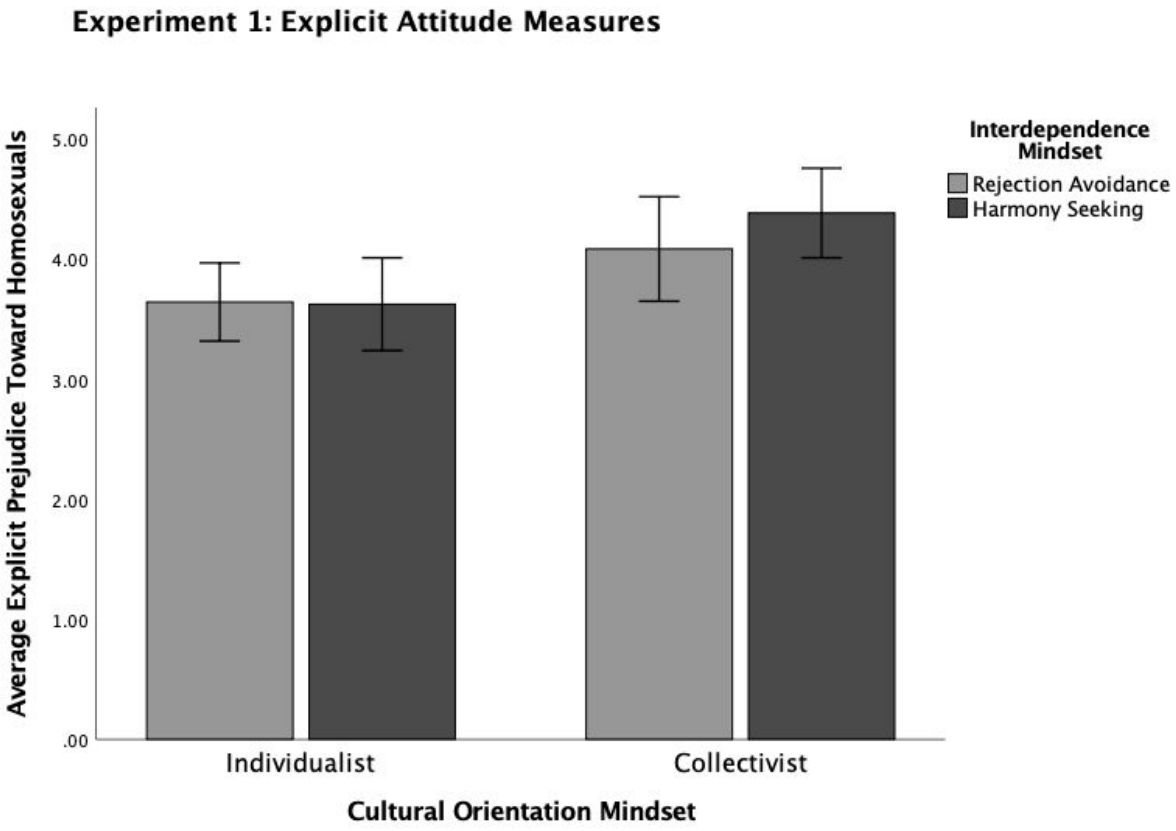


Figure 2. Effect of Cultural Orientation and Interdependence Mindset on Dual-Category Implicit Attitude Scores in Experiment 1.



