


# A Sense of Obligation: Cultural Differences in the Experience of Obligation

Personality and Social  
Psychology Bulletin  
1–22

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DOI: 10.1177/0146167218769610  
pspb.sagepub.com



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## Abstract

In this investigation of cultural differences in the experience of obligation, we distinguish between Confucian Role Ethics versus Relative Autonomy lay theories of motivation and illustrate them with data showing relevant cultural differences in both social judgments and intrapersonal experience. First, when judging others, Western European heritage culture (WEHC) participants (relative to Confucian heritage culture [CHC] participants) judged obligation-motivated actors more negatively than those motivated by agency (Study 1,  $N = 529$ ). Second, in daily diary and situation sampling studies, CHC participants (relative to WEHC participants) perceived more congruency between their own agentic and obligated motivations, and more positive emotional associations with obligated motivations (Study 2,  $N = 200$  and Study 3,  $N = 244$ ). Agentic motivation, however, was universally associated with positive emotions. More research on a Role Ethics rather than Relative Autonomy conception of agency may improve our understanding of human motivation, especially across cultures.

## Keywords

motivation, culture, obligation, agency, self-determination theory

Received June 25, 2016; revision accepted February 19, 2018

Remember that for Confucius, many of our obligations are not, cannot be, freely chosen. But he would insist, I believe, that we can only become truly free when we *want* to fulfil our obligations...

—Rosemont, 2006, p. 15

Are duties a restriction on free will, annoying and dispensable? Or does Confucianism promote a different relationship between will and obligation: That performing my social duties is fundamental to virtue; and if I sincerely revere the obligations of my social roles, I will feel satisfaction and a sense of willingness to fulfill them?

Despite attempts to declare the debate closed, cultural psychologists still question the applicability of the highly influential self-determination theory (SDT; Ryan & Deci, 2000) to cultural contexts that emphasize the value of doing one's duty and fitting in (e.g., Iyengar & Lepper, 1999; Markus & Kitayama, 2003; Miller, Das, & Chakravarthy, 2011). Although SDT posits a universal need for autonomy, the theory's focus on agency and avoiding coercion seems to be less relevant to cultures where deferring and adjusting to others is encouraged (Morling, Kitayama, & Miyamoto, 2002; Savani, Morris, & Naidu, 2012).

Based on research with Hindu Indian participants, Miller et al. (2011) have argued that in duty-valuing cultures, social

expectations and duties do not lead to a sense of coercion, with implications for required changes to SDT measures. Nevertheless, some have countered that this finding is already consistent with SDT (Chirkov, 2014); moreover, cultural adaptations of SDT to non-Western cultures have mostly adopted a different strategy, focusing on an expanded self-concept (e.g., Rudy et al., 2015), instead of a personally agentic experience of external motivation.

In this article, we revisualize and extend Miller's original insights and emphasize their importance for an accurate understanding of agency across cultures. We first introduce philosophical literature that clarifies why SDT resonates

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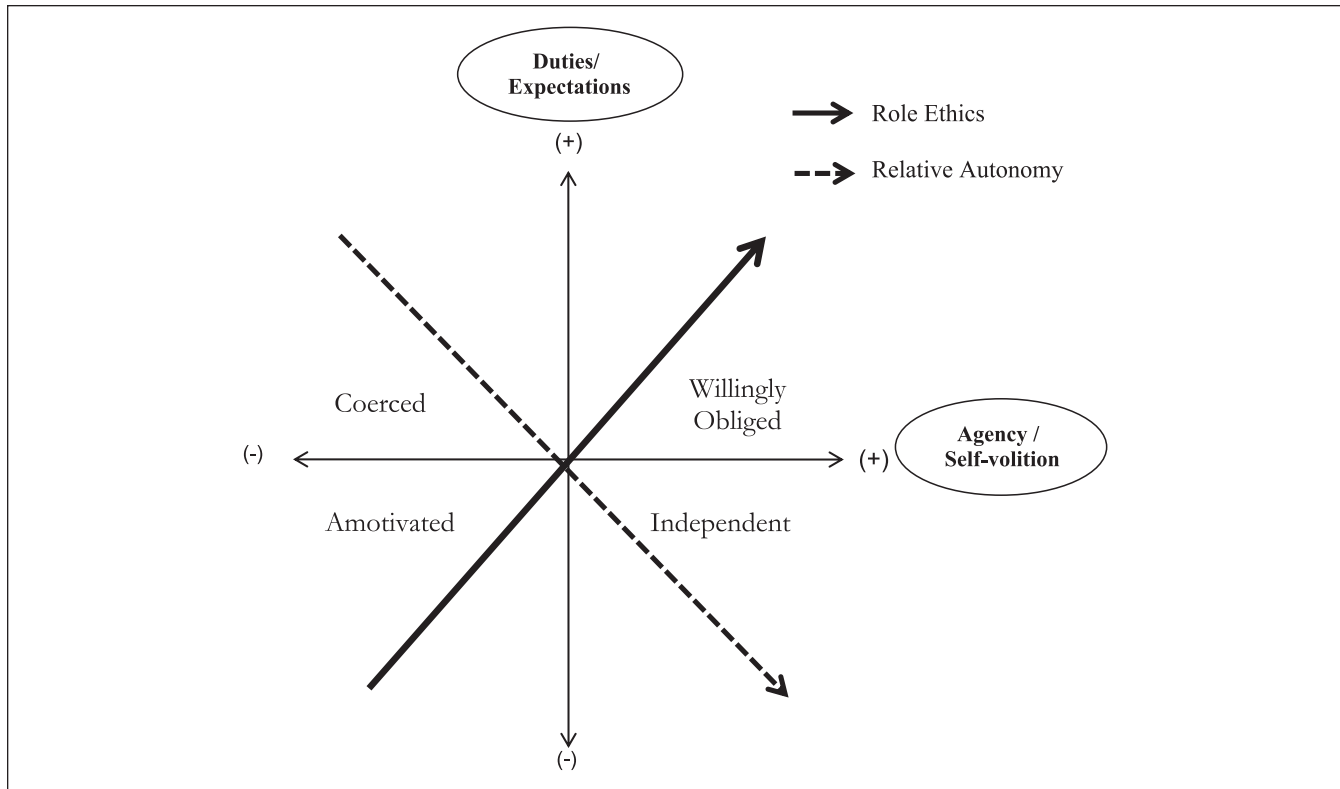
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**Figure 1.** Theoretical relationship between experience of agentic (X axis) and obligated (Y axis) motivations for action, as expected by Role Ethics versus Relative Autonomy lay theories.

more in Western European heritage cultures (WEHCs) and describe an alternative Role Ethics motivational orientation grounded in a burgeoning philosophical literature on Confucianism and its contrast with Kantian concepts of autonomy (see, for example, Ames & Rosemont, 2014; Bockover, 2012; Ramsey, 2016). We then review current cultural psychology approaches to adapting SDT to collectivistic cultures, distinguishing between *interdependent self-concept* and Role Ethics methods.

The current studies illustrate the implications of a Role Ethics approach in participants' judgments and experience of obligated motivation across cultures. Depicting agency and obligation as orthogonal motivators (X and Y axes of Figure 1), we demonstrate in three studies that for participants influenced by Confucian heritage cultures (CHCs), duty and, respectively, agency and positive emotions, are more likely to be perceived as congruent and experienced concurrently (shown with the positively sloped Role Ethics line in Figure 1), compared with participants influenced by WEHCs. We argue that these cultural differences have important implications for how agency is conceptualized and measured, and that easily misunderstood language such as autonomy and internalization should be augmented or replaced with language more reflective of Role Ethics lay understandings.

### Agency and Obligation in Kantian and Confucian Traditions

Cultural psychologists have long argued that SDT “resonates with the assumed tension between the individual and the group emphasized in European American culture” (Miller, 2003, p. 82). SDT describes an ideal motivational state as being self-determined, autonomous, and motivated by internalized values and desires; collectivistic cultures, in contrast, emphasize a sense of duty to the group, fitting into a social hierarchy, and fulfilling one's social roles and duties (Oyserman, Coon, & Kemmelmeier, 2002; Triandis & Gelfand, 1998). Although this apparent incompatibility has been critiqued as a misunderstanding of the theory of SDT (e.g., Ryan & Deci, 2006a), nevertheless, SDT research retains language (autonomy, internalization) and central concerns (personal agency, avoiding coercion) that are associated with individualistic cultural norms of independence (e.g., Iyengar & Lepper, 1999; Markus & Kitayama, 2003).

Cultural resonance is assumed to arise from “historically derived commitments from religion, politics, and philosophy about what is a person and what is good or moral behavior” (Markus, 2016, p. 162). SDT's concern with autonomy echoes that of post-Kantian moral philosophy (Ryan & Deci, 2006a), an important shaper (and product) of Western European

culture. Kant's ethical theory defined moral actions as those that are chosen with free will, rationally determined by each individual, independent of external pressures; otherwise, one's behavior would be merely heteronomous (coerced), rendered irrelevant to the domain of morality (Kant, 1785/1993, AK433).

Would this moral vision of autonomy resonate in non-Western European cultures? Hindu, Daoist, and Buddhist philosophies provide alternative views (Menon, 2013; Miller, 2003); but in a particularly instructive literature, Confucian philosophers have developed rich and nuanced arguments<sup>1</sup> about Kantian autonomy's (in)applicability to Confucian ethics (e.g., Shun & Wong, 2004). In contrast to Kant's ethics, coercion is not a central concern in Confucianism, which assumes a mutual dependence between individual and group interests (Wong, 2017). Instead, external expectations and duties provide an indispensable opportunity for individuals to cultivate virtue *through* fulfilling social roles, such that "a fully human life" is one that is "structured by a set of duties to [others] . . . that realize the self rather than constrain it" (Shun & Wong, 2004, p. 2). On the other hand, agentic, internal characteristics such as sincere affect and whole-hearted willingness should also accompany the performance of these roles—achieving a "balance between form and feeling" that can "ennoble and beautify human nature" (Wong, 2006, p. 18). Thus, in Confucian Role Ethics, virtue is consummated in the self-endorsed, sincere performance of role-defined duties (Ames & Rosemont, 2014; Rosemont, 2006), such that both agency and obligations are valued as legitimate and congruent motivators.

However, an alternative philosophical concept—dialectical thinking, or a lay belief in constant change and tolerance of contradiction—could also lead to perceived congruency between internal and external motivation (Y. Li, Sheldon, & Liu, 2015). Dialectical self-concept is more prevalent in East Asian cultures than WEHCs (Spencer-Rodgers, Boucher, Mori, Wang, & Peng, 2009) and is associated with more ambivalent responses to reverse-scored items (Hamamura, Heine, & Paulhus, 2008), more mixed emotions (Hui, Fok, & Bond, 2009), and mitigation of negative effects of an extrinsic motivator (a monetary reward) on the intrinsic motivation of European Americans (Y. Li et al., 2015).<sup>2</sup> As tolerance of contradiction is different from valuing one's duty but could produce similar effects of agency-obligation congruency, in the following studies we assess dialectical thinking as a potential alternative explanation for cultural differences.

Respectively reflecting the moral philosophies of WEHCs and CHCs, we depict lay motivational orientations of Relative Autonomy and Role Ethics as shown in Figure 1. A lay Role Ethics motivational orientation values both agency and duty and expects them to be in harmony. Thus, most motivated actions should be experienced along the positive slope of the Role Ethics line, leading from the *amotivated* to *willingly obliged* quadrants (ideally motivated by both duty and agency). In a lay Relative Autonomy theory of

motivation, in contrast, it is more virtuous to be agentic than dutiful, and motivation by duty is assumed to diminish agency; thus, most situations should fall along the negative slope of the Relative Autonomy line, leading from the *coerced* to *independent* quadrants.

## Cultural Adaptations of SDT

How does a Role Ethics model of agency differ from current attempts to adapt SDT to collectivistic cultures? Most research has taken a route influenced by Markus and Kitayama's (1991) seminal proposal of an interdependent self-concept, while neglecting to adjust for cultural differences in attitudes toward duties. Although interdependent self-concept adaptations are important and useful to understanding agency in collectivistic contexts, the Role Ethics approach implies additional adjustments.

### Interdependent Self-Concept Adaptations of SDT

An interdependent self-concept, encouraged in collectivistic cultural contexts (Markus & Kitayama, 1991, 2003) can be . . . that incorporates others into the self, implying that others' attitudes could be experienced as one's own and thus motivate "self"-determined behavior. Researchers have found that the autonomy of interdependent substitutes for self is more important in collectivistic contexts; for example, the relative autonomy of "my family and I" (vs. "I") was found to be especially important for well-being and intrinsic motivation among non-Western cultural participants (Rudy, Sheldon, Awong, & Tan, 2007; see also Yi, Gore, & Kanagawa, 2014). Similarly, trusting and feeling interdependent with others (e.g., teachers, parents) is associated with increased motivation to fulfill their expectations (e.g., Cheng & Lam, 2013; Rudy et al., 2015). This interdependent self-concept approach to adapting SDT to collectivistic contexts can be seen in research on *inclusive relative autonomy* (Rudy et al., 2007), *relationally autonomous reasons* (Gore & Cross, 2006; Jiang & Gore, 2016), and *dependent decision making* (Chen, Vansteenkiste, Beyers, Soenens, & Van Petegem, 2013).

