



# **LIKING FOR ACTION AND THE VERTICAL/HORIZONTAL DIMENSION OF CULTURE IN NINETEEN NATIONS: VALUING EQUALITY OVER HIERARCHY PROMOTES POSITIVITY TOWARDS ACTION**

**Dolores Albarracín<sup>1</sup>**

**Christopher Jones**

*University of Illinois Urbana Champaign, United States*

**Justin Hepler**

*Facebook*

**Iris Hong Li**

*Azusa Pacific University, United States*

---

## **ABSTRACT**

The question of who should act, and how often, is critical for cultures and the regulation of social behavior. The vertical/horizontal dimension of culture describes the relative valuing of hierarchy versus equality. In a horizontal culture valuing equality, responsibility for action is more widely distributed than in a vertical culture valuing hierarchy. The relation between this cultural dimension and general attitudes towards action and inaction was tested with a large-scale survey of respondents from 19 nations. A multi-level model indicated that liking for action was especially associated with horizontality--the valuing of equality. Although values can generally be expressed through various compatible actions, horizontality (valuing equality) entails endorsing distributed responsibility for action and its outcomes, promoting general favorability towards action. In contrast, verticality includes countervailing components that discourage action by promoting norms that constrain who should act in accordance to status.

## **Keywords**

action/inaction, attitudes, culture, social cognition

## **RESUMEN**

La cuestión de quién debe actuar y con qué frecuencia es crítica para las culturas y la regulación del comportamiento social. La dimensión vertical / horizontal de la cultura describe la valoración relativa de la jerarquía versus la igualdad. En una cultura horizontal que valora la igualdad, la responsabilidad de la acción se distribuye más ampliamente que en una jerarquía de valores verticales. La relación entre esta dimensión cultural y las actitudes generales hacia la acción y la inacción fue probada con una encuesta a gran escala de encuestados de 19 naciones. Un modelo multinivel indica que el gusto por la acción se asocia especialmente con la horizontalidad - la valoración de la igualdad. Aunque los valores pueden expresarse generalmente a través de diversas acciones compatibles, la horizontalidad (valoración de la igualdad) implica respaldar la responsabilidad distribuida de la acción y sus resultados, promoviendo la acción. En cambio, la verticalidad incluye componentes compensatorios que desalientan la acción y promueve normas que limitan quién debe actuar de acuerdo al estatus

## **Palabras Claves**

acción/inacción, actitudes, cultura, cognición social

---

<sup>1</sup> Correspondence about this article should be address to



AFICIÓN POR LA ACCIÓN Y LA DIMENSIÓN VERTICAL / HORIZONTAL DE LA CULTURA EN LAS DECIMANOVENTAS  
NACIONES: VALORAR LA IGUALDAD O LA JERARQUÍA PROMUEVE LA POSITIVIDAD HACIA LA ACCIÓN

What determines whether an individual will act or not, especially under uncertainty, is a fundamental question of psychological science, and culture cannot be ignored in the search for answers. Variation in chronic activity levels has been observed across nations (e.g. Levine & Norenzayan, 1999; Noguchi, Handley, & Albarracín, 2009) but the cultural determinants of this variability remain largely unexplored. It is likely that manifest differences in action tendencies are underpinned by psychological differences shaped by culture. For instance, attitudes toward action and inaction may derive in part from culture. Attitudes towards action and inaction refer to the degree of liking or disliking for high or low levels of motor and cognitive activity irrespective of the behaviors in question. Such general attitudes are likely to be significant given recent research demonstrating that general action and inaction goals can be automatically activated (Albarracín et al., 2008; Gendolla & Silvestrini, 2010) and determine output in a variety of both motor and cognitive activities (Albarracín et al., 2008; Laran, 2010). Such evidence for general action and inaction goal systems affords an important theoretical role for attitudes towards action and inaction. Attitudes towards action and active behaviors are typically positive, and variation in liking for action has been found to correlate moderately with other action-related individual differences, such as locomotion, need for closure, and neuroticism, indicating that these constructs are related but yet distinct (Ireland, Hepler, Li, & Albarracín, 2014; McCulloch, Li, Hong, & Albarracín, 2012).