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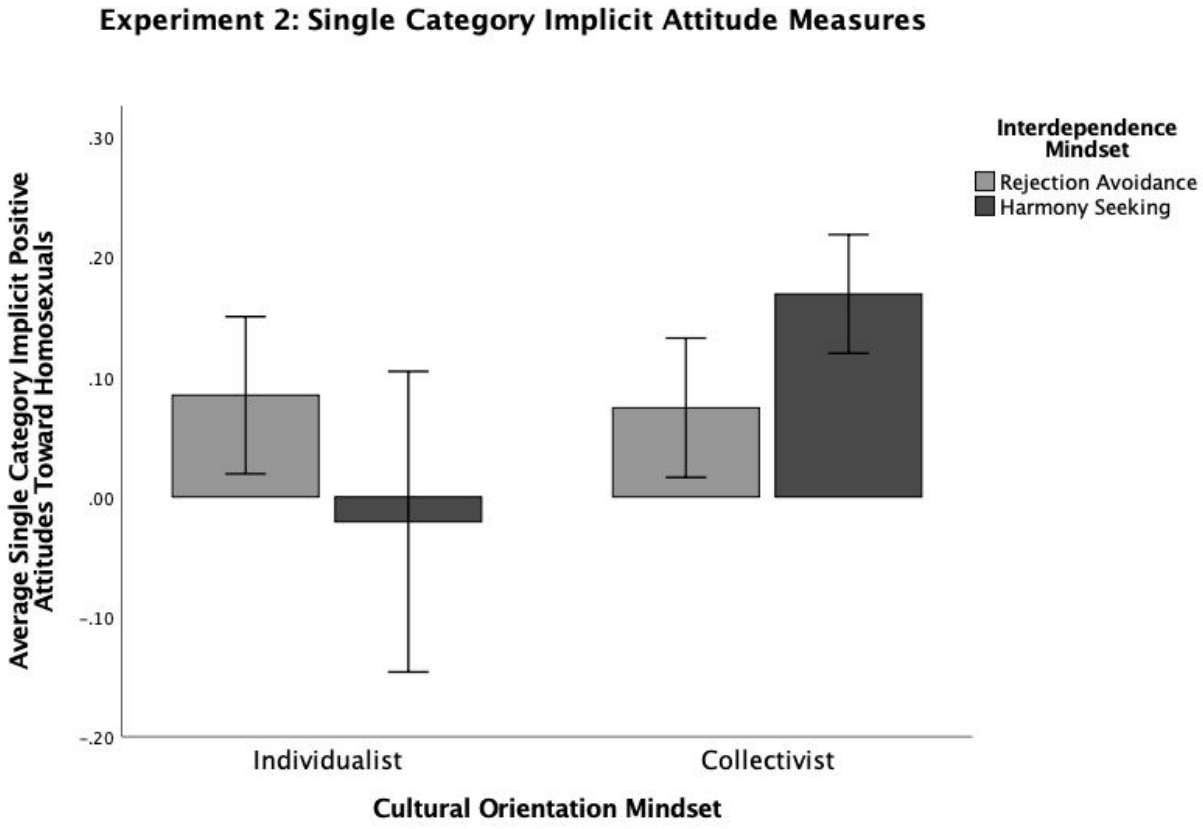

Figure 4. Effect of Cultural Orientation and Interdependence Mindset on Single Category Implicit Attitude Scores in Experiment 2.

