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Permalink

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Journal

JOURNAL OF CROSS-CULTURAL PSYCHOLOGY, 49(3)

ISSN

0022-0221

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Publication Date

2018-04-01

DOI

10.1177/0022022117746240

Peer reviewed



Kama Muta: Similar Emotional Responses to Touching Videos Across the United States, Norway, China, Israel, and Portugal



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Abstract

Ethnographies, histories, and popular culture from many regions around the world suggest that marked moments of love, affection, solidarity, or identification everywhere evoke the same emotion. Based on these observations, we developed the *kama muta model*, in which we conceptualize what people in English often label *being moved* as a culturally implemented social-relational emotion responding to and regulating communal sharing relations. We hypothesize that experiencing or observing sudden intensification of communal sharing relationships universally tends to elicit this positive emotion, which we call *kama muta*. When sufficiently intense, *kama muta* is often accompanied by tears, goosebumps or chills, and feelings of warmth in the center of the chest. We tested this model in seven samples from the United States, Norway, China, Israel, and Portugal. Participants watched short heartwarming videos, and after each video reported the degree, if any, to which they were “moved,” or a translation of this term, its valence, appraisals, sensations, and communal outcome. We confirmed that in each sample, indicators of increased communal sharing predicted *kama muta*; tears, goosebumps or chills, and warmth in the chest were associated sensations; and the emotion was experienced as predominantly positive, leading to feeling communal with the characters who evoked it.

Keywords

communal sharing, cross-cultural, tears, goosebumps, being moved, *kama muta*

An American soldier being reunited with his daughter, Australian men being welcomed by their lion friend in Kenya, a Thai man’s doctor canceling his huge bill in gratitude for a kindness years before, a Norwegian singer commemorating the massacre of July 22, 2011. All of these describe

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brief video scenes that have gone viral on social media around the world, touted to “make you cry.” It seems that the nationality and identity of protagonists and audiences matter little for evoking this response. Or do they? Certainly the cultural contexts for these emotions are diverse, but are the emotions that emerge essentially the same, even if their cultural significance varies?

We investigated whether individuals from different countries show similar responses to videos like the ones described above. Based on the *kama muta* model (Fiske, Schubert, & Seibt, 2017; Fiske, Seibt, & Schubert, 2017), we expected similar constellations of emotion terms, sensations, valence, appraisals, and outcomes across cultures. We will briefly summarize the literature, then present the *kama muta* model, and then report and discuss our studies collecting responses to video stimuli in seven samples from five countries.

Being Moved: Phenomenology, Elicitors, and Outcomes

In English, *moved* or *touched* or *heartwarming* seem to be the best descriptors of the emotion typically evoked by such video sequences. In the scientific literatures on emotions, philosophy, and artistic expression and reception, researchers have used various labels that are more or less synonymous: *being moved* (Cova & Deonna, 2014; Menninghaus et al., 2015), *sentimentality* (Tan & Frijda, 1999), *elevation* (Haidt, 2000), *kama muta* (Fiske, Seibt, & Schubert, 2017), or, in the musical context especially, *chills* or *thrills* (Konečni, Wanic, & Brown, 2007). A review of the literature shows some overlapping ideas and observations regarding characteristics of these emotional states.

When sufficiently intense, being moved appears to be characterized by at least three types of *bodily sensations*: goosebumps, chills, or shivers; moist eyes or even tears; and often a feeling of warmth in the center of the chest (Benedek & Kaernbach, 2011; Scherer & Zentner, 2001; Strick, Bruin, de Ruiter, & de Jonkers, 2015; Wassiliwizky, Wagner, & Jacobsen, 2015). The *affective character* of this emotional experience appears predominantly positive (Hanich, Wagner, Shah, Jacobsen, & Menninghaus, 2014), although it has been argued by some that the emotion entails coactivation of both positive and negative affect (Deonna, 2011; Menninghaus et al., 2015).

In addition, the motivation of this experience appears to include *approach* tendencies, such as increased prosocial or communal behavior and strengthened bonds (Schnall & Roper, 2012; Schnall, Roper, & Fessler, 2010; Thomson & Siegel, 2013; Zickfeld, 2015). *Elevation* is assumed to motivate affiliation with others as well as moral action tendencies (Pohling & Diessner, 2016). *Being moved* is assumed to lead to a reorganization of one's values and priorities (Cova & Deonna, 2014), to approaching, bonding, helping, as well as promoting social bonds (Menninghaus et al., 2015) and to increased communal devotion (Fiske, Seibt, & Schubert, 2017).

Less consensus has been reached on what exactly evokes such emotional experiences. As the main *appraisal* pattern, researchers have posited themes of affiliation and social relations, realization of core values, or exceptional realization of shared moral values and virtues (Algoe & Haidt, 2009; Cova & Deonna, 2014; Fiske, Seibt, & Schubert, 2017; Menninghaus et al., 2015; Schnall et al., 2010).

Specifically, the *elevation* framework (Haidt, 2000; see Thomson & Siegel, 2017, for a review) argues that *moving* experiences are elicited by observing acts of high moral virtue. Cova and Deonna (2014) have theorized that the emergence of positive core values evokes *being moved*. Menninghaus and colleagues (2015) proposed that *being moved* is elicited by significant relationship or critical life events that are especially compatible with prosocial norms or self-ideals. Frijda (1988) characterized *sentimentality* as evoked by a precise sequence: Attachment concerns are awakened; expectations regarding their nonfulfillment are evoked, and then they are abruptly fulfilled (see also Kuehnast, Wagner, Wassiliwizky, Jacobsen, & Menninghaus, 2014; Tan, 2009). Appraised situations such as these can arouse strong feelings of *being moved* or *touched* (Konečni, 2005; Scherer & Zentner, 2001; Sloboda, 1991). These emotion constructs have typically been

posited to occur empathically through narratives, theater, movies, or music, rather than resulting from firsthand encounters.

Research assessing *moving* or *touching* experiences has been conducted using U.S. American (Schubert, Zickfeld, Seibt, & Fiske, 2016; Thomson & Siegel, 2013), British (Schnall & Roper, 2012; Schnall et al., 2010), French-speaking Swiss (Cova & Deonna, 2014), German (Kuehnast et al., 2014; Menninghaus et al., 2015; Wassiliwizky, Jacobsen, Heinrich, Schneiderbauer, & Menninghaus, 2017), Japanese (Tokaji, 2003), Dutch (Strick et al., 2015), Norwegian (Seibt, Schubert, Zickfeld, & Fiske, 2017), and Finish (Vuoskoski & Eerola, 2017) participants. Yet each of these studies has used different elicitors and different methods, so, to date no study has systematically compared responses to moving stimuli with the same measures across a range of cultures.