A link between culture and attitudes towards action and inaction is anticipated largely because attitudes are shaped in part by prominent norms, traditions, roles, and values perpetuated by cultures (Hofstede, 1984; Nisbett & Norenzayan, 2002; Triandis, 1964). Cultural identification engenders attitudes and beliefs that facilitate normatively valued behavior, thus the degree of liking for generalized action and inaction may be shaped by features of culture that regulate the value and appropriateness of action. Specifically, culture is known to influence the distribution of responsibility for action. The term “horizontal” has been used to describe cultures valuing equality and can be distinguished from “vertical” cultures that idealize the concentration of control and responsibility according to status and authority (hierarchy) (Singelis, Triandis, Bhawuk, & Gelfand, 1995; Shavitt, Lalwani, Zhang, & Torelli, 2006; Triandis & Gelfand, 1998). In horizontal cultures, responsibility for action is widely distributed. In vertical cultures, responsibility for action is concentrated in individuals of high status, potentially discouraging independent action for the majority of individuals.

The vertical/horizontal dimension of culture has been considered a fundamental aspect of culture often studied in concert with the orthogonal dimension of individualism-collectivism (Hofstede, 1984; Singelis et al., 1995), the most extensively researched cultural construct. Most fundamentally, individualist cultures foster a personal, independent self-construal, whereas collectivist cultures foster a group-based, interdependent construal (Kitayama & Uskul, 2011; Markus & Kitayama, 1991). Individualist and collectivist cultures take on vertical and horizontal forms emphasizing hierarchy and equality, respectively (Singelis et al., 1995; Triandis & Gelfand, 1998; for a review, see Shavitt, et al., 2006). Briefly, vertical individualist (VI) cultures such as France and the United States are characterized by achievement values and emphasis on relative status, particularly through individual competition. Vertical collectivist (VC) cultures such as Korea and India are characterized by authority, tradition, and the group well-being, even at the cost of individual self-sacrifice. Horizontal individualist (HI) cultures such as Sweden and Australia emphasize equality but also uniqueness and self-reliance. Finally, horizontal collectivist (HC) cultures (less likely to predominate at the national level and considered best exemplified by the Israeli kibbutz) value sociability and shared responsibility.

How might the verticality dimension, the valuing of hierarchy versus equality, relate to action and inaction attitudes? One possibility is that the more strongly identified an individual is with any of these cultural values, the more likely one is to view action positively. It is not obvious that any of the quintessential goals of vertical or horizontal cultures would typically be met through inaction, and each might be hypothesized to foster action of some sort. Regarding horizontal cultures, clearly both HI and

HC appear to promote action. It is difficult to imagine how to establish uniqueness and self-reliance (horizontal individualism) but for action, and horizontal collectivist cultures' egalitarian interdependence entails social participation and strong work ethic, also suggesting a general preference for action. Regarding vertical cultures, duty and tradition (VC) at least arguably foster action, and achievement and competition (VI) clearly do so, at least when status is relevant. We assume that each orientation fosters liking for specific behaviors that are especially compatible with culturally-instilled values. There is, however, reason to anticipate differences in attitudes towards generalized action, influencing how individuals view activity and passivity as appropriate responses to various situations with regards both to their own behavior and that of others.

Some recent research and theorizing suggests that impulsive and socially influential forms of action are more constrained and circumscribed in vertical contexts because action is potentially threatening to hierarchy. The closely related construct of power distance belief (the extent to which individuals accept and anticipate hierarchy; Hofstede, 1984) has been shown to relate negatively to impulsive behavior (Zhang, Winterich, & Mittal, 2010). Accepted hierarchies appear to engender respect for social norms and self-restraint, leading to a positive relation between power distance belief and impulse control (Zhang, Winterich, & Mittal, 2010). In other words, verticality may inhibit the expression of broad classes of desired action due to heightened concern for social sanction. In addition, research on innovation—an active, socially beneficial, often premeditated pursuit—has shown power distance to be negatively associated with an index of national-level innovation scores, supposedly because people fear that innovation will “stir the pot” and upset hierarchy (Rinne, Steel, & Fairweather, 2011). If verticality places greater social constraints on action, attitudes towards general action may be less positive in vertical than horizontal cultures. In summary, because the horizontal/vertical dimension of culture regulates the responsibility for action, it is likely to influence attitudes towards action by fostering it in horizontal cultures much more so than in vertical cultures, in which most individuals face greater normative impediments to independent action. This previously unanswered question was examined by analyzing data from a large-scale survey of 19 nations.