### A Role Ethics Adaptation of SDT: Internally Endorsed, Yet Obligated, Motivations

A Role Ethics approach instead suggests there are cultural differences in the agentic desire to fulfill expectations or social roles (see Miller, 2003; Miller et al., 2011). Role Ethics challenges the assumption that being motivated by duties is negatively related to internal motivation, an assumption that persistently underlies SDT definitions of autonomy.<sup>3</sup> SDT depictions of motivations, for example, typically display a linear progression from external motivation (e.g., compliance) to internal motivation (e.g., interest, Figure 1 in Ryan & Deci, 2000), and SDT measures of autonomy are

often operationalized in a Relative Autonomy Index (RAI), which subtracts ratings of motivations referencing duties and expectations from ratings of internal motivations (Miller et al., 2011; Ryan & Deci, 2006b). In fact, by retaining the SDT focus on relative autonomy, the above cultural adaptations of SDT still retain this bias against duties (Miller et al., 2011). “Because other people expect me to,” for example, is cited as a *relationally controlled reason* (Jiang & Gore, 2016), and in a measure of *inclusive relative autonomy* (Rudy et al., 2007), ratings of “we think it’s what we are supposed to do” were subtracted from more agentic items. These studies reflect a Relative Autonomy view that duties and social expectations are coercive, even while adjusting the definition of self to include others.

In the Role Ethics view, complying with obligations and expectations is something that one wants to do, without decreasing a sense of personal agency. So far, Miller et al.’s theorizing and research have provided the main evidence for cultural differences in the agentic experience of duties, finding, for example, that Hindu Indians are more likely than Americans to associate duty with a sense of satisfaction and choice (Miller et al., 2011), and are less likely than Americans to perceive meeting expectations as a replacement of agentic motivation (Miller & Bersoff, 1994; see also Study 3 of Savani, Morris, Naidu, Kumar, & Berlia, 2011). But limited research addresses this precise question (i.e., whether fulfillment of duties is explicitly experienced as self-willed) in CHCs; most relevantly, when bicultural East Asian-Canadians identified with East Asian culture, they felt less negative about reasons such as “somebody else wants you to” (Perunovic, Heller, Ross, & Komar, 2011).

### Current Studies: Extending and Illustrating Implications of Role Ethics

In the following studies, we extend previous research in several ways. First, we replicate past findings among Hindu Indians with Confucian heritage cultural participants, providing more support for the existence of cultural differences in the agentic experience of obligation. Second, in Study 1, we emphasize the social judgment implications of holding Role Ethics versus Relative Autonomy orientations: We expect cultural differences in the perceived agency of an obligation-motivated actor to generalize to other positive social judgments. Third, in Studies 2 and 3, we provide data that specifically illustrate a Role Ethics view of agentic and obligated motivation as positively related to one another across one person’s experiences (Figure 1). We predict that CHC-influenced participants are more likely to positively link duty and, respectively, agency and positive emotion, compared with WEHC-influenced participants. To demonstrate this relationship, we use hierarchical linear modeling (HLM) in Studies 2 and 3, to illustrate Figure 1 with individuals’ ratings of duty and agency across experiences over time (using a daily diary; Study 2), and judgments over a

variety of situations (situation sampling; Study 3). Finally, we address dialectical self-concept as an alternative explanation by assessing whether it mediates the cultural differences in Studies 2 and 3 that we ascribe to Role Ethics.

Thus, in three studies, we assess to what degree CHC and WEHC-influenced participants display a Role Ethics versus Relative Autonomy motivational orientation. We vary our operationalization of obligation and agency in each study, using terms commonly used in SDT measures such as *should*, *expected to*, and/or *duty* to operationalize obligated motivations, and *want*, *personally important*, and/or *choice* for agentic motivations. We also vary our cultural samples: influence by WEHC is represented by data from Australian and European-Canadian participants; influence by CHC is represented by data from Hong Kong and Mainland Chinese, and East Asian-Canadians of varying levels of acculturation.<sup>4</sup>

### Study 1: How Are Obligation- Versus Agency-Motivated Helpers Judged?

Imagine thanking a person for her help, who responds “It’s just my duty” (instead of “I was happy to help”). Would this negatively affect your impression of her? In Study 1, we were interested in cultural differences in reactions to a helper’s profession of obligated, or agentic, motivation. From a Western, Relative Autonomy perspective, agentic and obligated motivation should be opposed to one another, and agentic motivation more valued; therefore, a dutiful helper should be perceived as not only having less agency and enjoyment than an agency-motivated helper, but also might make a less positive impression in terms of general traits such as competence and warmth (fundamental dimensions of social cognition; Fiske, Cuddy, & Glick, 2007). In contrast, from a Role Ethics perspective, both agency and dutifulness are valued motivations and can co-exist; so impressions should be unaffected by whether helpers profess dutiful or agentic motivations.

In Study 1, CHC-influenced participants (from Hong Kong and Beijing) and WEHC-influenced participants (from Australia and Canada) read six scenarios about helpers professing either agentic or dutiful motivations and rated their impressions of helpers’ agency, duty, enjoyment, warmth, and competence. Cultural differences in the prevalence of lay Role Ethics motivational orientations would be reflected in more similar judgments of helpers who are motivated by obligation versus agency, by CHC participants compared with WEHC participants.

### Method

**Participants.** About 529 university students participated in Australia or Canada (henceforth Western), and Hong Kong or Beijing (henceforth Chinese). We recruited participants who were born or permanent residents of their locality and whose first language was English (Australia/Canada) or Chinese

(Beijing/Hong Kong). Participants were born in Canada (Vancouver,  $N = 144$ , 19% male,  $M_{age} = 21.24$ , all Caucasian), Australia (Melbourne,  $N = 93$ , 34% male,  $M_{age} = 22.72$ , 84% Caucasian, 2% East Asian, 13% Other), or Mainland China (Beijing,  $N = 100$ , 42% male,  $M_{age} = 22.27$ , all Chinese), or born in/permanent residents of Hong Kong ( $N = 192$ , 36% male,  $M_{age} = 21.12$ , all Chinese). An additional 91 participants were excluded for failing an attention check (see below). Although gender proportion differed between groups, the inclusion of gender as a covariate did not change conclusions (see Online Table 2 for results comparison). Sample sizes were not determined a priori; we attempted to reach 100 to 150 participants per city. GPower indicated that total sample sizes of 55 and 34 (for overall and within-culture analyses, respectively) would have .80 power to detect medium (equivalent to  $d = .50$ ) effects. Study 1 of Miller et al. (2011) had a similar design; with our sample size, expected statistical power (Biesanz & Schrage, 2018; McShane & Böckenholt, 2016; see *faps* package for R [github\biesanz\faps]) for finding its smallest effect, that is,  $F(1, 116) = 9.62$  for the interaction of Culture and Condition on satisfaction, was 0.97 for the overall ANOVA and 0.998 for the within-culture ANOVAs.

**Procedure, scenarios, and motivation manipulation.** Surveys were online (Australia, Canada, Hong Kong) or on paper (Beijing), completed for course credit (Canada) or payment (Australia, Hong Kong, Beijing) as part of a larger survey.

**Manipulation and measures.** Each participant read six scenarios<sup>5</sup> about helpful university students, three agency-motivated and three obligation-motivated (see Appendix A for scenario content and design). Each scenario's final sentence described the helper's motivation as either agentic (referring to *want* and *personal importance*; for example, "she wanted to help her mother, and it was personally important to her to help her mother") or obligated (*duty* and *expected*; for example, "she felt that it was her duty to help her mother, and her mother expected her to help"). Two scenarios described helping relatives, two described helping friends, and two described helping classmates. Participants were randomly assigned to one of the two survey versions, such that each scenario's motivation was counterbalanced across surveys; for example, in Survey Version A the mother-helping actor was agency motivated, and in Survey Version B she was obligation motivated.

Helpers were rated on 14 items on a 1 (*strongly disagree*) to 7 (*strongly agree*) Likert-type scale (see Appendix B for items). Four items were attention checks, using identical words as the motivation description: the two-item agentic motivation manipulation check (*want* and *personally important*; per city,  $.81 \leq \alpha \leq .85$ ), and the two-item obligated motivation manipulation check (*duty* and *expected*; per city,  $.76 \leq \alpha \leq .88$ ). The helper was also rated on agentic motivation (one item = *felt he or she chose to help*) and obligated

motivation (one item = *felt he or she should help*), positive emotion (one item = *enjoyed helping*), and interpersonal impressions of warmth (three items;  $.75 \leq \alpha \leq .91$  per city) and competence (four items;  $.82 \leq \alpha \leq .92$  per city). An average score for each dependent variable (DV) was calculated across each participant's three obligation-motivated and three agency-motivated scenarios, respectively.

**Attention checks.** Participants who disagreed with relevant attention check items were excluded; for example, when the helper's motivation was stated to be obligated, participants were excluded if they disagreed with either of the obligated motivation attention check items (i.e., rated 3 [*slightly disagree*] or below on the Likert-type scale), leading to the exclusion of five Australian, six Canadian, 44 Hong Kong, and 36 Beijing participants. The large number of Chinese participants not meeting the attention check might be a result of the hypothesized cultural difference (i.e., the manipulation was less salient to Chinese participants because agency and obligation are less oppositional), but it also might reflect inattentiveness or not believing the truthfulness of the helper's statements. Because including inattentive or disbelieving Chinese participants would bias the data in the direction of our hypothesis, we thus report analyses after exclusion, though it in fact did not change conclusions (see Online Table 2 for results with or without exclusion).

## Analysis Method

For each DV, cultural differences were first tested with a three-way repeated measures ANOVA predicting each DV by motivation-condition (within-subjects; agency- vs. obligation-motivated) and between-subjects variables of culture (Western vs. Chinese) and survey version (2 levels).<sup>6</sup> Significant culture by motivation-condition interactions were followed up by within-culture repeated measure ANOVAs predicting each DV by motivation-condition and survey version.

## Results

**Three-way ANOVA results.** For all DVs, we found a significant interaction between culture and helper motivation, indicating that culture moderated the effect of motivation-condition on all DV ratings. Culture by motivation interaction effects ranged from a low of  $F(1, 522) = 29.37, p < .001$ , for *obligation*, to a high of  $F(1, 523) = 166.27, p < .001$ , for *warmth*; see Online Table 1 for all results. Thus, we followed up with within-culture ANOVAs, as follows.

**Within-culture ANOVA results.** Results are displayed in Tables 1 and 2 and in Figure 2. As expected, the effect of the motivation manipulation was considerably weaker on Chinese participants' ratings than on Western participants' ratings, though still in the same direction. Western participants' ratings on all

**Table 1.** Study 1: Within-Culture ANOVA Analyses.

Dependent variable	Western					Chinese				
	Motivation effect size $d_w$ [95% CI]	ANOVA $df$	Motivation of actor $F$	Survey version $F$	Motivation $\times$ version $F$	Motivation effect size $d_w$ [95% CI]	ANOVA $df$	Motivation of actor $F$	Survey version $F$	Motivation $\times$ Version $F$
Agency (choice)	1.26 [1.09, 1.43]	(1, 234)	375.40***	0.05	3.07	0.52 [0.40, 0.64]	(1, 288)	79.38***	0.06	8.55**
Obligation (should)	-0.41 [-0.54, -0.27]	(1, 234)	39.31***	0.84	7.08**	0.04 [-0.08, 0.15]	(1, 288)	0.37	0.07	32.35***
Positive emotion (enjoy)	1.64 [1.44, 1.83]	(1, 234)	638.09***	0.33	1.32	0.50 [0.38, 0.62]	(1, 289)	73.28***	0.66	33.55***
Warmth	1.11 [0.95, 1.27]	(1, 234)	295.23***	0.06	5.16*	0.19 [0.08, 0.31]	(1, 289)	11.04**	2.11	179.60***
Competence	0.56 [0.42, 0.70]	(1, 234)	74.73***	1.23	20.11***	0.06 [-0.05, 0.17]	(1, 289)	1.05	1.52	37.49***

Note. The main effect of Motivation (of actor) is the test of the main hypothesis that the dependent variable ratings were affected by the scenario actor's motivation (obligated vs. agentic). The effect size of the motivation manipulation is here reported as a "design" Cohen's  $d_w$  ( $d_w = \sqrt{[F/N]}$ ), and reflects the within-person analysis effect size specific to this design. Negative Cohen's  $d_w$  indicates that the obligation-motivated actors were rated higher on the DV than the agency-motivated actors. CI = confidence interval; DV = dependent variable.