The *Kama Muta* Model: Intensified Communal Sharing as a Universal Elicitor

Interviews in many different cultural contexts and languages, as well as ethnographic material from various places and times, suggest that people from a wide range of cultures and times have similar feelings and sensations in a set of situations that is broader than previously assumed, yet sharply demarcated. For example, elevation theory states that *elevation* is primarily a witnessing emotion (Algoe & Haidt, 2009; Haidt, 2000; Thomson & Siegel, 2017) yet the ethnographic material suggests that in many cultures and times, people report the typical being-moved sensations and motivations when feeling one with a divinity—or with their football team (Fiske, Seibt, & Schubert, 2017).

Furthermore, while some theories stress prosocial norms (Menninghaus et al., 2015), moral beauty (Haidt, 2000), or core values (Cova & Deonna, 2014) as central appraisal themes, interviews and ethnographic material suggest that a person who sees a very cute sleeping infant or one who nostalgically remembers her first love can also feel this emotion. Experiments show that seeing cute kittens and puppies also evokes it (Steinnes, 2017). Rather than any specific deed, the affection itself in the perceiver seems to evoke the feeling in these cases. While some theories stress as central attributes of the emotion the coactivation of sadness and joy (Menninghaus et al., 2015), or the contrast between loss and attachment (Neale, 1986), we have found many reports where there is no apparent negative side—as when a guy who is deeply in love proposes to his girlfriend, and both feel this emotion intensely (the “Proposal” video in the current study had this theme).

Kama muta theory predicts that a *sudden intensification of communal sharing* evokes this emotion, and that it is universal because the underlying social-relational dynamic is universal. This prediction is based on Relational Models Theory (Fiske, 1991, 1992, 2004b), which posits four culturally universal relational models to coordinate social life, implemented in culture-specific ways. These models are Communal Sharing (CS), Authority Ranking (AR), Equality Matching (EM), and Market Pricing (MP), which are based, respectively, on equivalence, legitimate hierarchy, even matching, and proportionality.

Individuals in communal sharing relations are motivated to be united and caring. Communal sharing typically underlies close relations among kin, in families, between lovers, and in close-knit teams, but is also used to construct larger and more abstract social groups and identities. Individuals in a communal sharing relation focus on what they have in common, and sense that they share some important essence such as “blood,” “genes,” national essence, or humanness. Communal sharing is communicated by and recognized from behavior that connects bodies or makes bodies equivalent and thus *indexes* the sharing of substance: touch, commensalism or feeding, synchronous rhythmic movement, exchange of bodily fluids, transmission of body

warmth, and body modification (summarized as *consubstantial assimilation* by Fiske, 2004b). Communal sharing is also recognized from behavior that responds to the needs of the relational partner without expecting to be repaid, even among strangers.

Relational models theory thus has a broad yet precisely characterized notion of communal sharing relationships with different types of entities, such as humans, animals, deities, music, or nature. Communal sharing is operating when people perceive themselves as, in some significant respect, essentially the same as these other entities, often because they have a strong experience of consubstantial assimilation, as in celebrating the Eucharist. Communal sharing relationships can be stable or transient, and perceived by both sides or not. We infer them from acts of kindness and of consubstantial assimilation. This wide range of circumstances fits the wide range of constellations where we found evidence of kama muta experiences.

The universal importance of communal sharing makes it likely that there is a positive emotion signaling the event of a communal sharing relation suddenly intensifying (Fiske, 2002, 2010; Frijda, 1988). We posit that this is the emotion that people often call *being moved*. In a number of languages, labels for this emotion use similar metaphors of passive touch or passive movement (or stirring), or warmth in the chest or heart. In Mandarin, you might say you feel *gǎn dòng*, 感动; in Hebrew, *noge'a lalev*, נוגע ללב; in Portuguese, *comovido/a*; and in Norwegian, *rørt*. This emotion leads in turn to an increase in communal feelings toward those who evoked the emotion. Individuals make sense of and share this emotion through culture-specific concepts and practices (Barrett, 2014; Wierzbicka, 1999).

English speakers sometimes use *moved* or *touched* for other experiences than the ones we denote as kama muta; conversely, they may denote kama muta with other terms (e.g., *nostalgia*, *rapture*, *tenderness*). Also, communal sharing intensifications may sometimes go unrecognized and unlabeled, yet still evoke the same motives. However, we have found that in many languages, there exist one or more words that are *typically* used for the emotion evoked by sudden intensifications of communal sharing. For scientific purposes, we cannot rely on imprecise and inconsistently used vernacular words from living languages. To give this construct a precise, consistent scientific definition, we name it with a lexeme from a dead language: *kama muta* (Sanskrit, literally meaning “moved by love”), which may or may not closely correspond to one or more emotion terms in any given language.

Kama Muta as a Universal Emotion

We predict that universally, a kama muta response is elicited by a sudden intensification of communal sharing, and that the emotion in turn makes persons affectively devoted and morally committed to communal sharing with those who evoked the emotion in them, and to a lesser degree with some others. In English, communal sharing relationships are typically labeled and reported as *closeness* (Aron, Aron, & Smollan, 1992). For Norway and the United States, we found indeed that an appraisal of increased *closeness* was related to *being moved* (Schubert et al., 2016; Seibt et al., 2017). However, no evidence has been presented yet on the universality claim, nor on the proposition that kama muta leads to feeling close and communal with the person who evoked it.

As explained above, communal sharing is recognized from acts of consubstantial assimilation, or from acts of great care. Consubstantial assimilation, in turn, encompasses hugs, reunions, wishing or imagining another near, kissing, holding hands, sharing food, or dancing or singing in synchrony. Acts of great care are characterized by attending to the needs of another, which can range from simple kindness to heroic sacrifice. Both should lead to *perceived closeness*. In addition, when experienced between an individual and a group, consubstantial assimilation should be perceived as *inclusion*, while acts of great care should be perceived as *moral acts*. Both should make the perceived actor seem particularly *human*. In both cases, *overcoming obstacles* on the way to closeness evokes suspense that should increase the perceived suddenness of communal sharing intensification.