### Method

Our data were obtained from a cross-cultural questionnaire administered to samples from 19 nations (or historically distinct regions in the case of Hong Kong). The sample size was 3,797 ( $n_{\text{female}} = 2,480$ ) after excluding 29 participants with incomplete data leaving a large sample in which power to detect correlations is of little concern. A description of sample characteristics appears in Table 1. Study materials were constructed in English, translated into the languages of participants, and back-translated by independent researchers to ensure transfer of meaning. All participants were college students, ensuring broad compatibility across samples in age and level of education. Participants were recruited via institutional participant pools at the universities or recruited through class participation. A packet of questionnaires was administered to each participant. Multiple measures were included to explore patterns of relations to liking for action and inaction with constructs of that might relate to general action tendencies. Three focal measures concern the relation between verticality/horizontality and attitudes towards action and inaction. Reliabilities, means, and standard deviations appear in Table 2. The 32-item vertical/horizontal individualism-collectivism scale (Singelis et al., 1995) assesses VI (e.g. *It is important that I do my job better than others*), VC (e.g. *It is my duty to take care of my family, even when I have to sacrifice what I want*), HI (e.g. *I rely on myself most of the time; I rarely rely on others*), and HC (e.g. *I feel good when I cooperate with others*) constructs by agreement with a series of self-report items on a 9-point scale anchored at strongly disagree and strongly agree. This scale is commonly used in cross-cultural research and has previously been observed to have adequate discriminate and cross-cultural validity (Schimmack, Oishi, & Diener, 1995; Triandis & Gelfand, 1998).



Table 1  
*Sample characteristics for the 19 nations*

Nation	Collection Site	Survey language	% Female	Mean Age (SD)	N
Argentina	Buenos Aires	Spanish	.84	23.3 (6.7)	90
Bolivia	Santa Cruz	Spanish	.75	19.7 (3.1)	236
China	Guangzhou	Chinese	.54	20.2 (.82)	291
Colombia	Barranquilla	Spanish	.82	19.9 (3.4)	193
England	Cardiff	English	.90	19.8 (1.8)	40
Guatemala	Guatemala City	Spanish	.38	20.1 (3.0)	180
Hong Kong	Hong Kong	Chinese	.38	20.0 (1.3)	155
Israel	Ra'anana	Hebrew	.82	27.4 (5.9)	241
Italy	Rome	Italian	.58	22.5 (3.6)	187
Japan	Tokyo	Japanese	.37	19.5 (1.1)	172
Mexico	Mexico City	Spanish	.63	22.8 (4.2)	196
Norway	Oslo	Norwegian	.80	28.5 (7.8)	55
Philippines	Manila	English	.82	17.0 (.79)	150
Portugal	Lisbon	Portuguese	.80	29.3 (11.0)	206
Singapore	Singapore	English	.52	21.3 (1.7)	305
Spain	Madrid	Spanish	.83	21.2 (5.1)	179
Switzerland	Lausanne	French	.78	20.8 (4.0)	302
Turkey	Istanbul	Turkish	.80	22.8 (4.0)	382
United States	Gainesville	English	.67	19.2 (1.2)	237

Table 2  
*Descriptive Statistics for Action and Inaction Attitude and Cultural Measures*

	Alpha	Mean	Sd
<i>Vertical/horizontal individualism-collectivism measures</i>			
Vertical individualism	.78	6.57	1.08
Vertical collectivism	.69	5.14	1.41
Horizontal individualism	.69	6.47	1.15
Horizontal collectivism	.77	5.54	1.24
Attitude towards action	.67	5.62	.75
Attitude towards inaction	.82	4.14	1.27

Attitudes toward action and inaction were measured using two 5-item scales whose convergent and divergent validity were previously established in a sample of American college students by McCulloch and colleagues (2012) and later in the sample of 19 countries examined here (Zell et al., 2012). Items assessed agreement on a 7-point scale with general liking for action (e.g. *action is important in people's lives, being active makes people happy*) and inaction (e.g. *inaction is necessary in one's life, inaction offers many benefits*) in a domain non-specific fashion. Multi-group confirmatory factor analysis found both scales to have adequate measurement equivalency across nations (see Zell et al., 2012). Other measures included in the survey packet are the dialectical self scale (Spencer-Rogers et al., 2010), a Big-5 neuroticism inventory (John & Srivasta, 1999), behavioral impulsivity (Patton, Stanford, & Barratt, 1995), an ad-hoc inventory of religious beliefs corresponding to various major world religions, and measures of mental health (anxiety, depression, and mania).