\* $p < .05$ . \*\* $p < .01$ . \*\*\* $p < .001$ .

**Table 2.** Study 1 Means, SDs, and Reference Effect Sizes.

Dependent variable	Western				Chinese			
	$N$	Obligation motivated $M$ ( $SD$ )	Agency motivated $M$ ( $SD$ )	Between Cohen's $d_b$ [95% CI]	$N$	Obligation motivated $M$ ( $SD$ )	Agency motivated $M$ ( $SD$ )	Between Cohen's $d_b$ [95% CI]
Agency (choice)	236	4.31 (1.30)	6.14 (0.74)	1.73 [1.50, 1.97]	290	5.26 (0.95)	5.80 (0.78)	0.62 [0.48, 0.76]
Obligation (should)	236	6.17 (0.69)	5.74 (1.00)	-0.50 [-0.66, -0.33]	290	5.79 (0.79)	5.79 (0.73)	0.00 [-0.11, 0.10]
Positive emotion (enjoy)	236	4.32 (0.98)	6.06 (0.70)	2.05 [1.80, 2.29]	291	5.27 (0.94)	5.73 (0.77)	0.53 [0.40, 0.66]
Warmth	236	5.13 (0.74)	5.82 (0.71)	0.96 [0.82, 1.10]	291	5.39 (0.68)	5.52 (0.67)	0.19 [0.09, 0.29]
Competence	236	5.05 (0.73)	5.38 (0.81)	0.44 [0.32, 0.55]	291	4.91 (0.68)	4.96 (0.71)	0.07 [-0.02, 0.16]

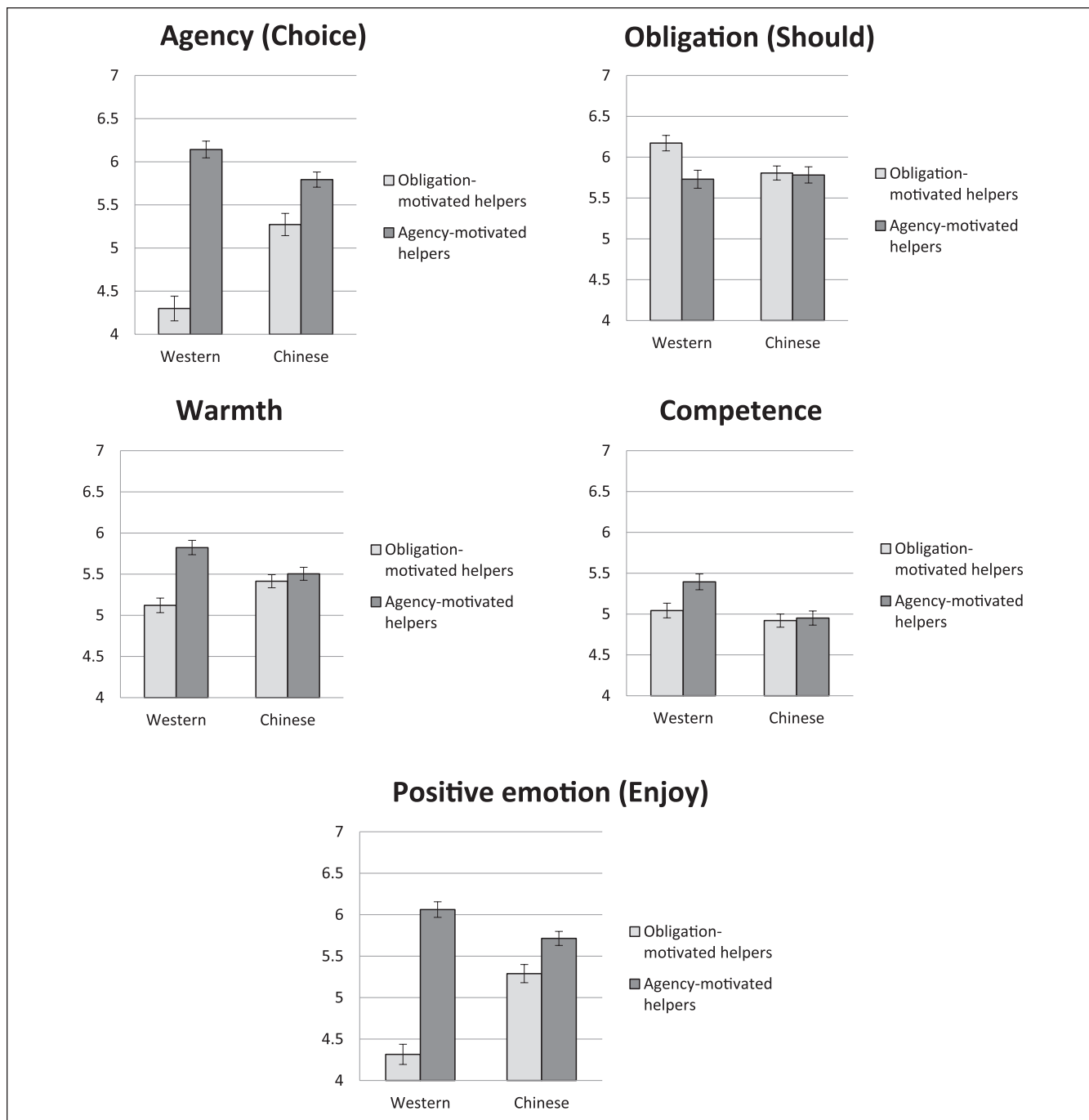
Note. To generate effect sizes and CIs that are useful for meta-analysis, and facilitate comparability across designs, we here estimate "between" Cohen's  $d_b$  effect sizes for the effects of motivation reported in Table 1. Between Cohen's  $d_b$  reflects the "reference" effect size, that is, effect size if the study had been a between-subjects design (Dunlap, Cortina, Vaslow, & Burke, 1996), with CIs adjusted for  $d_b/d_w$  ratio of SDs. Negative Cohen's  $d_b$  indicates that the obligation-motivated actors were rated higher on the DV than the Agency-motivated actors. CI = confidence interval; DV = dependent variable.

\* $p < .05$ . \*\* $p < .01$ . \*\*\* $p < .001$ .

DVs were significantly affected by helpers' motivation (agency-motivated helpers received higher ratings than obligation-motivated helpers on *agency*, *positive emotion*, *warmth*, and *competence*, and lower ratings on *obligation*), with Cohen's  $d_b$  ranging from .44 to 2.05 (Table 2). For Chinese participants, Cohen's  $d_b$  of the effect of helper's motivation ranged from 0.0 to .62 (Table 2): ratings were higher for agency- versus obligation-motivated helpers for three DVs (*agency*, *positive emotion*, and *warmth*), but these effects were only 20% to 36% as strong as the effect on Western participant's ratings, and ratings of *obligation* and *competence* were not significantly influenced by the helper's motivation.

### Study 1: Summary and Discussion

In Study 1, we found predicted cultural differences in how a helper's stated motivation affects participants' judgments. We expected that Chinese, CHC-influenced participants would not judge agency-motivated and obligation-motivated helpers differently, whereas Australian and Canadian, WEHC-influenced participants would judge obligated helpers more negatively than agentic helpers. Overall, the average effect of a helpers' professed motivation across five DVs was  $d_b = 1.14$  for WEHC participants and  $d_b = .28$  for CHC participants (i.e., large vs. small effects). Relative to CHC participants, WEHC participants gave obligation-motivated



**Figure 2.** Study 1: Effects of scenario helper’s motivation and participants’ culture on perceived agentic motivation, obligated motivation, positive emotion, warmth, and competence (originally rated on a 1-7 scale).  
 Note. Bars show estimated marginal means from within-culture ANOVA analyses (Table 1). Error bars indicate 95% confidence intervals.

(vs. agency-motivated) helpers lower ratings of agency and enjoyment, and higher ratings of obligation, displaying a stronger Relative Autonomy-like assumption that obligated and agentic motivations negate one another, and that being motivated by duty implies less enjoyment than being motivated by agency. Similar cultural differences were found in judgments of helpers’ warmth and competence,

with WEHC participants’ impressions negatively affected by a helpers’ profession of obligated motivation, and CHC impressions less affected (for warmth) or unaffected (for competence).

These cultural differences in the effect of obligation on agency and enjoyment conceptually replicate past findings comparing Hindu Indian versus American participants

(Miller et al., 2011), extending to CHC participants. In the current study, the further generalization to judgments of others, especially to warmth and competence ratings, suggests the practical importance of these cultural differences. For example, if someone from a Role Ethics–emphasizing culture were to present herself or himself as a duty-driven person, perhaps attempting to display virtue, this could backfire in a cultural context where Relative Autonomy assumptions about motivation are more common.

## Study 2: Motivations in Daily Helping Behavior

Study 1 found that relative to CHC-influenced participants, WEHC-influenced participants judged that obligation-motivated helpers would experience less agency and enjoyment than agency-motivated helpers, and also rated them lower on competence and warmth. But in Study 1, evidence for a Role Ethics motivational orientation could only be seen in CHC participants' more similar judgments of agency and obligation-motivated helpers, as both motivations should be viewed as valuable and noncontradictory. This design did not allow us to see evidence of a Role Ethics assumption that agentic and obligated motivations could be *positively* related to each other. Studies 2 and 3 were designed to redress this.

In Study 2, we used a daily diary method to assess how agentic and obligated motivation and positive and negative emotions were related to one another across participants' own daily helping situations. HLM was used to estimate each participant's within-person associations with obligated motivation, then test their moderation by cultural influence. These data allow us to examine the question of whether, across one person's daily experiences, *more* obligated motivation is accompanied by *more* agentic motivation and *more* positive emotions, and if individual differences are in turn predicted by cultural heritage such that these relationships tend to be more positive within individuals more influenced by CHCs. Finally, we also examined the possibility that co-experiencing obligation and agency could simply be dialectical thinking, that is, seeing less contradiction between opposites; Study 2 included an individual-difference measure of dialectical thinking and tested it as a possible mediator of cultural differences.

### Method

**Participants.** A total of 200 university students participated in Canada and Hong Kong. Canadians were grouped by self-reported cultural heritage and which language they spoke with friends, giving an estimate of acculturation: 29 Western European heritage, Canadian-born participants, who spoke English with friends (henceforth Euro; 17% male,  $M_{age} = 20.72$ , 100% Caucasian), 72 East Asian heritage, Canadian participants who spoke English with friends (henceforth EA-ENG; 24% male,  $M_{age} = 19.58$ ,

92% Chinese, 8% Korean or Asian bi-ethnic), and 27 East Asian heritage, Canadian participants who spoke their heritage language with friends (henceforth EA-EA; 19% male,  $M_{age} = 21.11$ , 67% Chinese, 33% Korean). The 72 participants from Hong Kong (henceforth HK, 26% male,  $M_{age} = 20.50$ ) all had Chinese cultural background (85% Hong Kong permanent residents). The four groups did not differ in gender proportion (Kruskal–Wallis test,  $\chi^2 = 1.33$ , n.s.), but did differ in age,  $F(3, 196) = 7.54$ ,  $p < .001$ ; however, no substantive effects were found by including age or gender as covariates.<sup>7</sup> Sample size was not determined a priori; in Canada, we recruited as many participants as possible within an academic year, and in Hong Kong, we matched the largest group size in Canada. The total sample size had adequate power to detect medium ( $d = .50$ ) effect sizes for each effect of interest,<sup>8</sup> and the sample sizes for each cultural comparison had adequate expected power to detect conceptually similar effects published in Miller et al. (2011;  $.71 < \text{expected power} < .92$ ).<sup>9</sup>

**Procedure.** An initial online questionnaire<sup>10</sup> including demographics and the measure of dialectical thinking was followed by eight daily online helping reports, completed for course credit (Canada) or payment (Hong Kong). Materials were in English in Canada and translated into Chinese for Hong Kong by bilingual collaborators. To encourage vivid recall of a recent event, each daily report was submitted before noon the next day. On average, participants helped someone on 5.7 out of 8 days. Relationships with helpees were similar across cultural groups (27% friends, 22% relatives, 19% strangers, and <5% professors or boy/girlfriend) though Hong Kong respondents more often reported helping classmates (27% vs. 11% among Canadians).

**Dialectical thinking mediator (DSS [Dialectical Self-Concept Scale]).** Dialectical thinking was measured with 10 items of the DSS (Spencer-Rodgers et al., 2009) selected on the basis of highest interitem correlations with the full 32-item scale in previous data (Buchtel, 2009), rated on a 7-point Likert-type scale from *disagree strongly* to *agree strongly*. Reliability was adequate, though weaker in the Hong Kong sample (Cronbach's  $\alpha$ : Euro, .83; EA-ENG, .77; EA-EA, .81; HK, .64).