To start examining the claim that kama muta is universally generated by sudden intensification of communal sharing, we sampled from cultures in different regions of the world. These cultures differ in emotional expressivity, as well as in some factors potentially related to it (some sorts of individualism and collectivism, gender equality, and historic heterogeneity; Matsumoto & Seung Hee Yoo Fontaine, 2008; Rychlowska et al., 2015). In addition, we were especially interested in comparing Western and East Asian cultures, as these have been found to differ markedly in the configuration and dynamics of facial emotional expression (Jack, Garrod, Yu, Caldara, & Schyns, 2012). We build on two prior studies that evoked kama muta through autobiographic memories and through a video (along with other videos eliciting other emotions) in Norway and the United States and measured five appraisals (Seibt et al., 2017). The research question is whether people in a wider range of cultures experience kama muta and whether these experiences are predicted by measures indicating intensified communal sharing.

Overview of the Current Studies

We conducted studies in the United States, Norway, China, Israel, and Portugal. An overview of the different samples including information on their demographics, sample location, and number of stimuli is provided in Table 1. Apart from being conducted in different languages, the procedures, stimuli, and materials were mostly identical but differed on some occasions as highlighted below. We identified a set of labels for the kama muta experience in each of the five languages.

We presented the same set of four videos in all five countries, along with additional videos that were chosen to fit the culture where the study was run, to have both overlap and variety (we also included one comic to increase stimulus variability). We used video stimuli because they had been shown to evoke the emotion in many participants in the United States and Norway (Seibt et al., 2017). We selected them based on a search for keywords such as “moving” or “heartwarming” in various languages, and based on having similar length (90-180 s).

Based on the universality claim of kama muta theory, we hypothesized that across all five countries we would detect kama muta experiences as a co-occurrence of using kama muta labels to describe the experience, reporting typical sensations, a positive experience, and feeling communal toward the protagonist as an outcome. We further expected that participants across all five nations would experience kama muta when communal sharing relations suddenly intensify. Specifically, the intensity of kama muta as indicated using the labels identified should be predicted (Hypothesis 1) by the judged positivity of the feeling, more than by its negativity in all five countries, and (Hypothesis 2) by the sensations of tears, a warm feeling in the chest, and chills/goosebumps in all five countries. We further predicted (Hypothesis 3) that the intensity of kama muta relates to feeling unity and closeness *with the protagonist* in the video in all five countries. Based on kama muta theory’s claim on the central appraisal pattern, we hypothesized that the intensity of kama muta would be predicted (Hypothesis 4) by the appraisal of increased closeness *among protagonists* in all five countries.

All studies presented here were examined and approved by the Internal Review Boards of the respective institutions at which they were performed. For all studies, participants were presented with written information about study procedures, and the contact information of the principal investigator. By proceeding with the study, participants indicated their consent.

Studies 1-7

Method

Participants. In total, 671 participants were recruited through various means at five different sites: the United States, Norway, China, Portugal, and Israel. An overview of the study details is presented in

Table 1. Overview of Different Samples Including Information on Demographics, Location Site, Language, Stimuli, and Exclusion Criteria.

| Sample | Demographics | | | | | | | | | | Being moved measure |
|-----------|--------------|-------------------------------------|-----------|------------------------------------|---|-------------------------|--------------------------------|--|---------------------------|---|---------------------|
| | n | $n_{\text{female}}/n_{\text{male}}$ | Age range | $M_{\text{age}} (SD_{\text{age}})$ | Sample location | Language | Stimuli (see Table S2) | Stimuli language | Exclusion criteria | | |
| U.S. I | 49 | 26/23 | 21-61 | 35.16 (11.50) | Amazon MTurk | English | 10 videos | English | Video length ^a | Moved Touched | |
| U.S. II | 101 | 62/39 | 21-67 | 34.67 (10.41) | Amazon MTurk | English | 9 videos, 1 comic | English | Video length ^a | Moved Touched | |
| Norway I | 99 | 69/30 | 19-64 | 32.72 (12.66) | University of Oslo, Social Media | Norwegian ^b | 10 videos | English | Video length ^a | Beveget Rørt | |
| Norway II | 93 | 69/24 | 18-74 | 38.11 (13.82) | University of Oslo, Social Media | Norwegian ^b | 9 videos, 1 comic | English | Video length ^a | Beveget Rørt | |
| China | 111 | 74/37 | 18-28 | 20.77 (2.09) | Fudan University | Chinese (Mandarin) | 6 videos, 1 comic ^c | Chinese subtitles | — | 感动 触动 | |
| Portugal | 77 | 43/10/24 | 20-43 | 27.23 (6.13) | Social Media | Portuguese ^b | 10 videos, 1 comic | Portuguese description prior to each video | Video length ^a | Comovido | |
| Israel | 127 | 84/24/19 | 18-66 | 30.41 (9.18) | Open University of Israel, Social Media | Hebrew | 9 videos, 1 comic | Hebrew subtitles | Video length ^a | נגע לליבך משוה הויז כב ריגש אורזך | |

^aExclusion was based on cases where the screen was displayed shorter than the actual length of the video (with a buffer of 10 s), or for longer than 10 times its length (this allowed for long loading times).

^bSome measures not relevant to the present hypotheses were presented in English.

^cIn contrast to the other countries stimuli were not presented in random order.

Table 1, and descriptive statistics for the respective samples are provided in Supplementary Tables S1 and S2. Participants were excluded based on the duration of video presentation (see Table 1). In the Chinese sample, four cases were excluded because of a computer error. Two participants were excluded because they were younger than 18. The final dataset consisted of 624 participants (407 females, 178 males, 39 unspecified gender) ranging from 18 to 74 years of age ($M = 29.90$, $SD = 11.71$). With a few exceptions in Norway and Portugal, items were completed in the languages of the respective countries; hence, language is ignored as a factor. We drew two samples each from the United States and Norway, because we introduced a few changes after running the first wave in these two countries (see below) and decided to re-run the study in these countries with new stimulus sets and the changes in place, to broaden our evidence base. Nevertheless, the changes were small enough to justify including both samples in the final analysis.

Overview and design. The topic of the studies was introduced as emotional reactions and media. After giving informed consent, participants were told that they were going to watch a number of videos. In most samples, participants were required to watch two videos and invited to continue watching (up to 10). In the Chinese sample, participants were instructed to complete all seven. Stimuli were presented in random order except for the Chinese sample.