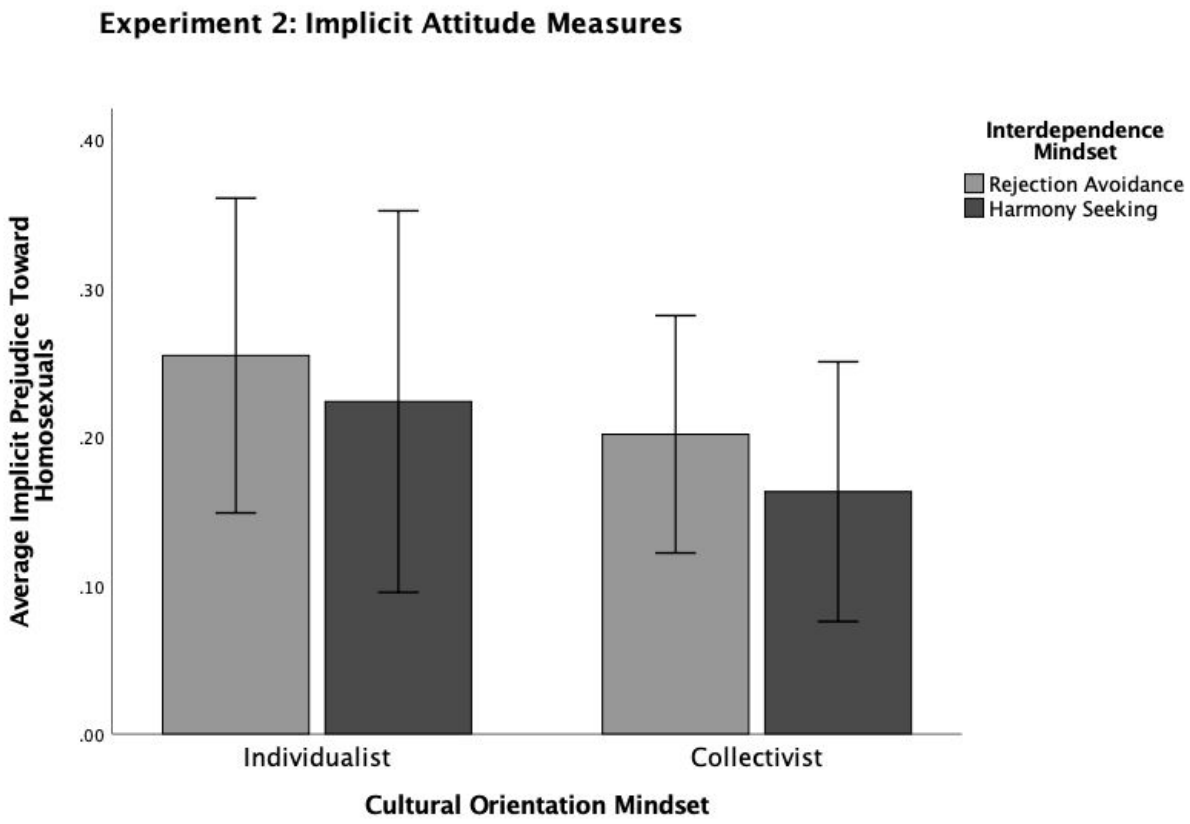

Figure 5. Effect of Cultural Orientation and Interdependence Mindset on Dual-Category Implicit Attitude Scores in Experiment 2.

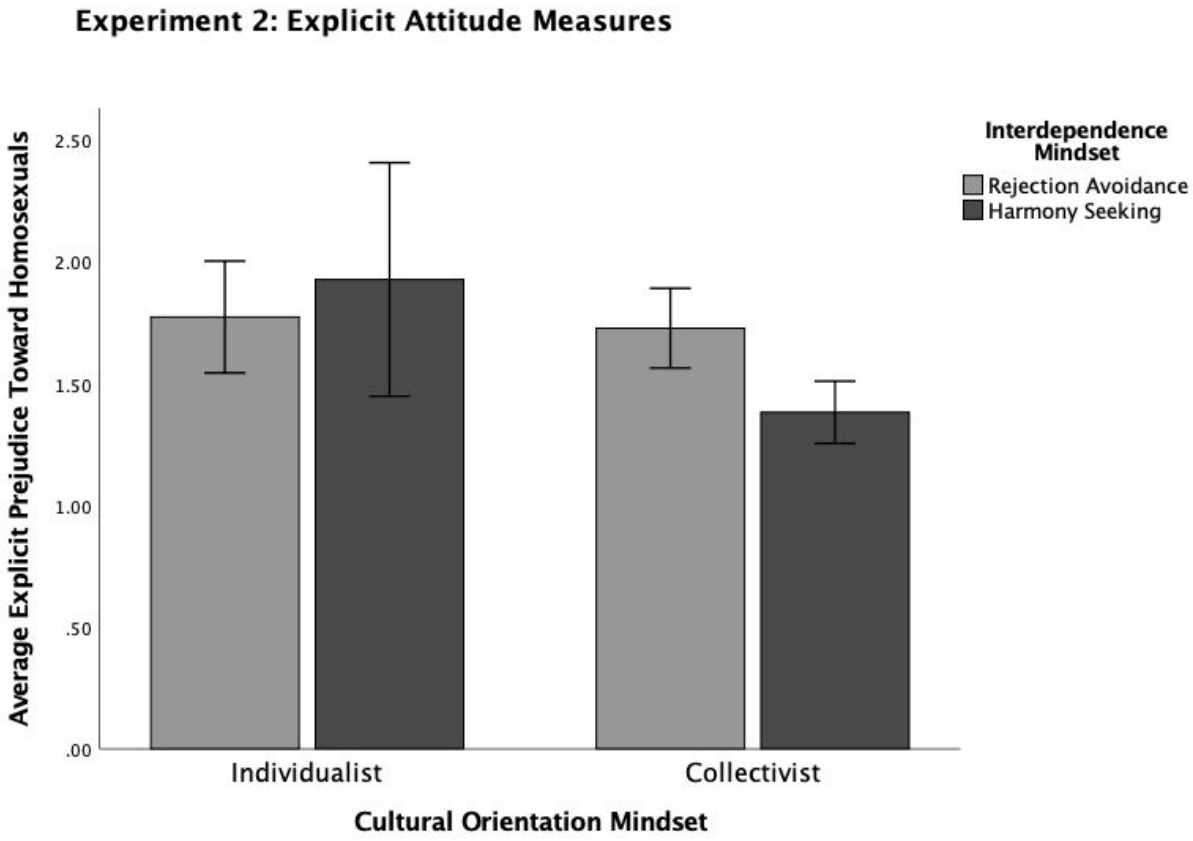

Figure 6. Effect of Cultural Orientation and Interdependence Mindset on Explicit Attitude Scores in Experiment 2.