**Daily helping report: Motivations and emotions.** In the daily report,<sup>11</sup> participants who had helped someone described the event briefly, and then rated their degree of three obligated motivations ("I felt I should help," "I felt expected to help," and "I felt it was my duty to help") and three agentic motivations ("I wanted to help," "I felt it was personally important to help," and "I felt like I chose to help"), rated on a 6-point Likert-type scale ranging from *not at all* to *extremely*, forming *obligated motivation* and *agentic motivation* scales, respectively (Cronbach's  $\alpha$ , on item averages across all helping



events: obligated: Euro, .80; EA-ENG, .86; EA-EA, .92; HK, .80; agentic: Euro, .86; EA-ENG, .88; EA-EA, .92; HK, .91).

Participants also rated their affect on positive and negative interpersonal (Kitayama, Mesquita, & Karasawa, 2006) and other helping-relevant emotion words, on a 6-point Likert-type scale ranging from *not at all* to *extremely*, forming a 13-item *positive emotions* scale (close, respect [for someone else], friendly feelings, appreciated, proud, self-respect, superior, respected, calm, elated, happy, relaxed, and competent; Cronbach's  $\alpha$ : Euro, .90; EA-ENG, .93; EA-EA, .96; HK, .94) and a nine-item *negative emotions* scale (guilty, ashamed, sulky feelings, frustrated, angry, unhappy, annoyed, disgusted, and bored; Cronbach's  $\alpha$ : Euro, .91; EA-ENG, .82; EA-EA, .92; HK, .91).

### Analysis Method: Cultural Differences

*Relationship between obligated and agentic motivations.* An HLM analysis tested for cultural moderation of the Level 1 within-person relationship between *obligated* and *agentic motivation* scale scores, through three Level 2 cultural group comparison variables comparing the Euro-Canadians (coded 0) to the other three groups in turn (coded 1; West, Aiken, & Krull, 1996) is as follows:

$$\text{Level 1: Obligated}_{ji} = \beta_{0j} + \beta_{1j}\text{Agentic} + \beta_{ji}$$

$$\begin{aligned} \text{Level 2: } \beta_{0j} &= \beta_{00} + \beta_{01}\text{Euro/EA-ENG} + \beta_{02}\text{Euro/EA} \\ &\quad - \text{EA} + \beta_{03}\text{Euro/HK} + u_{0j} \\ \beta_{1j} &= \beta_{10} + \beta_{11}\text{Euro/EA-ENG} + \beta_{12}\text{Euro/EA} \\ &\quad - \text{EA} + \beta_{13}\text{Euro/HK} + u_{1j} \end{aligned}$$

Original scale scores (1-6) were retained, and uncentered Level 1 variables were used to allow for possible differences in within- and between-culture variance.

*Relationship between emotions and motivations.* Similarly, four separate HLM analyses tested for cultural moderation of the Level 1 within-person relationship between, respectively, positive (or negative) emotions and agentic (or obligated) motivations:

$$\begin{aligned} \text{Level 1: Obligated [or Agentic]}_{ji} &= \\ &\quad \beta_{0j} + \beta_{1j}\text{Positive [or Negative]} + \beta_{ji} \end{aligned}$$

Level 2: *Same as above*

### Results: Cultural Differences

*Obligated and agentic motivations.* Shown in Table 3 and Figure 3 (Panel 1), as hypothesized, East Asian-Canadian

and Hong Kong participants' ratings of obligated and agentic motivations were more positively associated than those of European-Canadian participants ( $\beta_{11}$ ,  $\beta_{12}$ ,  $\beta_{13}$ ), though this association was already marginally significantly positive among Euro-Canadians ( $\beta_{10}$ ).

*Obligated motivations and emotions.* Shown in Table 3 and Figure 3 (Panel 2), as hypothesized, East Asian-influenced participants' ratings of positive emotions and obligated motivations were more positively associated than those of Euro-Canadian participants ( $\beta_{11}$ ,  $\beta_{12}$ ,  $\beta_{13}$ ), whose ratings were not related ( $\beta_{10}$ ). For negative emotions, no significant cultural differences were found (Table 3), but while the Euro group associated negative emotions with obligation,  $\beta = .38$  ( $SE = .15$ ),  $p = .012$ , alternate dummy coding found this relationship was nonsignificant for the EA-EA and HK groups, respectively,  $\beta = .13$  ( $SE = .28$ ),  $p = .629$  and  $\beta = .12$  ( $SE = .08$ ),  $p = .154$ , suggesting a nonsignificant trend toward cultural differences in the expected direction.

*Agentic motivations and emotions.* The last two columns of Table 3 show overwhelmingly positive perceptions of agentic motivation ( $\beta_{10}$ ,  $\beta_{11}$ ,  $\beta_{12}$ ,  $\beta_{13}$ ): agentic motivation ratings were positively associated with positive emotion ratings in all groups, and negatively associated with negative emotions, with one exception being the HK group's null association with negative emotions (Figure 3, Panel 3).

### Analysis Method: Mediation of Cultural Differences by DSS

Does dialectical thinking explain these cultural differences? We tested for a cross-level mediated moderation effect (Muller, Judd, & Yzerbyt, 2005), that is, whether the moderating effect of cultural group on the above associations was mediated by individual differences in dialectical thinking (DSS). Three methods converged: (a) A classic approach tested for cultural differences in DSS, then included DSS and cultural variables at Level 2 to test whether DSS predicted the Level 1 association independent of culture, and resulted in reduced cultural differences (MacKinnon, Fairchild, & Fritz, 2007); to test if mediation was statistically significant, we then examined (b) partial posterior  $p$  values of the reduction of each cultural difference (Biesanz, Falk, & Savalei, 2010); and (c) used a hierarchical Bayesian method to estimate the confidence interval (CI) around each mediating effect (Biesanz et al., 2010).

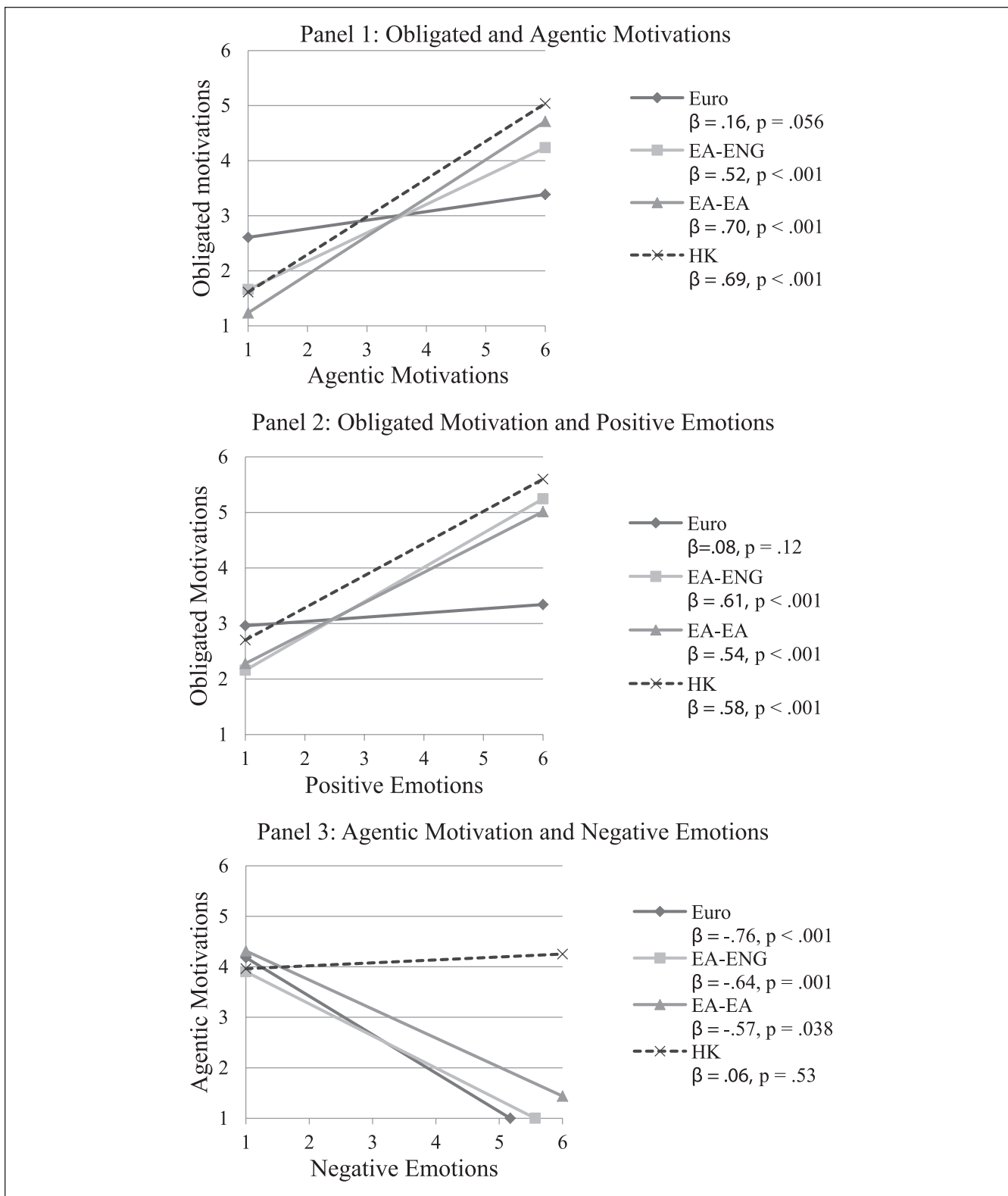
### Results: Mediation of Cultural Differences by DSS

As expected, East Asian participants on average scored higher on DSS than European-Canadian participants, as shown by a linear regression predicting DSS from three dummy-coded cultural comparison variables: Euro versus EA-ENG,  $\beta = .32$ ,  $t(196) = 3.37$ ,  $p = .001$ ; Euro versus EA-EA,  $\beta = .34$ ,

**Table 3.** Study 2: HLM Analyses for Cultural Differences.

Fixed effects	DV: obligated motivations IV: agentic motivations			DV: obligated motivations IV: negative emotions			DV: obligated motivations IV: positive emotions			DV: agentic motivations IV: positive emotions		
	$\beta$ (SE)	<i>p</i>	<i>d</i>	$\beta$ (SE)	<i>p</i>	<i>d</i>	$\beta$ (SE)	<i>p</i>	<i>d</i>	$\beta$ (SE)	<i>p</i>	<i>d</i>
Level 1												
Intercept, $\beta_{00}$	2.45 (.31)	<.001		2.59 (.25)	<.001		2.88 (.31)	<.001		4.94 (.25)	<.001	
EA-ENG vs. Euro, $\beta_{01}$	-1.31 (.39)	.001		0.05 (.36)	.899		-1.34 (.38)	.001		-0.41 (.35)	.248	
EA-EA vs. Euro, $\beta_{02}$	-1.91 (.39)	<.001		0.40 (.54)	.457		-1.15 (.43)	.008		-0.55 (.48)	.254	
HK vs. Euro, $\beta_{03}$	-1.53 (.36)	<.001		0.89 (.32)	.006		-0.76 (.40)	.058		-1.04 (.33)	.002	
Level 2												
IV intercept (Euro), $\beta_{10}$	0.16 (.08)	.056	0.31	0.38 (.15)	.012	0.21	0.08 (.12)	.526	0.08	-0.76 (.17)	<.001	-0.49
IV x EA-ENG vs. Euro, $\beta_{11}$	0.36 (.10)	.001	0.71	0.02 (.25)	.926	0.01	0.54 (.15)	<.001	0.58	0.13 (.26)	.626	0.08
IV x EA-EA vs. Euro, $\beta_{12}$	0.54 (.11)	<.001	1.06	-0.25 (.32)	.435	-0.14	0.47 (.17)	.005	0.50	0.19 (.32)	.565	0.12
IV x HK vs. Euro, $\beta_{13}$	0.53 (.09)	<.001	1.04	-0.26 (.17)	.126	-0.15	0.50 (.15)	.001	0.54	0.82 (.20)	<.001	0.52
Random effects												
Intercept, $u_0$	0.51 (0.71)	.008		0.88 (0.94)	.026		0.24 (0.49)	.172		0.91 (0.95)	.002	
IV slope, $u_1$	0.05 (0.22)	.001		0.03 (0.18)	>.500		0.01 (0.11)	.172		0.05 (0.23)	.036	
Level 1	.86			1.16			1.11			.88		
	Variance (SD)			Variance (SD)			Variance (SD)			Variance (SD)		

Note. DV is dependent variable. IV is independent variable. Cohen's *d* estimate calculated based on Gelman (2008) and Tymms (2004). EA-ENG = East Asian-Canadian participants who speak English with friends; EA-EA = East Asian-Canadian participants who speak their heritage language with friends; HK = Hong Kong-Chinese participants; HLM = hierarchical linear modeling; DV = dependent variable.