Materials. A total of 26 videos and one comic strip were utilized across all samples. An overview of the allocation and a summary of all stimuli are provided in the Supplementary Material (Table S2). We used one set of 10 videos in both the U.S. I and Norway I samples, and a different set in the U.S. II and Norway II samples. We showed three unique videos in China and two in Portugal. All other videos overlapped among the different samples, and four videos were shown in all five countries.

Following each video clip, participants were presented with the questions “How moved were you by the video?” and “How touched were you by the video?” on 5-point scales anchored at *not at all* and *very much*. See Table 1 for the respective translations. In the Portuguese sample, only one item was used, while the Israeli version included an additional item asking about “How stirred were you by the video?”

Valence was assessed by two items: “How positive [negative] is the feeling elicited by the film?”¹ on the same 5-point scale. For bodily experiences, we asked, “What bodily reactions did the film elicit in you? Mark all the bodily reactions that you were or are still experiencing.” Participants answered items on goosebumps, chills, moist eyes, crying, tight throat, and a warm feeling in the chest, along with some filler items, on 5-point scales anchored at *not at all* and *very much*. In the first U.S. and Norwegian samples, these sensation items were rated on dichotomous scales and there was no item for crying.

Five appraisals were assessed in all studies: “One or several of the characters did something that was morally or ethically very right” (*moral*), “All or some characters in the movie felt closer to each other at the end (compared with at the beginning)” (*closeness*), “Somebody who was excluded at first was included at the end” (*inclusion*), “All or some of the characters overcame big obstacles during the events” (*obstacles*), and “All or some of the characters became somehow more human during the events” (*human*). These were rated on 5-point scales ranging from *not at all* to *to a high degree*. Afterward we assessed, among some additional responses to the video clips, feelings of closeness to the main character(s) of the video clips and how much unity the video clip elicited on 5-point scales ranging from *not at all* to *to a high degree*.

Results

According to our hypotheses, the intensity of kama muta should be predicted in all five countries by (H1) the judged positivity of the feeling, more than by its negativity; (H2) the sensations of

tears, a warm feeling in the chest, and chills/goosebumps; (H3) feeling unity and closeness with the protagonist; and (H4) the appraisal of increased closeness among protagonists. We tested each of these hypotheses in separate multilevel models for each sample, regressing a kama muta index on these various predictors. We then combined the samples meta-analytically.

General modeling strategy. We tested our hypotheses with multilevel regression procedures (*lme4* in *R*). Participant and video were added as random factors. Intercepts were allowed to vary randomly according to both participant and video to model different levels of the dependent variable for the different videos and participants (Judd, Westfall, & Kenny, 2012). For each sample, the unstandardized regression coefficients were standardized and employed as an estimate of effect size r (Bowman, 2012). The seven effect sizes were meta-analyzed utilizing the *metafor* package (Viechtbauer, 2010) in *R*. For each relation, a random effects model was fitted using a restricted maximum likelihood procedure (REML). Effect sizes were tested for differences across samples.

Throughout this article, we report standardized effect sizes (r) and their correspondent 95% confidence intervals in brackets [a, b]. We do not present p values for the hypothesized effects because their significance can be easily inferred from the confidence intervals. Detailed information on differences across samples, videos, or gender of the participants is presented in the Supplementary Material.

Index of being moved. To evaluate whether ratings of being *moved* and being *touched*, or their translation in other samples, could be combined into a common index, we estimated an unconditional three-level hierarchical model in HLM (Hierarchical Linear Modeling Software) for each separate sample (Nezlek, 2016). Reliabilities at Level 1 were sufficient, ranging from .90 to .96 (see Supplement for details). Therefore, ratings of being moved and touched were averaged into the main dependent variable (hereafter, “moved”) of the study after subtracting 1 so that the variable ranged from 0 to 4. For the Israeli study, three items were combined, whereas the Portuguese study included only one item, which was utilized as the main dependent variable.

Valence of being moved. To assess whether kama muta is experienced as a positive feeling (Hypothesis 1), we regressed being moved on ratings of how positive and negative the feeling was for each sample separately. The interaction of positivity and negativity was not significant in any sample and, therefore, dropped for the final model. The final random effects model indicated an overall effect size estimate of $r = .59$ [.53, .65] for positivity on being moved (Figure 1). The overall effect size of negativity on being moved was significantly smaller, $r = .16$ [.08, .23] (Figure 2). Effect sizes differed significantly for positivity, $Q(6) = 31.82$, $p < .001$, $I^2 = 82.46$ [56.91, 96.69], as well as negativity, $Q(6) = 25.92$, $p < .001$, $I^2 = 75.75$ [40.79, 94.89], across samples.

Sensations. To test Hypothesis 2, we combined items on goosebumps and chills into a chills score, while ratings on moist eyes, crying, and a tight throat were combined into a tear score. Being moved and touched was regressed on the chills score, on the tear score, as well as on the item on warmth in the chest, without interactions, in three separate models for each sample. The overall effect size of crying on being moved was $r = .54$ [.46, .63] (Figure 3), followed by warmth, $r = .41$ [.31, .50] (Figure 4), and finally chills, $r = .31$ [.25, .37] (Figure 5). Effect sizes for crying differed for the different samples, $Q(6) = 107.68$, $p < .001$, $I^2 = 90.55$ [77.08, 97.88]. The same held true for warmth, $Q(6) = 50.35$, $p < .001$, $I^2 = 89.78$ [74.60, 97.95], and for chills, $Q(6) = 19.08$, $p = .004$, $I^2 = 66.27$ [19.91, 92.17].