## Results

### Individual-Level Analyses

Replicating prior research (McCulloch et al, 2012), a general sample-level preference for action ( $m = 5.62$ ) over inaction ( $m = 4.14$ ) was observed  $t(3,796) = 59.9, p < .001, d = 0.97$  (see Table 2). To isolate the individual-level effect, we standardized all variables within nations, which removes nation-level differences as a confound in the individual-level correlations. First, note that even given the very large  $N$ , attitudes towards action and inaction were statistically independent ( $r = .03, p = .06$ ). All subsequent reported correlations are significant at or beyond the .05 level, unless otherwise noted.

Analyses concerning the individualism-collectivism factor did not reveal strong or consistent relations with attitudes towards action or inaction. For example, relative individualism (individualism minus collectivism) revealed small correlations with action ( $r = -.02, ns$ ) and inaction ( $r = .08$ ). Thus, in some subsequent analyses, we collapse across individualism-collectivism distinctions when examining the vertical/horizontal dimension.

The individual-level correlations between the vertical/horizontal dimension and attitudes towards action and inaction were consistent with expectations. Vertical individualism, vertical collectivism, horizontal individualism, and horizontal collectivism all correlated positively with attitudes towards action, but this relation was stronger for horizontal (HI:  $r = .24, 95\%CI [.21, .27]$ ; HC:  $r = .30 [.27, .33]$ ) than vertical measures (VI:  $r = .14, [.11, .17]$  VC:  $r = .15, [.12, .18]$ ). In all four possible comparisons, attitudes towards action were more strongly correlated with the horizontal than the vertical variables according to Steiger's  $z$ -tests ( $p$ 's  $< .001$ ). With respect to attitudes towards inaction, only small relations were observed (all  $r$ s  $< .06$ ) and none achieved practical significance.

### National-Level Analyses

Although there are occasionally dissociations between individual-level and higher-order relations between variables reflecting theoretically meaningful distinctions between levels of analysis, we expected and found a replication of the relation between horizontality and action at both levels. Both HI ( $r = .62 [.23, .84], p < .01$ ) and HC ( $r = .52, [.09, .79], p < .05$ ) means for nations were significantly correlated with positivity towards action despite the much smaller  $N$  of 19 nations. Neither type of verticality was significantly correlated with attitudes towards action ( $p$ 's  $> .10$ ) at the national level, nor did any of the four cultural orientations significantly predicted attitudes towards inaction at the national level ( $p$ 's  $> .10$ ). We also computed *relative* horizontality to verticality (via subtraction), which controls for any method variance common to subscales of the vertical/horizontal individualism-collectivism scale. The relation between relative horizontality (collapsing across individualism-collectivism) and attitudes towards action ( $r = .61, [.22, .83], p < .01$ ) is depicted in Figure 1.

### Multi-level Modeling

We have reported separate individual- and national-level analyses as an illustration, but given the hierarchical nature of this nested data, multilevel modeling allows inclusion of both levels in a single analysis and is appropriate to ensure the robustness of the preliminary analyses. The analysis used the lme4 package (Bates, Maechler, Bolker, & Walker, 2014) for  $R$  with allowing both random slopes and intercepts to examine the relation between verticality/horizontality and attitudes towards action and inaction. We standardized all variables in this analysis and report standardized path coefficients ( $\beta$ ). First, we conducted a multilevel model simultaneously predicting attitudes towards action from HI, HC, VI, and VC. Horizontal individualism again predicted positivity towards action ( $\beta = .18, t = 6.38, p < .001$ ). Horizontal collectivism also predicted positivity towards action ( $\beta = .30, t = 12.38, p < .001$ ). Vertical individualism ( $\beta = .09, t = 3.65, p = .002$ ) and vertical collectivism ( $\beta = .01, t = 0.39, p = .70$ ) were also positively associated with attitudes towards action, but considerably more weakly. Thus, multilevel modeling replicated the simple correlations insofar as endorsement of both hierarchy and equality were each associated with more positivity towards action, but this was more evident for horizontal ideology and endorsement of equality. These results supported our expectations.