**Figure 3.** Study 2: Graphs depicting significant cultural differences in within-person associations with obligated motivations (should/expected/duty) and agentive motivations (want/personally important/chose).  
 Note.  $\beta$ s are parameters of the simple slope of each cultural group, obtained from HLM analyses using alternative dummy coding. Euro = European-Canadian participants who speak English with friends; EA-ENG = East Asian-Canadian participants who speak English with friends; EA-EA = East Asian-Canadian participants who speak their heritage language with friends; HK = Hong Kong-Chinese participants; HLM = hierarchical linear modeling.

$t(196) = 4.14, p < .001$ ; and Euro versus HK,  $\beta = .62, t(196) = 6.40, p < .001$ . However, no evidence was found that DSS mediated any of the three cultural differences found above (see Online Tables 3-6 for details). First, DSS did not significantly predict obligated-agentic associations independent of culture ( $\beta = .07, p = .13$ ), or reduce cultural differences: The partial posterior  $p$  values of the reduction in the effect of each cultural dummy variable ranged from  $p = .099$  to  $p = .118$  and Bayesian CIs all included zero. Nor did DSS independently predict obligated-positive emotion associations ( $\beta = .02, p = .722$ ), or reduce cultural differences: partial posterior  $p$  values ranged from  $p = .684$  to  $.714$  and Bayesian CIs included zero. Finally, DSS also did not independently predict agentic-negative emotion associations ( $\beta = .02, p = .817$ ) and did not reduce the Euro-HK difference (partial posterior  $p = .813$ , Bayesian CI included zero). Thus, DSS could not explain cultural differences in these associations.

### Study 2 Summary

In Study 2, participants filled out daily diaries of helping events, rating their experienced agentic motivations, obligated motivations, and emotions about helping. We found that across these within-person events, participants more influenced by CHC were more likely to positively associate obligated and agentic motivations compared with participants more influenced by WEHC (Figure 3, Panel 1). CHC-influenced participants' ratings suggested a stronger Role Ethics orientation toward duties: when external expectations and sense of duty were more salient, so was the desire to help. We also found cultural differences in the emotional experience of obligated motivations: CHC-influenced participants reported experiencing more positive emotions when more motivated by obligation compared with more WEHC-influenced participants (Figure 3, Panel 2). On the contrary, agentic motivations were generally associated with more positive and less negative emotions across cultural groups, suggesting a universally positive experience of agentic motivations. Despite higher DSS scores of the CHC-influenced participants, we did not find evidence that DSS mediated cultural differences in these associations.

### Study 3: 20 Favors—Imagined Motivations in Helping Scenarios

Study 2 relied on participants' recall of their own daily life, which, though high in ecological validity, meant that each person's events were different. Thus, in Study 3 we used a situation-sampling method (Morling et al., 2002) to select and present a single set of 20 helping situations from Study 2.

In Chinese, a common reply to being thanked for help is “應該的” (“It's what I should have done.”). In Study 3, we particularly focused on this phrase, asking participants to

estimate how much they would experience this obligated motivation (“I'd feel like I SHOULD help”) and also an agentic motivation (“I'd feel like I WANTED to help”) across the 20 scenarios, as well as positive and negative emotions. Again, we used HLM to examine cultural differences in the within-person relationship between obligated and agentic motivations and their association with positive and negative emotions and tested mediation by dialectical self-concept.

### Method

**Participants.** 244 university students took part in Canada and Hong Kong. As in Study 2, Canadians were divided into three groups: 45 Western European heritage, Canadian-born participants who spoke English with friends (Euro; 33% male,  $M_{age} = 21.27$ , 100% Caucasian), 79 of East Asian heritage who spoke English with friends (EA-ENG; 19% male,  $M_{age} = 19.84$ , 85% Chinese, 10% Korean, 3% Japanese, 2% bi-ethnic), and 35 of East Asian heritage who spoke their heritage language with friends (EA-EA; 29% male,  $M_{age} = 21.60$ , 69% Chinese, 23% Korean, 9% Japanese). The 85 participants from Hong Kong (HK; 42% male,  $M_{age} = 20.73$ ) were all of Chinese cultural background (98% Hong Kong permanent residents). The four groups differed in gender proportion (Kruskal-Wallis test,  $\chi^2 = 10.59, p = .014$ ) and age,  $F(3, 240) = 10.15, p < .001$ ; however, again no substantive differences were found when including them as covariates. As in Study 2, sample size was not estimated by a priori power analysis; however, a total sample size of 114 would have had .80 power to detect the smallest predicted Study 2 effect ( $d = .50$ ; Table 3), and as in Study 2, expected power to detect similar results previously published in Miller et al. (2011) was good ( $0.82 < \text{expected power} < 0.96$ , across different cultural group comparisons and DVs; see footnote 6 for details).

**Procedure.** Participants completed an online survey in return for partial course credit (Canada) or payment (Hong Kong), rating the motivations and emotions they would experience in 20 helping scenarios, followed by individual difference scale measures and demographics. Materials were in English in Canada and translated into Chinese for Hong Kong by bilingual collaborators.

**Selection of scenarios.** Using a situation sampling approach, 20 events reported by the Canadian students<sup>12</sup> in Study 2 were selected (see Appendix C), 10 from East Asian-Canadian participants, and 10 from European-Canadian participants. Within each 10, relationship with helpee broadly reflected the distribution in Study 2 data: four relatives, four friends, and two strangers/classmates. Within these limitations, scenarios were selected randomly.

**Motivation and emotion measures.** For each scenario, participants rated their degree of obligated motivation (“I’d feel like I SHOULD help”), agentic motivation (“I’d feel like I WANTED to help”), three positive emotions (happy, close, proud) and three negative emotions (unhappy, ashamed, frustrated; Kitayama et al., 2006), rated on 6-point Likert-type scales from 1 (*not at all*) to 6 (*extremely*) 6. The emotion scales showed good reliability (Cronbach’s  $\alpha$ , on item averages across all scenarios: positive emotions: Euro, .91; EA-ENG, .90; EA-EA, .89; HK, .91; negative emotions: Euro, .77; EA-ENG, .89; EA-EA, .82; HK, .91).

**Dialectical thinking (DSS).** Measured as in Study 2, the 10-item version of the DSS (Spencer-Rodgers et al., 2009) had adequate reliability (Cronbach’s  $\alpha$ : Euro, .71; EA-ENG, .83; EA-EA, .75; HK, .63).

### Results: Cultural Differences

**Analysis method.** HLM equations were identical to Study 2.<sup>13</sup>

**Obligated and agentic motivation.** As hypothesized, East Asian participants’ ratings of *should* and *want* were more positively associated than those of European-Canadians ( $\beta_{11}$ ,  $\beta_{12}$ ,  $\beta_{13}$ ), though similar to Study 2, this association was also positive among European-Canadians ( $\beta_{10}$ ; see Table 4 and Figure 4, Panel 1).

**Obligated motivation and emotions.** As hypothesized, obligation was more strongly associated with positive emotions among East Asian participants than among Euro-Canadian participants (see Figure 4, Panel 2; Table 4,  $\beta_{11}$ ,  $\beta_{12}$ ,  $\beta_{13}$ ). However, even Euro-Canadians’ *should* ratings were positively related to positive emotions ratings ( $\beta_{10}$ ). Among all cultural groups, negative emotions were negatively related to *should* ratings ( $\beta_{10}$ ,  $\beta_{11}$ ,  $\beta_{12}$ ,  $\beta_{13}$ ).

**Agentic motivation and emotions.** As hypothesized, wanting to help was universally associated with positive, and not-negative, emotions (Table 4;  $\beta_{10}$ ,  $\beta_{11}$ ,  $\beta_{12}$ ,  $\beta_{13}$ ). However, we unexpectedly found that for negative emotions, there was a weaker negative relation between agency and negative emotions in the East Asian groups (Table 4,  $\beta_{11}$ ,  $\beta_{12}$ ,  $\beta_{13}$ ; simple slopes ranging  $\beta = -.91$ – $-1.17$ , shown in Figure 4 Panel 3) compared with the Euro group (Table 4,  $\beta_{10} = -1.40$ ).

### Results: Mediation of Cultural Differences by DSS

Analyses were carried out as in Study 2 to test DSS as a potential mediator. First, linear regression predicting DSS from cultural group comparisons again found that East Asian participants scored higher on DSS than European-Canadian participants: Euro versus EA-ENG,  $\beta = .32$ ,  $t(240) = 4.33$ ,  $p < .001$ ; Euro versus EA-EA,  $\beta = .37$ ,  $t(240) = 5.487$ ,

$p < .001$ ; and Euro versus HK,  $\beta = .72$ ,  $t(240) = 9.62$ ,  $p < .001$ . But as in Study 2, adding DSS to Level 2 of the HLM found no direct effect of DSS on either obligated-agentic associations ( $\beta = -.03$ ,  $p = .325$ ) or obligated-positive emotion associations ( $\beta = -.06$ ,  $p = .121$ ); instead, the significance of cultural differences increased when DSS was included. Therefore, DSS was not further tested as a plausible mediator of these associations.

However, DSS was positively related to agency-negative emotion associations ( $\beta = .27$ ,  $p = .001$ ), and after its addition all three cultural comparison variables became non-significant predictors ( $ps$  ranging from .453–.947; see Online Table 7). The reduction of each cultural difference, indicating mediation, was statistically significant (all partial posterior  $p$  values  $\leq .001$ , and Bayesian CIs above zero: Euro vs. EA-ENG, [.056, .298]; Euro vs. EA-EA, [.094, .435]; and Euro vs. HK, [.145, .584]).

In summary, DSS did not mediate cultural differences in obligated-agentic or obligated-positive emotion associations; however, it fully mediated the unexpected cultural differences in agency-negative emotion associations.

### Study 3 Summary and Discussion

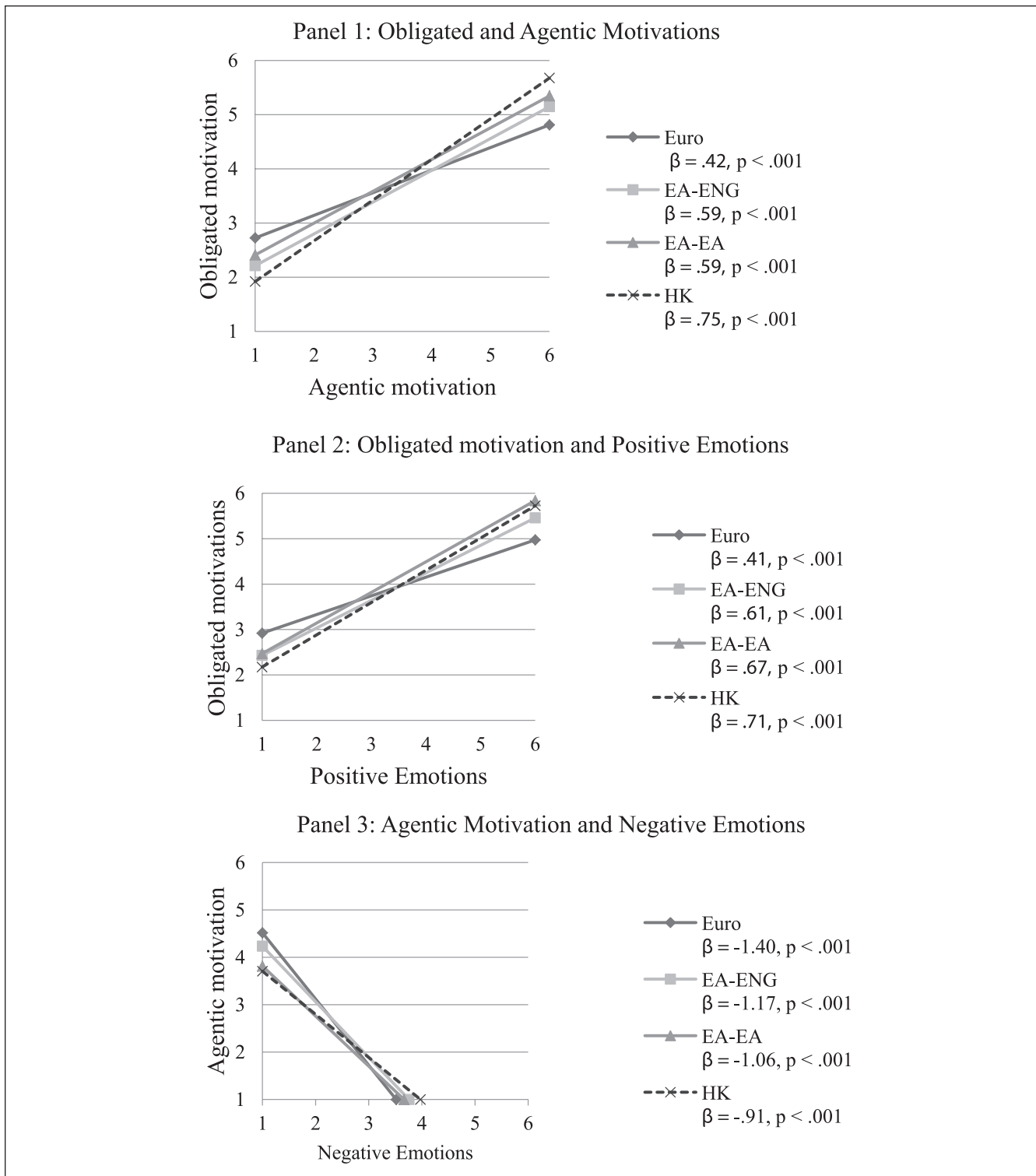
In this study, participants imagined themselves in 20 helping scenarios, sampled from the events described by participants in Study 2. Results replicated Study 2, showing that even when imagining the same situations, CHC-influenced participants viewed agency and obligation as more congruent than did WEHC-influenced participants, and also had more positive emotional associations with feeling obligated; again, we did not find that dialectical thinking mediated these predicted cultural differences. Finally, the emotional experience of agency was again positive and not-negative for all groups; and while we found unexpected cultural differences in agency-negative emotion associations, these differences were mediated by dialectical self-concept, suggesting that although agency is generally viewed positively, CHC participants may reject associations of agency with negative emotions less strongly than WEHC participants because they are more tolerant of contradiction.