Communal outcome. Items on experiencing unity and closeness with the protagonists of the videos were combined into a communal outcome index. For each sample, being moved was regressed

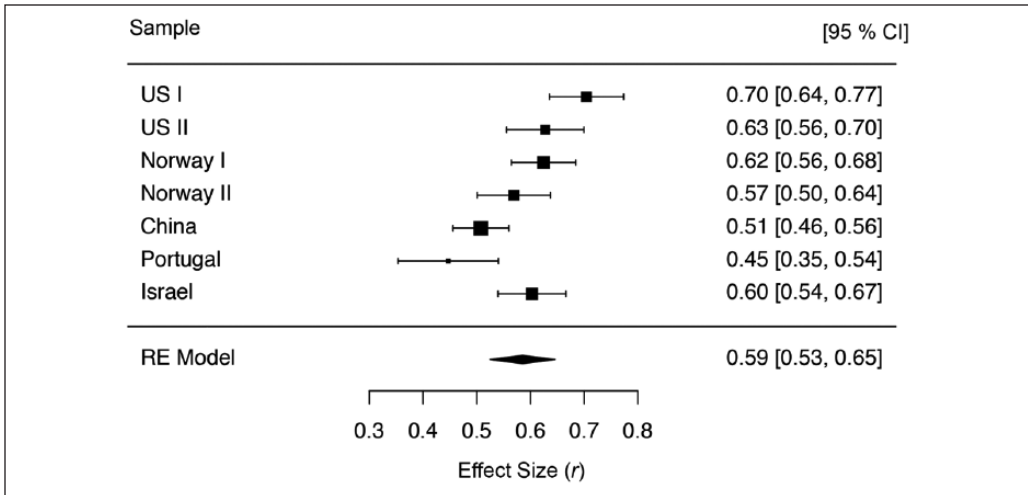


Figure 1. Forest plot of random effects meta-analysis on the effects of positivity on the kama muta index while controlling for negativity across seven different samples. Note. Error bars represent 95% confidence intervals.

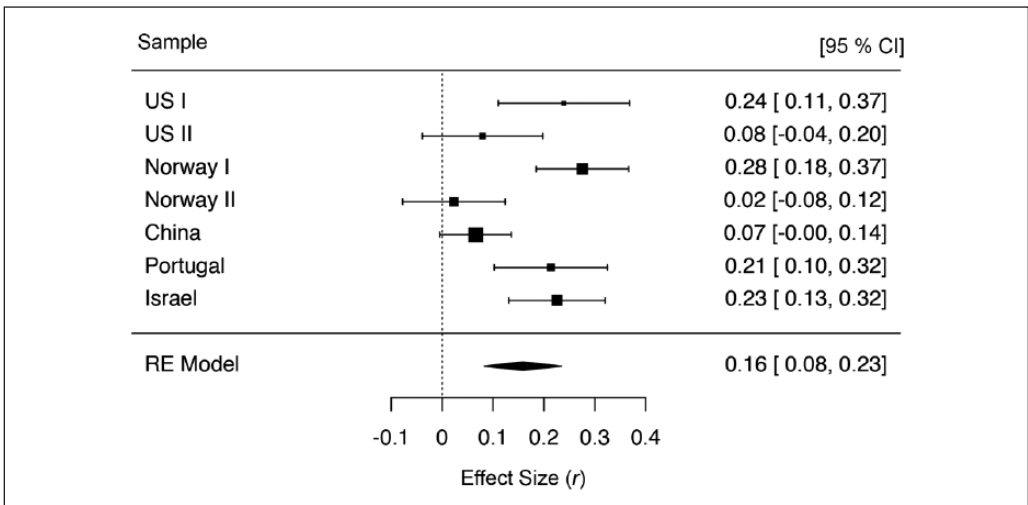


Figure 2. Forest plot of random effects meta-analysis on the effects of negativity on the kama muta index while controlling for positivity across seven different samples. Note. Error bars represent 95% confidence intervals.

on communal outcome. The overall effect size of communal outcome was $r = .59$ [.51, .66], supporting Hypothesis 3 (Figure 6). Effect sizes differed for the different samples, $Q(6) = 50.91, p < .001, I^2 = 89.19$ [73.35, 97.86].

Appraisals. To test our fourth hypothesis, in a first model, we regressed being moved on the closeness item. The overall effect size was $r = .29$ [.22, .37] (Figure 7), with effect sizes differing across samples, $Q(6) = 24.46, p < .001, I^2 = 77.24$ [43.50, 95.56].

In a second model, being moved was regressed on all five appraisal items. In this joint model, being moved was predicted by increased closeness, $r = .12$ [.09, .16], perceiving actions as

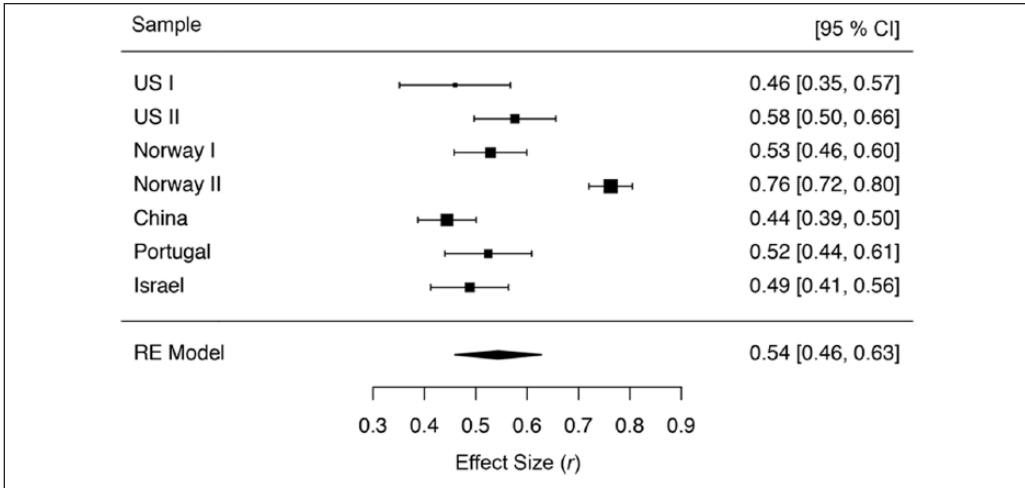


Figure 3. Forest plot of random effects meta-analysis on the effects of tears on the kama muta index across cultures.

Note. Error bars represent 95% confidence intervals.