We next estimated the variance accounted for (VAF) by the predictors in the following way. We created a baseline model that included a random intercept but no other predictors, and we used the residual variance from this model as the total unexplained variance in the dependent variable. Further, we calculated the residual variance in the model that included predictors (e.g., horizontal collectivism) and used the following formula to calculate VAF:  $[(\text{Total unexplained variance}) - (\text{Residual variance})] / (\text{Total unexplained variance}) * 100$ . Thus, the VAF values presented below represent how much variance is explained by the predictor variables included in that particular analysis relative to a baseline model without those predictors. The individual-collective horizontal/vertical variables accounted for 14.82% of the variance. With respect to attitudes towards inaction, none of the individual-collectivist verticality/horizontality variables statistically significantly predicted liking for inaction in a multilevel model.

Again, we examined relative horizontality by collapsing across individualism-collectivism and subtracting verticality from horizontality. If horizontality is more strongly associated with action than verticality, this variable should be associated with an increase in the favorability of attitudes towards action. This pattern was in fact observed ( $\beta = .12, t = 5.77, p < .001$ ). We also conducted this analysis including age and gender as covariates to test the robustness of this model, but the effect of relative horizontality was unaffected ( $\beta = 0.12, t = 6.63, p < .001$ ). As before, relative horizontality did not predict attitudes toward inaction ( $\beta = .03, t = 1.30, p = .21$ ).

### Discussion

Despite widespread recognition of cultural variability in action levels (Levine & Norenzayan, 1999; Noguchi, Handley, & Albarracín, 2009), little research has addressed the underlying reasons. We anticipated and found that *general* liking for action would correlate more positively with the horizontality than the verticality of cultures. Presumably, an aversion to violating social norms or threatening hierarchy leads to cultural constraints on who should act and when, and thus less positive attitudes towards action. We examined cultural ideology and attitudes towards action and inaction in a large-scale survey of over 3,700 individuals from 19 countries. Multilevel modeling affirmed that the relative endorsement of equality over hierarchy predicted favorable attitudes towards action. These results reinforce the importance of recognizing culture's significance not only for the valuation of specific behaviors, but also for action generally, as culture is likely to influence who should act and how often. By influencing perceptions of how society should be organized and maintained, the vertical/horizontal dimension is important for understanding how individuals perceive social action.

Notably, horizontality was consistently associated with attitudes towards action but was unrelated to attitudes towards inaction. This finding provides further evidence that attitudes towards action and inaction are independent (see also McCulloch et al., 2012) mental representations rather than being two sides of the same coin. As in previous research, attitudes towards inaction were less positive than attitudes towards action, and inaction seemed to show fewer associations with predictors. This particular finding is perhaps not surprising given that people have a relative inability to construct the absence of information, as demonstrated by the feature positive effect (Fazio, Sherman & Herr, 1982; Jenkins & Sainsbury, 1969). Moreover, as inaction most directly relates to rest and repose, cultures may benefit from regulating activity without necessarily controlling the norms of rest.

This research comes with some caveats. First, readers should keep in mind that the samples were not representative of each nation. National means on measured variables may not consistently reflect broader international patterns, particularly due to restriction in age, location within nation, and educational attainment. It may also be the case that the lessened positivity towards action in members of vertical societies does not hold for the most powerful members of a vertical society. Most of our participants were not likely among the limited ranks of those who consistently top social hierarchies across domains of their lives. For those few powerful individuals, the mitigating factors of concern for violating norms and fear of retaliation for threatening hierarchy are less relevant. After all, people at the top have been socialized to take decisive action (e.g. Galinsky, Gruenfeld, & Magee, 2003).

Future research might also validate this correlational finding by manipulating endorsement of equality or hierarchy values experimentally. Though research has demonstrated that the individualist-collectivist dimension of culture can be primed (e.g. Hong, Morris, Chiu, & Benet-Martínez, 2000; Oyserman & Lee, 2008), there has been little investigation of the vertical/horizontal dimension using such techniques (see Shavitt et al., 2006). Developing techniques to successfully prime these values would constitute a substantial advance in this area permitting their experimental manipulation and a more diverse array of methods to study these values.

The present findings may have implications beyond the prediction of general attitudes themselves. For example, the subjective experience of behavior may be affected due to variation in attitudes towards action and inaction. Individuals may find experiences of action or (especially) inaction relatively counterattitudinal, and such discrepancies between attitudes and behavior are often experienced as subjectively disconcerting due to the induction of cognitive dissonance (Festinger, 1957). In other words, cultural values and attitudes towards action and inaction may influence the subjective (un)pleasantness of action, especially when made salient. These cultural orientations may also influence how people judge others for acting or not acting. As these orientations dictate the normativity of actions, individuals may judge others unfavorably when action is perceived as violating norms, such as when acting is seen as rightfully the responsibility of those of higher status. Given the accumulating evidence for general action and inaction goals (e.g. Albarracín et al., 2008; Gendolla & Silvestrini, 2010; Laran, 2010), it will be valuable to understand the determinants and consequences of individual variation in general action orientation and to incorporate these differences into models of behavior.