Compared to Study 2, Study 3 participants were overall more positive toward obligated motivation; comparison between Figure 3 and 4’s Panels 1 and 2 suggest that in Study 3, obligated motivation was more highly associated with both agentic motivation and positive emotion. This could be due to the different operationalization of obligation in Study 3, as the item “I’d feel like I SHOULD help” might be more likely to be interpreted as internal than the combination of *should*, *expected*, and *duty* items used in Study 2. Nevertheless, despite different scenarios, method, and operationalization of obligation and agency, Study 3 replicated the predicted cultural differences found in Study 2.

**Table 4.** Study 3: HLM Analyses for Cultural Differences.

Fixed effects	DV: obligated motivation IV: agentic motivation			DV: obligated motivation IV: positive emotions			DV: agentic motivation IV: negative emotions			DV: agentic motivation IV: positive emotions		
	$\beta$ (SE)	<i>p</i>	<i>d</i>	$\beta$ (SE)	<i>p</i>	<i>d</i>	$\beta$ (SE)	<i>p</i>	<i>d</i>	$\beta$ (SE)	<i>p</i>	<i>d</i>
<b>Level 1</b>												
Intercept, $\beta_{00}$	2.31 (.21)	<.001		4.78 (.27)	<.001		5.91 (.16)	<.001		1.07 (.22)	<.001	
EA-ENG vs. Euro, $\beta_{01}$	-0.68 (.25)	.006		-0.26 (.33)	.433		-0.51 (.23)	.031		-0.21 (.26)	.404	
EA-EA vs. Euro, $\beta_{02}$	-0.48 (.32)	.138		-0.38 (.37)	.308		-1.04 (.30)	.001		-0.46 (.28)	.095	
HK vs. Euro, $\beta_{03}$	-1.14 (.23)	<.001		-0.35 (.31)	.262		-1.30 (.23)	<.001		-0.40 (.24)	.104	
<b>Level 2</b>												
IV intercept (Euro), $\beta_{10}$	0.42 (.05)	<.001	1.29	-0.55 (.12)	<.001	-0.66	-1.40 (.09)	<.001	1.04	0.84 (.05)	<.001	2.92
IV x EA-ENG vs. Euro, $\beta_{11}$	0.17 (.07)	.012	0.52	.08 (.15)	.611	0.10	0.22 (.13)	.097	0.49	0.02 (.05)	.682	0.07
IV x EA-EA vs. Euro, $\beta_{12}$	0.17 (.08)	.041	0.52	.09 (.17)	.597	0.11	0.34 (.17)	.045	0.67	0.09 (.06)	.152	0.31
IV x HK vs. Euro, $\beta_{13}$	0.33 (.06)	<.001	1.03	.02 (.15)	.904	0.02	0.49 (.13)	<.001	0.76	0.00 (.05)	.996	0.00
<b>Random effects</b>												
Intercept, $u_0$	1.04 (1.02)	<.001		1.98 (1.41)	<.001		1.07 (1.03)	<.001		1.32 (1.15)	<.001	
IV slope, $u_1$	0.08 (0.28)	<.001		0.28 (0.53)	<.001		0.09 (0.30)	<.001		0.30 (0.55)	<.001	
Level 1	.78			1.34			1.02			1.19		.77

Note. Cohen's *d* estimate calculated based on Gelman (2008) and Tymms (2004). DV = dependent variable; EA-ENG = East Asian-Canadian participants who speak English with friends; EA-EA = East Asian-Canadian participants who speak their heritage language with friends; HK = Hong Kong Chinese participants; HLM = hierarchical linear modeling.



**Figure 4.** Study 3: Graphs of significant cultural differences in within-person associations with obligated motivation (should) and agentic motivation (want).

Note.  $\beta$ s are parameters of the simple slope of each cultural group, obtained from HLM analyses using alternative dummy coding. Euro = European-Canadian participants who speak English with friends; EA-ENG = East Asian-Canadian participants who speak English with friends; EA-EA = East Asian-Canadian participants who speak their heritage language with friends; HK = Hong Kong-Chinese participants; HLM = hierarchical linear modeling.

## General Discussion

Across these studies, we find evidence of cultural differences in the degree of a Role Ethics versus a Relative Autonomy view of the obligation to help others: Obligations tend to co-exist with a sense of agency and enjoyment more often for individuals influenced by CHC than for those influenced by WEHC. Such differences might result in cross-cultural misunderstandings of duty-motivated persons (Study 1), as WEHC-influenced participants were more likely than CHC-influenced participants to perceive duty-motivated helpers to be relatively lacking in warmth and competence as well as a sense of choice and enjoyment compared with agency-motivated helpers. Conversely, in Studies 2 and 3, within-person data from daily diary self-reports and 20 situation-sampled scenarios of helping behavior indicated that for CHC-influenced participants, a stronger perception of an obligation to help was more likely to be accompanied by a personal desire to help, and also more likely to be accompanied by positive emotions. Moreover, we did not find evidence that these cultural differences were mediated by dialectical thinking, suggesting that they did not reflect a general tendency among CHC participants to tolerate contradiction.

We also found an important lack of cultural difference in that the emotional experience of *agency* was overwhelmingly positive and not negative.<sup>14</sup> This is consistent with fundamental SDT claims that personal agency may be universally experienced and valued (Miller et al., 2011; Ryan & Deci, 2006a); instead, cultural differences in the construal of duty-relevant external motivators best distinguish a Role Ethics versus a Relative Autonomy motivational perspective.

Despite differences in method and cultural heritage of participants, our findings are in accord with previous studies showing a more agentic experience of duty among Indian versus American participants (Miller et al., 2011; Savani et al., 2011). Study 1 also shows the potential for cross-cultural misunderstandings of duty-motivated persons, whereas Studies 2 and 3 explicitly show that the relationship between obligations and agency is more positive across diverse experiences for CHC participants than for WEHC participants. This illustrates the Role Ethics view shown in Figure 1, suggesting that when CHC participants perceive an obligation to help, they are more likely than WEHC participants to desire to help.

### Challenges to SDT

Do these cultural differences in agency-obligation associations challenge SDT? On the one hand, our results support the view that agency—wanting, personally willing, and choosing to act—is cross-culturally positive, in agreement with Miller et al. (2011) and fundamental SDT claims. However, on the other hand, these findings also emphasize that existing conceptualizations and measures of autonomy problematically conflate obligation with coercion. Echoing

Miller et al. (2011), we suggest that researchers using SDT measures that equate obligation with coercion (e.g., the RAI method of subtracting endorsement of “supposed to,” “should,” or “expected to” from internal motivations) should modify these items to explicitly reflect coerciveness (e.g., “no choice,” “forced to,” “had to”) to better measure a lack of agency. Without such adjustments, RAI measures may approximately track agency in within-culture comparisons (e.g., Nagpaul & Pang, 2017), but will be more problematic for cross-cultural comparisons: Participants from Role Ethics cultures may receive misleadingly low RAI scores that do not reflect their sense of agency (Miller et al., 2011).

Finally, by describing Confucian Role Ethics, we hope we have emphasized how problematic it is that the language of “autonomy,” “self-determination,” and “internalization” easily reflects Relative Autonomy conceptualizations of motivation, but not Role Ethics conceptualizations. Miller et al. (2011), for example, describe their findings as evidence that Hindu Indians “internalize” an obligation to help others; this may elicit a Relative Autonomy interpretation that external expectations have become integrated into internal attitudes (Chirkov, 2014), such that external expectations are no longer referred to as motivators of action. In Hindu concepts of dharma and self-refinement, fulfilling a moral duty is an expression of one’s own nature<sup>15</sup> (Menon, 2013) and so may in fact be experienced as internalized in this sense. However, Confucian Role Ethics is particularly characterized by its emphasis on exquisite responsiveness to situations and expectations external to the self (Ames, 2011). Although more research is needed on possible cultural differences in whether agentic fulfillment of duties can be called “internalization,” adopting such language is likely to misrepresent the agentic “relational virtuosity” of a Confucian Role Ethicist (Ames, 2011, p. 165), and obscure the motivational experiences encouraged by the Role Ethics described here.

Returning to Figure 1, in Role Ethics, the degree to which one *both* perceives an obligation and wants to enact it may be a more psychologically significant dimension than the *relative contribution* of internal versus external motivations. Researching agency, rather than relative autonomy, could better reflect ideal motivational states in both Relative Autonomy and Role Ethics cultures.

### Limitations and Future Directions

As these studies were based on participant-generated, daily helping situations, it will be important to show that our findings can be generalized to other situations. Prosocial behavior may be particularly amenable to invoking Role Ethics motivation orientations, because the obligation to help is tightly linked to virtue (Miller, 2003). The cost of helping is also an important issue that needs to be addressed in future research, as the daily helping situations in our studies were generally rather low cost (e.g., carrying groceries); recent research (Miller, Akiyama, & Kapadia, 2017) has found



larger cultural differences in reactions to high-cost versus low-cost social support situations (see also Footnote 11).

Although in these studies dialectical self-concept does not seem to explain positive agency-duty associations, it still remains to be demonstrated that the assumed Role Ethics mechanism (that is, of perceiving duty fulfillment as a virtue), is a better mediator. Our studies also did not examine differences across relationships with helpees, an important variable that should influence the perceived appropriateness of external expectations. Finally, more research along the lines of Study 1—showing that cultural differences in Role Ethics leads to cross-cultural misunderstandings and prejudice against duty-driven actors—would be particularly valuable to emphasize the importance of cultural differences in lay theories of motivation.

### The Importance of Role Ethics Across Cultures?

Psychology may not have paid enough attention to the potential positive effects of fulfilling the obligations and expectations of others. This could result in mistakenly negative judgments of the practices of Role Ethics cultures; for example, Role Ethics cultures may have culturally specific ways of encouraging agentic duty through teaching, learning, and parenting practices that might be misperceived as too controlling (Huang, Cheah, Lamb, & Zhou, 2017; J. Li, 2003; Soenens, Vansteenkiste, & Van Petegem, 2015). Through a Confucian cultural ethos of lionizing the virtues of filial obedience and adept fulfillment of one’s social roles (Buchtel

et al., 2015), Confucian-heritage Role Ethics may help cultural participants pursue these obligations with a sense of satisfaction and self-endorsement, rather than a sense of coercion or unhappy sacrifice.

However, Studies 2 and 3 results also emphasize that both WEHC and CHC participants have positive reactions to a sense of duty to others. Although cultural differences may be less evident in low-cost helping situations such as those described here, the lack of evidence for a Relative Autonomy, negative relationship between obligations and agency suggests that members of both cultures can experience obligations as agency-supportive.

### Conclusion

A Role Ethics approach shows how we can fulfill obligations while authentically expressing our own personhood (Rosemont & Ames, 2016). In fact, the findings here are ironic: The ideal of self-endorsing one’s duties, particularly a matter of concern in WEHC philosophy, appears to be a greater feature of CHC participants’ experience of obligations. It may be that psychology research has neglected to emphasize the joyous aspects of doing what one ought to do owing to “cultural blinders” about what is important for healthy functioning (Markus & Kitayama, 1994). By examining hypotheses that arise from a non-Western cultural worldview, we emphasize what may also be a universal need: To experience the beautiful and ennobling satisfaction of fulfilling our obligations (Wong, 2006).