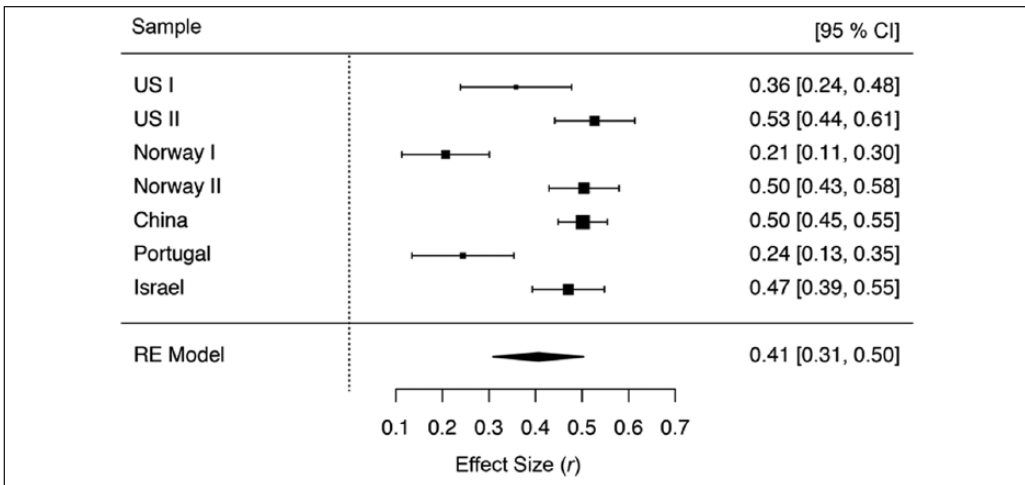


Figure 4. Forest plot of random effects meta-analysis on the effects of warmth on the kama muta index across cultures.

Note. Error bars represent 95% confidence intervals.

morally right, $r = .21$ [.17, .25], perceiving someone becoming more human, $r = .19$ [.11, .27], and perceiving that obstacles were overcome, $r = .08$ [.04, .13]. Inclusion had no overall effect $r = .01$ [-.02, .05]. Effect sizes did not differ significantly across samples, except for becoming more human.

General Discussion

In seven samples from five countries in East Asia, the Middle East, North America, and Northern and Southern Europe, we measured responses to videos. We used a total of 26 videos, and measured the amount of kama muta evoked using appropriate terms translating *moved* and *touched*

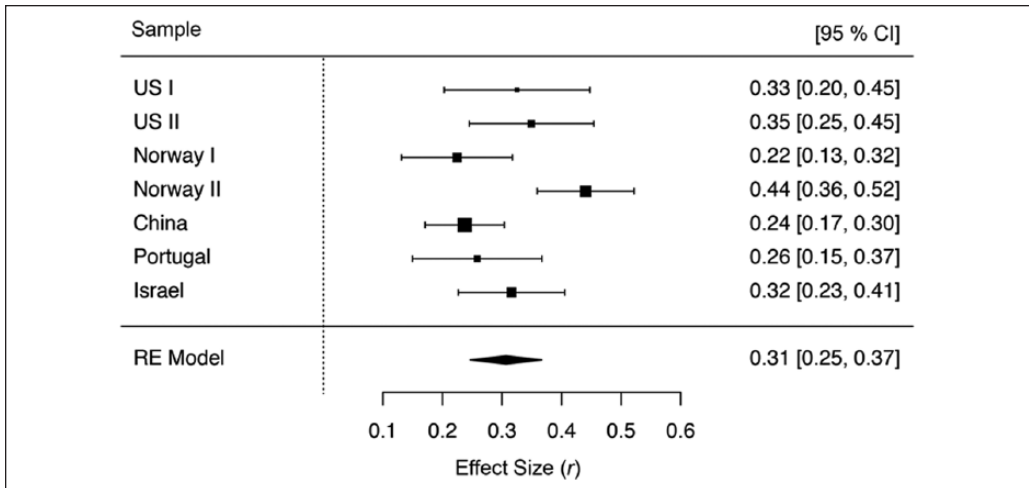


Figure 5. Forest plot of random effects meta-analysis on the effects of chills on the kama muta index across cultures.

Note. Error bars represent 95% confidence intervals.

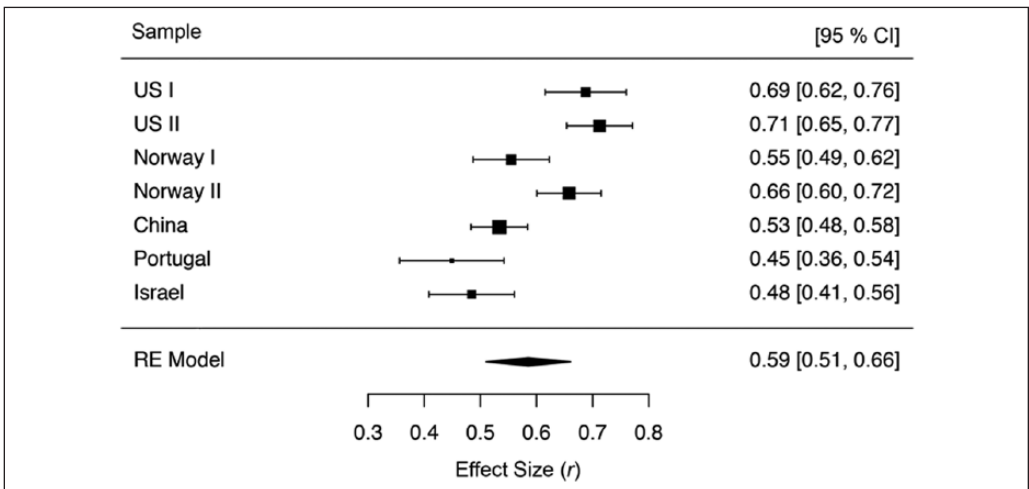


Figure 6. Forest plot of random effects meta-analysis on the effects of the communal outcome measure on the kama muta index across cultures.

Note. Error bars represent 95% confidence intervals.

in five languages. In addition, we assessed the valence of the experience, a set of sensations, appraisals, and communal outcomes. As predicted, in each sample, we found that the kama muta index was related to experiencing the emotion as positive when controlling for negativity, and, to a much smaller extent, also as negative when controlling for positivity. Kama muta covaried most strongly with tears, then with a feeling of warmth in the chest, and least strongly with chills or goosebumps. The kama muta index was predicted by judged increases of closeness among the characters in the video and by three other appraisals. It was related with feeling unity and closeness with the characters.

We focused in the current study on identifying kama muta across cultures, rather than on explaining differences among cultures. In discussing our results, we will thus focus on the overall

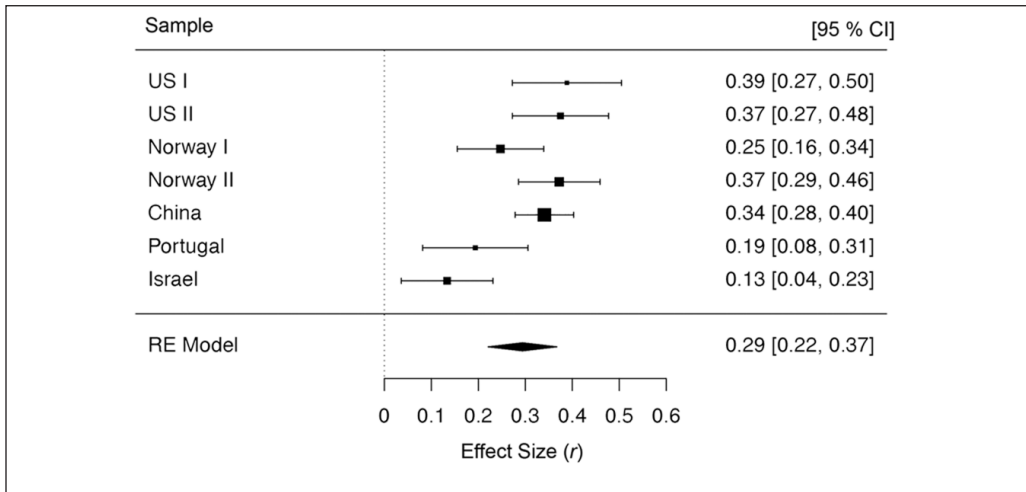


Figure 7. Forest plot of random effects meta-analysis on the effects of closeness of the protagonists on the kama muta index across cultures.

Note. Error bars represent 95% confidence intervals.

picture. We briefly discuss the cultural heterogeneity again in the section on limitations at the end. While there was significant variation in all effects across samples, the effects were positive and significant in each sample individually. The kama muta model derives a universal emotion with many names from a universal relational model (Fiske, 1991; Fiske, Schubert, & Seibt, 2017; Fiske, Seibt, & Schubert, 2017). Other models of being moved do not discuss the question of cultural differences or similarities regarding this emotion, nor do other models address the issue of the differences in meaning of vernacular lexemes in different languages (Wierzbicka, 1999). Our cultural comparisons revealed similar appraisals, sensations, valence, and outcomes of kama muta across the five countries. This lends support to the prediction that kama muta is a universal emotion; regardless of whether and how it is labeled in vernacular usage.

Valence

Two aspects are noteworthy about our findings regarding valence: The first is the strong and consistent characterization of kama muta as a positive feeling across all samples. The second is the value in assessing positivity and negativity separately. Across all samples, we found that greater negativity predicted greater kama muta when its shared variance with positivity was controlled for. However, this effect was much smaller than the one for positivity. We would not have found this pattern if we had assessed valence on only one dimension.

It is possible that the instances where negativity contributed to being moved were, in fact, not kama muta experiences, but resulted from a broader usage of the terms we used to assess kama muta. It is also possible that some negativity *prior to the eliciting event* increased kama muta (Fiske, Seibt, & Schubert, 2017). Supporting this reasoning, Schubert et al. (2016) found that when removing the linear and quadratic trends, ratings of sadness had no cross-correlation with ratings of being moved for a continuous measure of both along watching videos like the ones shown in the present study. Finally, the valence of the feeling may be complex for some people watching some videos. The larger picture is, however, that kama muta is predominantly a positive emotion, elicited by a positive appraisal. Our valence results fit several being-moved models that predict being moved to be a predominantly positive emotion (Cova & Deonna, 2014; Hanich et al., 2014; Kuehnast et al., 2014; Tokaji, 2003), yet are at odds with others that see it as predominantly negative (Neale, 1986).

Sensations

Across five different regions, languages, and cultures, we found the same three sensations to be predictive of kama muta. This supports our model of kama muta as a universal emotion with coordinated changes across several systems, resulting in an experience consisting of several components. We measured tears with a combination of *moist eyes*, *crying*, and *tight throat*; and chills as a combination of *chills* and *goosebumps*. Overall, tears were most strongly correlated with being moved. This, along with the fact that being moved was characterized as a predominantly positive feeling, suggests that kama muta weeping is different from sadness weeping. This is no consensus in the literature on crying, and several authors make an argument that negative components in the being-moved experience such as helplessness provoke the tears (Miceli & Castelfranchi, 2003; Vingerhoets & Bylsma, 2015). However, the present data do not support that argument.

A feeling of warmth in the chest was the second sensation. At this point, it is unclear what causes this sensation, possibly changes in cardiac activity, vagal tone (Keltner, 2009), or feedback from them. This feeling may be related to a gesture we often observe when people are strongly moved: placing one or both hands over the center of the chest (something that people are not always aware of doing). Chills and goosebumps were the third sensation related to kama muta. Although these skin sensations also occur in fear responses and when having uncanny experiences (and when exposed to low ambient temperature), their combination with tears, warm feelings in the chest, and positivity seems to be specific to kama muta (cf. Seibt et al., 2017).

Appraisals

The main appraisal we tested was one of increased *closeness*, an operationalization of our construct of a sudden intensification of communal sharing. As predicted, viewers' appraising characters as becoming *closer* significantly predicted increases in kama muta. In addition, increased closeness remained a significant predictor after controlling for appraisals of morality, becoming more human, inclusion, and overcoming obstacles.

When testing all appraisals, morality, increased closeness, becoming more human, and overcoming obstacles each predicted kama muta. How do people judge morality? Acting morally is doing the right thing, and what is the right thing depends on which relational model is applied (Rai & Fiske, 2011): Acts are seen as moral when they fulfill the ideals of the expected relational model and as immoral when the relational model is violated. We believe that the morality appraisal is best understood in this way: Somebody was seen as acting morally because she or he fulfilled the ideals which underlie communal sharing relationships such as compassion, responsiveness to needs, kindness, generosity, and inclusiveness. Communal sharing consists in need-based sharing and consubstantial assimilation: Where one is, people expect the other. However, many individual acts are primarily one or the other: Either the act consists in saving someone, helping and protecting them, or it consists in touching, hugging, kissing, approaching, and synchronizing one's movements to the other. So people observing acts of need-based giving may infer *closeness* but they are most likely to focus first and foremost on the need-based giving, which is best captured by the morality appraisal. However, morality is not a very sharply defined construct as a folk concept or as a scientific concept (Haste, 1993); so future studies will need to corroborate this interpretation by asking more specific questions.