## Appendix A

Scenarios and Motivation Manipulations in Study 1.

Number	Scenario content	Survey version A		Survey version B	
		Scenario ending	Motivation condition	Scenario ending	Motivation condition
1	Sara, a university student, went grocery shopping with her mother and helped her shop and carry the bags.	When asked, she said that the reason she did this is because she wanted to help her mother, and it was personally important to her to help her mother.	Agentic	When asked, she said that the reason she did this is because she felt that it was her duty to help her mother, and her mother expected her to help.	Obligated
2	Bob, a university student, helped his younger brother with his science homework, which he was having trouble with.	When asked, he said that the reason he did this is because he felt that it was his duty to help his brother, and his brother expected him to help.	Obligated	When asked, he said that the reason he did this is because he wanted to help his brother, and it was personally important to him to help his brother.	Agentic

Note. Scenario content was based on Study 3 scenarios. Per survey version, scenario endings continued in the same motivation-condition pattern for the remaining four scenarios. Content of Scenarios 3 to 6 were as follows: (3) John, a university student, saw that his friends needed a ride home, so he offered to drive them because they were on the way. (4) Joanne, a university student, was asked by her friend to watch over the cake she was baking. So she stayed in her friend’s kitchen and checked the cake constantly. (5) Barbara, a university student, was taking notes in a psychology lecture. A classmate sitting beside her missed what the professor said and asked Barbara if she could borrow her notes, so Barbara gave her notes to her classmate for a few minutes. (6) Jake, a university student, was completing a homework assignment while waiting for class to start. A classmate sitting beside him was also working on the homework assignment and asked for help on a couple questions, so Jake helped him figure out the answers.

## Appendix B

### Example Study 1 Items (For Scenario 1).

Item	Classification of item
Sara enjoys helping her mother.	Positive emotion (enjoy)
Sara is a kind person.	Warmth
Sara is an intelligent person.	Competence
Sara has good social skills.	Warmth
Sara is a responsible person.	Competence
I would like to have a friend like Sara.	Warmth
If I were an employer looking for employees, I would really want to hire Sara.	Competence
Sara feels like she should help her mother.	Obligation (should)
Sara wants to help her mother out.	Agency manipulation: Attention check
Sara feels it is personally important to her that she helps her mother.	Agency manipulation: Attention check
Sara feels like she is choosing to help her mother out.	Agency (choice)
Sara feels like it is her duty to help her mother.	Obligation manipulation: Attention check
Sara feels like her mother expects her to help.	Obligation manipulation: Attention check

Note. Framing question was given as "What is your impression of Sara?" For the other scenarios, only the name of the helper and gender of pronouns were changed to match scenario content.

## Appendix C

### Scenarios in Study 3.

Scenario source	Scenario content
European-Canadian participants (Study 2)	<ol style="list-style-type: none"> <li>1. My father needed help with calculations.</li> <li>2. My mom's parents are going to be over soon and so she needed quite a few things done around the house like cleaning, sorting out the boxes in our garage etc. I spent my day helping my mother out.</li> <li>3. I helped my grandma carry her luggage to her new home.</li> <li>4. I drove my younger sister to school in the morning.</li> <li>5. My friend wanted some suggestions from me about how she could get back with her boyfriend.</li> <li>6. I helped my friend study for a midterm, pointing out the important things, giving tips for how to write the exam, etc.</li> <li>7. My friends needed a ride home, so I offered to drive them because they were on the way.</li> <li>8. I showed my friend how to install the x-vid divx codec on their computer so they can play back .avi movie files.</li> <li>9. The girl who sits beside me in my psychology class missed something that our professor said and she asked to look at my notes.</li> <li>10. I edited my classmate's abstract.</li> </ol>
East Asian-Canadian participants (Study 2)	<ol style="list-style-type: none"> <li>1. I went grocery shopping with my mom and helped her carry the bags.</li> <li>2. My mom asked me to drop a book off for her friend when I returned home from school.</li> <li>3. Helped my father, organize and type some hymns for church service.</li> <li>4. I helped my brother with his science homework, which he was having troubles with.</li> <li>5. My friend came over to my place and I cooked for her.</li> <li>6. I helped my friend find a room and hand in her assignment.</li> <li>7. Helped my friend to find some articles she could not find.</li> <li>8. My friend asked me to watch over the cake she was baking. So I stayed at her kitchen and checked the cake constantly.</li> <li>9. I let my classmate borrow my Math notes.</li> <li>10. I completed a homework assignment with my classmate; helped her with a couple of questions.</li> </ol>

## Acknowledgments

Grateful acknowledgement for assistance with data collection, translation, editing, and discussion is given to Paolo P. L. Ma, Man Yee Ho, Bacon Chan, Benjamin Cheung, Anna Cooper, Kerry Chang, Samantha Kwong, Stephanie Lai, Alfred Lau, Cindy (Xiaocen) Liu, Andrea Loewen, Lisa Mak, Ashley Ng, Sara Pashan, Damien Tan, Anqi Sun, Timothy Wan, Paul Wagland, Wajma Ebrahimi, and Colin Wastell.

## 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 author(s) disclosed receipt of the following financial support for the research, authorship, and/or publication of this article: This research was supported in part by grant #G-YX2U from The Hong Kong Polytechnic University.

## Notes

1. We necessarily simplify the discussion here, but philosophers puzzle over how to integrate liberal ideals with Confucianism (Bockover, 2012; Ramsey, 2016), and conflict between duty and agency is addressed within the Chinese philosophical tradition—for example, Daoist philosopher Zhuangzi complained that performing official duties was like trying to roam within a cage (H. Sarkissian, personal communication, March 29, 2017).
2. A second study found parallel cultural differences in effects of monetary award on interest, but dialectical thinking was not tested as a mediator.
3. Despite arguments that this is a misunderstanding (e.g., Chirkov, Ryan, Kim, & Kaplan, 2003).
4. Within each study's "Methods and Results" sections, we used terms that are specific to the given study's participant groups to communicate the results more clearly, whereas in the "Discussion" sections we generalize to the Western European or Confucian heritage cultures (WEHC/CHC) that we assume are the source of group differences. This less-than-ideal compromise may remind readers of the complexity and difficulty of communicating about the effects of culture on individuals (Buchtel, 2014).
5. This study was carried out after Study 3; scenario content was based on scenarios used in Study 3, in turn drawn from actual situations originally provided by Study 2 participants.
6. Survey version was included as a between-subjects (not covariate) variable in the ANOVA analysis because it frequently significantly interacted with other variables, leading to violation of ANCOVA assumptions. This was due to main effects of scenario content; for example, the actors in the helping-mother scenario were on average rated more positively on all dependent variables (DVs) than the actors in the helping-brother scenario, regardless of actor motivation, causing the effect of motivation-condition to be influenced by whether the helping-mother or helping-brother scenario was duty versus agency motivated. Between-subjects ANOVA analyses by scenario and by culture showed that the results (in particular, cultural differences in size and direction of the motivation-condition effect) were still consistent with results found with repeated measure ANOVAs controlling for survey version and its interactions. Analyses are available from the first author.
7. Specifically, analyses that included gender and age as covariates reduced the statistical significance of the positive agency-obligation relationship among European-Canadians from  $p = .056$  to  $p = .017$ , but this did not affect the significance of cultural differences or change our overall interpretation.
8. GPower indicated a total  $N = 114$  would have .80 power to detect medium (equivalent of  $d = .50$ ) effects for each of the four effects of interest for each DV (Bonferroni-corrected  $p$  value of  $0.05/4 = 0.0125$ ).
9. Study 2 of Miller, Das, and Chakravarthy (2011; Table 6) reported correlations between duty/responsibility ratings and ratings of choice and satisfaction, respectively, for Indian and American participants; the difference between Indian and American participants' correlations is conceptually similar to the current study. By adapting the functions provided in the *fabs* package for *R* ([github\biesanz/fabs](https://github.com/biesanz/fabs); code is available from the authors), we calculated expected power to detect similarly sized cultural differences in correlations across different variables and cultural group comparisons: The lowest expected power was .71, for the Euro ( $N = 29$ ) versus EA-EA ( $N = 27$ ) comparison, with all other comparisons'  $.82 < \text{expected power} < .92$ . Statistical power may also be higher in the present study than these calculations suggest, as in the current study each variable was measured three or more items on an average of 5.7 days per participant, which may provide a more statistically reliable measure than the two items per variable/participant used in Study 2 of Miller et al. (2011) on which these calculations are based.
10. In both Studies 2 and 3, we also measured other potential mediators, related to vertical collectivism (Singelis, Triandis, Bhawuk, & Gelfand, 1995) and interdependent self-concept, but results were inconsistent across studies. Briefly, a compilation of vertical collectivism-related measures partially mediated cultural differences in Study 2 (partial-posterior  $p$  values averaged  $p = .058$ ), but less so in Study 3 (average  $ps = .10$ ), whereas self-concept measures did not differ by cultural group and so could not be tested as plausible mediators. Full analyses are available from the first author and the data are available on the first author's Open Science Framework page.
11. Both Studies 2 and 3 also included a question "How difficult was it for you to help?" (rated from 1 = *not difficult at all* to 5 = *extremely difficult/time-consuming*). A reviewer suggested that low difficulty of helping might make it easier for participants to feel willing to help as well as obliged to help; thus, low perceptions of difficulty might lead to higher agency-obligation associations and reduced cultural differences. To test if this influenced results, we reran the Study 2 and Study 3 HLM analyses, including participants' average difficulty ratings across helping events as a Level 2 individual difference mediator. In neither study did we find that cultural differences were affected by adding the difficulty variable, though this might be due to the generally low-cost situations. In Study 2, regression analyses indicated that Euro-Canadian participants' difficulty ratings were higher than all other participant groups ( $\beta$ s from  $-.15$  to  $-.39$ ,  $ps$  from  $.099$  to  $< .001$ ) but in HLM analyses, cultural differences did not change after including the difficulty variable,

and difficulty rating had no significant independent effect on the association between agency and obligation. In Study 3, only Hong Kong participants' average difficulty ratings were higher than those of Euro-Canadian participants ( $\beta = .16, p = .032$ ), and again in HLM analyses, adding the difficulty variable did not change cultural differences, although difficulty ratings were negatively associated with ratings of obligation ( $\beta = -.34, p = .060$ ) and, surprisingly, positively related to agency-obligation associations ( $\beta = .12, p = .022$ ). Thus, although difficulty of helping did not affect the cultural differences that are the focus of this article, it may be an important factor to consider in future research.

12. No Study 2 Hong Kong-sourced events were available because Study 3 was completed in Canada before Study 2 was carried out in Hong Kong. To allow comparability of data, the same 20 scenarios were used in both Hong Kong and Canada.
13. Additional analyses examined effects of the cultural source of the scenarios, that is, whether scenarios originating from Study 2 East Asian-Canadians induced a more role-ethics orientation than those from European-Canadians. However, results were inconclusive about scenario-origin effect and did not change conclusions reported here. In summary, for Euro and EA-EA groups only, a more positive relationship between obligated and agentic motivations was observed in scenarios originating from East Asian-Canadians; HK and EA-ENG participants' responses were uninfluenced. This suggests that Study 2 findings were not strongly affected by cultural differences in the situations encountered; however, a larger selection of situations or more culturally distant participant sources might provide a stronger test.
14. When consistent unpredicted cultural differences in the degree of nonnegativity were found (Study 3), dialectical thinking mediated these differences. Although in Study 2, a single cultural difference (more neutral agency-negative emotion association for HK vs. Euro-Canadian participants) was not mediated by DSS, the HK group still showed positive agency-positive emotion associations, similar to the other cultural groups.
15. We thank an anonymous reviewer for this description.

## Supplemental Material

Supplementary material is available online with this article.