Seeing someone as *becoming more human* implies that someone can be more or less human (Haslam, 2006). Whereas the dehumanization and inhumanization constructs have generally been studied as perceptions of groups, here, we assessed humanness judgments about individual characters. Given that this judgment is rather remote from the actions depicted in the videos, it is unclear whether it leads up to the emotion or is a consequence of it. Even though we call them appraisals, we do not believe these judgments, as such, directly cause the emotion. Rather, we

believe these judgments of humanization indicate the perception of an intensification of communal sharing that causes being moved. Perceptions of humanness may contribute to kama muta because they indicate that the characters are seen as relatable and sympathetic, or because they indicate that the characters are seen as sharing something essential in common with the participant (Haslam, 2006; Kteily, Bruneau, Waytz, & Cotterill, 2015; Leyens et al., 2000). Sharing a common essence, in turn, is the core of how we represent communal sharing relationships (Fiske, 2004a). Thus, the findings for the humanness appraisal can be explained by the kama muta model, but they are not a test of the model.

Our results lend cross-cultural empirical support to theoretical analyses seeing being moved as evoked by communal feelings or acts: solidarity, a communion of souls, a generous act, or reconciliation (Claparède, 1930); fulfillment of the phantasy of union (Neale, 1986); resolution of attachment concerns (Frijda, 1988); love/acceptance (Panksepp, 1995); reunification (Tan & Frijda, 1999); love, forgiveness, sacrifice, and generosity (Konečni, 2005); prosocial acts or reconciliatory moments (Hanich et al., 2014). Yet many of these models mention not one, but several alternative elicitors, not only the communal ones listed here but also others. The kama muta model traces all kama muta back to a common core: the sudden intensification of communal sharing.

Perhaps the most similar theory to ours is the elevation model, which assumes that an act of generosity, charity, gratitude, fidelity, or *any strong display of virtue* evokes elevation (Algoe & Haidt, 2009). The difference from the kama muta model is best illustrated with an example. As we know from another study (Schubert et al., 2016), the peak of the kama muta experience in the lion video (one of the four videos presented in all five countries) occurs when a lion that had been saved and raised by two young men, and then released in Africa, later recognizes them in the wild, runs toward them, and hugs them repeatedly. We think this act exemplifies communal sharing by showing closeness through a joyous reunion with hugging, laughing, and relief, rather than a virtuous act by the lion or by the men at that moment. People around the world understand this gesture, without words, and react to it emotionally, often with tears, a warm chest, or goosebumps.

In sum, the kama muta model seems to most parsimoniously explain the three appraisals that best predicted being moved across the five cultures. Our model is based in relational models theory, which integrates judgments of morality; acts of touching and other signs of closeness; social identity; humanness; and many other constructs into a common concept, communal sharing—the feeling of equivalence. This led to our theory that the many situations that people are likely to identify as *moving*, *rørt*, *comovido/a*, נוגע ללב, or *gǎn dòng* (感动) all have something in common, the sudden intensification of communal sharing. This social-relational transition universally elicits the same emotion, kama muta, involving the same physiological sensations and motives. Its cultural significance may vary considerably, but we did not investigate the meanings of kama muta in these five countries.

Limitations

Although the current study focused on intensification of communal sharing, the kama muta model predicts that it is *sudden* intensifications that evoke kama muta. We assessed this aspect with *overcoming obstacles*, but the model defines suddenness as abrupt increase in communal sharing, or salience of communal sharing against a prior or default background of loss, separation, or concern about togetherness. This background can be an obstacle, but it can also be contrary expectations, norms, apprehensions or a reality, against which the foreground of a communal sharing act, event, fulfillment, or fantasy is contrasted (see also Frijda, 1988). The theory that a suddenness/sharp contrast is essential still awaits empirical verification, either by developing good measures, or by manipulating it experimentally.

Across all five languages, people sometimes use the terms we used to assess *kama muta* to denote other “nearby” emotions or feelings, such as sadness or awe. This is not an insurmountable methodological problem for us, because along with labeling, we look for convergent evidence from appraisals, sensations, and valence to classify an episode as an instance of *kama muta*. It would be a problem for our model or methods; however, if increased closeness was not perceived in most instances of being *moved*, *rørt*, *comovido/a*, נוגע ללב, or *gǎn dòng* (感动), because we assume that the vernacular labels for *kama muta* in these languages do approximately coincide with the *kama muta* construct.

The concepts of *equivalence* and *bias* have been put forward with regard to cross-cultural assessment and interpretation (van de Vijver & Tanzer, 2004). In our studies, we observed not only similarities but also considerable variation among the samples, both within and across cultures. This variation or bias may have many sources: the use of different video material, which was confounded with study sample (method bias); differences in the meanings of questions due to cultural and language variations (item bias); differences in sample characteristics like age and socioeconomic status (SES); and of course also differences in *kama muta* prototypes, precedents, paradigms, precepts, and proscriptions across languages and cultures (construct bias). Due to methodological restrictions, we cannot infer equivalence or measurement invariance from the present data, because we assessed most of our constructs with one or two items.

Our results show that intensifications of communal sharing are universally recognized and evoke a quite similar emotional response, a construct which we denote *kama muta*. This is a basis for cultural understanding: Even people lost in translation can recognize communal sharing when they see it, and in this way, figure out important relational building blocks in cultures other than their home cultures. Studies like the present one help to make this implicit relational cognition explicit, and can thereby help people navigate their increasingly multicultural societies and understand each other by recognizing something they all have in common, the *kama muta* emotion—whatever particular meanings they endow it with.

Authors' Note

Ravit Nussinson has previously published under the name Ravit Levy-Sadot. Thomas W. Schubert led the design of the studies, Beate Seibt wrote the first draft of the article, and Janis H. Zickfeld conducted the main analyses. All authors were involved in the translation, in data collection, and in revising the article. We thank the kamamutalab.org for helpful feedback and discussions.

Declaration of Conflicting Interests

The author(s) declared no potential conflicts of interest with respect to the research, authorship, and/or publication of this article.

Funding

The authors received financial support from their institutions for the research, authorship, and publication of this article.

Note

1. We provide the original questions for all languages in the supplemental material. Here, we use the English translations, knowing that the terms have different extensions, connotations, prototypes, and context-dependent meanings, reducing direct comparability across languages.

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