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## References

- Ames, R. T. (2011). *Confucian role ethics: A vocabulary*. Hong Kong: Chinese University Press.
- Ames, R. T., & Rosemont, H. J. (2014). Family Reverence (xiao 孝) in the Analects: Confucian role ethics and the dynamics of intergenerational transmission. In A. Olberding (Ed.), *Dao companion to the analects* (pp. 117-136). Dordrecht, The Netherlands: Springer.
- Biesanz, J. C., Falk, C. F., & Savalei, V. (2010). Assessing mediational models: Testing and interval estimation for indirect effects. *Multivariate Behavioral Research, 45*, 661-701.
- Biesanz, J. C., & Schrager, S. M. (2018). *Sample size planning with effect size estimates*. Manuscript submitted for publication.
- Bockover, M. I. (2012). Confucian ritual as body language of self, society, and spirit. *Sophia, 51*, 177-194.
- Buchtel, E. E. (2009). *[Dialectical Self-Concept Scale, 32 items, among 546 UBC undergraduates]*. Unpublished raw data.
- Buchtel, E. E. (2014). Cultural sensitivity or cultural stereotyping? Positive and negative effects of a cultural psychology class. *International Journal of Intercultural Relations, 39*, 40-52.
- Buchtel, E. E., Guan, Y., Peng, Q., Su, Y., Sang, B., Chen, S. X., & Bond, M. H. (2015). Immorality East and West: Are immoral behaviors especially harmful, or especially uncivilized? *Personality and Social Psychology Bulletin, 41*, 1382-1394. doi:10.1177/0146167215595606
- Chen, B., Vansteenkiste, M., Beyers, W., Soenens, B., & Van Petegem, S. (2013). Autonomy in family decision making for Chinese adolescents: Disentangling the dual meaning of autonomy. *Journal of Cross-Cultural Psychology, 44*, 1184-1209. doi:10.1177/0022022113480038
- Cheng, R. W., & Lam, S. (2013). The interaction between social goals and self-construal on achievement motivation. *Contemporary Educational Psychology, 38*, 136-148. doi:10.1016/j.cedpsych.2013.01.001
- Chirkov, V. I. (2014). The universality of psychological autonomy across cultures: Arguments from developmental and social psychology. In N. Weinstein (Ed.), *Human motivation and interpersonal relationships: Theory, research, and applications* (pp. 27-51). Dordrecht, The Netherlands: Springer Science & Business Media. doi:10.1007/978-94-017-8542-6\_2
- Chirkov, V. I., Ryan, R. M., Kim, Y., & Kaplan, U. (2003). Differentiating autonomy from individualism and independence: A self-determination theory perspective on internalization of cultural orientations and well-being. *Journal of Personality and Social Psychology, 84*, 97-109.
- Dunlap, W. P., Cortina, J. M., Vaslow, J. B., & Burke, M. J. (1996). Meta-analysis of experiments with matched groups or repeated measures designs. *Psychological Methods, 1*, 170-177. doi:10.1037/1082-989X.1.2.170
- Fiske, S. T., Cuddy, A. J., & Glick, P. (2007). Universal dimensions of social cognition: Warmth and competence. *Trends in Cognitive Sciences, 11*, 77-83. doi:10.1016/j.tics.2006.11.005
- Gelman, A. (2008). Scaling regression inputs by dividing by two standard deviations. *Statistics in Medicine, 27*, 2865-2873. doi:10.1002/sim.3107
- Gore, J. S., & Cross, S. E. (2006). Pursuing goals for us: Relationally autonomous reasons in long-term goal pursuit. *Journal of Personality and Social Psychology, 90*, 848-861.
- Hamamura, T., Heine, S. J., & Paulhus, D. L. (2008). Cultural differences in response styles: The role of dialectical thinking. *Personality and Individual Differences, 44*, 932-942. doi:10.1016/j.paid.2007.10.034
- Huang, C.-Y., Cheah, C. S. L., Lamb, M. E., & Zhou, N. (2017). Associations between parenting styles and perceived child effortful control within Chinese families in the United States, the United Kingdom, and Taiwan. *Journal of Cross-Cultural Psychology, 48*, 795-812. doi:10.1177/0022022117706108
- Hui, C. M., Fok, H. K., & Bond, M. H. (2009). Who feels more ambivalence? Linking dialectical thinking to mixed emotions. *Personality and Individual Differences, 46*, 493-498. doi:10.1016/j.paid.2008.11.022

- Iyengar, S. S., & Lepper, M. R. (1999). Rethinking the value of choice: A cultural perspective on intrinsic motivation. *Journal of Personality and Social Psychology, 76*, 349-366.
- Jiang, T., & Gore, J. S. (2016). The relationship between autonomous motivation and goal pursuit: A cross-cultural perspective. *Asian Journal of Social Psychology, 19*, 101-111. doi:10.1111/ajsp.12115
- Kant, I. (1993). Grounding for the metaphysics of morals. In J. W. Ellington (Trans.), *Grounding for the metaphysics of morals & on a supposed right to lie because of philanthropic concerns* (pp. 7-62). Indianapolis, IN: Hackett. (Original work published in 1785)
- Kitayama, S., Mesquita, B., & Karasawa, M. (2006). Cultural affordances and emotional experience: Socially engaging and disengaging emotions in Japan and the United States. *Journal of Personality and Social Psychology, 91*, 890-903.
- Li, J. (2003). The core of Confucian learning. *American Psychologist, 58*, 146-147. doi:10.1037/0003-066X.58.2.146
- Li, Y., Sheldon, K. M., & Liu, R. (2015). Dialectical thinking moderates the effect of extrinsic motivation on intrinsic motivation. *Learning and Individual Differences, 39*, 89-95. doi:10.1016/j.lindif.2015.03.019
- MacKinnon, D. P., Fairchild, A. J., & Fritz, M. S. (2007). Mediation analysis. *Annual Review of Psychology, 58*, 593-614.
- Markus, H. R. (2016). What moves people to action? Culture and motivation. *Current Opinion in Psychology, 8*, 161-166. doi:10.1016/j.copsyc.2015.10.028
- Markus, H. R., & Kitayama, S. (1991). Culture and the self: Implications for cognition, emotion, and motivation. *Psychological Review, 98*, 224-253.
- Markus, H. R., & Kitayama, S. (1994). A collective fear of the collective: Implications for selves and theories of selves. *Personality and Social Psychology Bulletin, 20*, 568-579.
- Markus, H. R., & Kitayama, S. (2003). Models of agency: Sociocultural diversity in the construction of action. In V. Murphy-Berman & J. J. Berman (Eds.), *Nebraska Symposium on Motivation: Cross-cultural differences in perspectives on the self* (Vol. 49, pp. 1-57). Lincoln: University of Nebraska Press.
- McShane, B. B., & Böckenholt, U. (2016). Planning sample sizes when effect sizes are uncertain: The power-calibrated effect size approach. *Psychological Methods, 21*, 47-60. doi:10.1037/met0000036
- Menon, U. (2013). The Hindu concept of self-refinement: Implicit yet meaningful. *Psychology and Developing Societies, 25*, 195-222. doi:10.1177/0971333613477320
- Miller, J. G. (2003). Culture and agency: Implications for psychological theories of motivation and social development. In V. Murphy-Berman & J. J. Berman (Eds.), *Nebraska Symposium on Motivation: Cross-cultural differences in perspectives on the self* (Vol. 49, pp. 59-99). Lincoln: University of Nebraska Press.
- Miller, J. G., Akiyama, H., & Kapadia, S. (2017). Cultural variation in communal versus exchange norms: Implications for social support. *Journal of Personality and Social Psychology, 113*, 81-94. doi:10.1037/pspi0000091
- Miller, J. G., & Bersoff, D. M. (1994). Cultural influences on the moral status of reciprocity and the discounting of endogenous motivation. *Personality and Social Psychology Bulletin, 20*, 592-602.
- Miller, J. G., Das, R., & Chakravarthy, S. (2011). Culture and the role of choice in agency. *Journal of Personality and Social Psychology, 101*, 46-61. doi:10.1037/a0023330
- Morling, B., Kitayama, S., & Miyamoto, Y. (2002). Cultural practices emphasize influence in the United States and adjustment in Japan. *Personality and Social Psychology Bulletin, 28*, 311-323.
- Muller, D., Judd, C. M., & Yzerbyt, V. Y. (2005). When moderation is mediated and mediation is moderated. *Journal of Personality and Social Psychology, 89*, 852-863.
- Nagpaul, T., & Pang, J. S. (2017). Materialism lowers well-being: The mediating role of the need for autonomy—Correlational and experimental evidence. *Asian Journal of Social Psychology, 20*, 11-21. doi:10.1111/ajsp.12159
- Oyserman, D., Coon, H. M., & Kummelmeier, M. (2002). Rethinking individualism and collectivism: Evaluation of theoretical assumptions and meta-analyses. *Psychological Bulletin, 128*, 3-72.
- Perunovic, W. Q. E., Heller, D., Ross, M., & Komar, S. (2011). The within-person dynamics of intrinsic and extrinsic motivation, affective states, and cultural identification: A diary study of bicultural individuals. *Social Psychological and Personality Science, 2*, 635-641. doi:10.1177/1948550611405071
- Ramsey, J. (2016). Confucian role ethics and relational autonomy in the Mengzi. *Philosophy East and West, 66*, 903-922.
- Rosemont, H. J. (2006). Two loci of authority: Autonomous individuals and related persons. In P. D. Hershock & R. T. Ames (Eds.), *Confucian cultures of authority* (pp. 1-20). Albany: State University of New York Press.
- Rosemont, H. J., & Ames, R. T. (2016). *Confucian role ethics: A moral vision for the 21st century?* Taipei: National Taiwan University Press.
- Rudy, D., Sheldon, K. M., Awong, T., & Tan, H. H. (2007). Autonomy, culture, and well-being: The benefits of inclusive autonomy. *Journal of Research in Personality, 41*, 983-1007.
- Rudy, D., Sheldon, K. M., Li, Y., Kamble, S., Bi, X., & Palermo, F. (2015). Who chooses best? Explaining the interactive effect of culture and decision maker on children's intrinsic motivation. *Journal of Cross-Cultural Psychology, 46*, 471-488. doi:10.1177/0022022115572684
- Ryan, R. M., & Deci, E. L. (2000). Self-determination theory and the facilitation of intrinsic motivation, social development, and well-being. *American Psychologist, 55*, 68-78.
- Ryan, R. M., & Deci, E. L. (2006a). Self-regulation and the problem of human autonomy: Does psychology need choice, self-determination, and will? *Journal of Personality, 74*, 1557-1585.
- Ryan, R. M., & Deci, E. L. (2006b). *The Self-Regulation Questionnaires*. Retrieved from <http://www.psych.rochester.edu/SDT/measures/selfreg.html>
- Savani, K., Morris, M. W., & Naidu, N. V. R. (2012). Deference in Indians' decision making: Introjected goals or injunctive norms? *Journal of Personality and Social Psychology, 102*, 685-699. doi:10.1037/a0026415
- Savani, K., Morris, M. W., Naidu, N. V. R., Kumar, S., & Berlia, N. V. (2011). Cultural conditioning: Understanding interpersonal accommodation in India and the United States in terms of the modal characteristics of interpersonal influence situations. *Journal of Personality and Social Psychology, 100*, 84-102. doi:10.1037/a0021083
- Shun, K.-L., & Wong, D. B. (2004). Introduction. In K.-L. Shun & D. B. Wong (Eds.), *Confucian ethics: A comparative study*

- of self, autonomy, and community* (pp. 1-7). Cambridge, UK: Cambridge University Press.
- Singelis, T. M., Triandis, H. C., Bhawuk, D., & Gelfand, M. J. (1995). Horizontal and vertical dimensions of individualism and collectivism: A theoretical and measurement refinement. *Cross-cultural Research: The Journal of Comparative Social Science*, 29, 240-275.
- Soenens, B., Vansteenkiste, M., & Van Petegem, S. (2015). Let us not throw out the baby with the bathwater: Applying the principle of universalism without uniformity to autonomy-supportive and controlling parenting. *Child Development Perspectives*, 9, 44-49. doi:10.1111/cdep.12103
- Spencer-Rodgers, J., Boucher, H. C., Mori, S. C., Wang, L., & Peng, K. (2009). The dialectical self-concept: Contradiction, change, and holism in East Asian cultures. *Personality and Social Psychology Bulletin*, 35, 29-44.
- Triandis, H. C., & Gelfand, M. J. (1998). Converging measurement of horizontal and vertical individualism and collectivism. *Journal of Personality and Social Psychology*, 74, 118-128.
- Tymms, P. (2004). Effect sizes in multilevel models. In I. Schagen & K. Elliot (Eds.), *But what does it mean? The use of effect sizes in educational research* (pp. 55-66). London, England: National Foundation for Educational Research.
- West, S. G., Aiken, L. S., & Krull, J. L. (1996). Experimental personality designs: Analyzing categorical by continuous variable interactions. *Journal of Personality*, 64, 1-48.
- Wong, D. B. (2006). *Natural moralities: A defense of pluralistic relativism*. New York, NY: Oxford University Press.
- Wong, D. B. (2017). Chinese ethics. In E. N. Zalta (Ed.), *The Stanford encyclopedia of philosophy* (Spring 2017th ed.). Retrieved from <https://plato.stanford.edu/archives/spr2017/entries/ethics-chinese/>
- Yi, L., Gore, J. S., & Kanagawa, C. (2014). Relational motivation and well-being: A cross-cultural comparison. *Japanese Psychological Research*, 56, 320-330. doi:10.1111/jpr.12056