## References

- Albarracín, D., Handley, I.M., Noguchi, K., McCulloch, K.C., Li, H., Leeper, J., Brown, R.D., Earl, A., & Hart, W.P. (2008). Increasing and decreasing motor and cognitive output: a model of general action and inaction goals. *Journal of Personality and Social Psychology*, 95, 510–23.
- Bates, D., Maechler, M., Bolker, B. & Walker, S. (2014). *lme4: Linear mixed-effects models using Eigen and S4*. <http://CRAN.R-project.org/package=lme4>
- DiMaggio, P. (1997). Culture and cognition. *Annual Review of Sociology*, 23, 263–287.
- Fazio, R. H., Sherman, S. J., & Herr, P. M. (1982). The feature-positive effect in the self-perception process: Does not doing matter as much as doing? *Journal of Personality and Social Psychology*, 42(3), 404–411. doi:10.1037//0022-3514.42.3.404
- Festinger, L. (1957). A theory of cognitive dissonance. Stanford, CA: Stanford U. Press.
- Galinsky, A. D., Gruenfeld, D. H., & Magee, J. C. (2003). From power to action. *Journal of Personality and Social Psychology*, 85, 453–66.
- Gendolla, G. H. E., & Silvestrini, N. (2010). The implicit “go”: masked action cues directly mobilize mental effort. *Psychological Science*, 21, 1389–93.
- Hofstede, G. (1984). *Culture's consequences: International differences in work-related values*. Beverly Hills, CA: Sage.
- Hong, Y., Morris, M. W., Chiu, C., & Benet-Martínez, V. (2000). Multicultural minds: A dynamic constructivist approach to culture and cognition. *American Psychologist*, 55, 709–720.
- Ireland, M. E., Hepler, J., Li, H., & Albarracín, D. (2014). Neuroticism and attitudes towards action in 19 countries. *Journal of Personality*. doi:10.1111/jopy.12099
- Jenkins, H. M., & Sainsbury, R. S. (1969). The development of stimulus control through differential reinforcement. In N. J. Mackintosh & W. K. Honig (Eds.), *Fundamental issues in associative learning*. Halifax, Nova Scotia, CA: Dalhousie UP.
- John, O. P. & Srivastava, S. (1999). The Big Five trait taxonomy: History, measurement, and theoretical perspectives. In L. A. Pervin & O. P. John (Eds.), *Handbook of personality: Theory and research* (2nd ed., pp. 102–138). New York, NY: Guilford.
- Kitayama, S. & Uskul, A. K. (2011). Culture, mind, and the brain: Current evidence and future directions. *Annual Review of Psychology*, 62, 419–49.
- Laran, J. (2010). The influence of information processing goal pursuit on postdecision affect and behavioral intentions. *Journal of Personality and Social Psychology*, 98, 16–28.
- Levine, R. V., & Norenzayan, A. (1999). The pace of life in 31 Countries. *Journal of Cross-Cultural Psychology*, 30, 178–205.
- Markus, H.R. & Kitayama, S. (1991). Culture and the self : Implications for cognition, emotion, and Motivation. *Psychological Review*, 98, 224–253.
- McCulloch, K.C., Li, H., Hong, S., & Albarracín, D. (2012). Naïve definitions of action and inaction: The continuum, spread, and valence of behaviors. *European Journal of Social Psychology*, 42, 227–234.
- Nisbett, R. E., & Norenzayan, A. (2002). Culture and cognition. In D. Medin & H. Pashler (Eds), *Stevens' handbook of experimental psychology, Vol 2.: Memory and cognitive processes*. New York, NY: Wiley & Sons.
- Noguchi, K., Handley, I. M., & Albarracín, D. (2011). Participating in politics resembles physical activity: General action patterns in international archives, United States archives, and experiments. *Psychological Science*, 22, 235–42.
- Oyserman, D. & Lee, S. W. S. (2008). Does culture influence what and how we think? Effects of priming individualism and collectivism. *Psychological Bulletin*, 134, 311–342. doi:10.1037/0033-2909.134.2.311
- Patton, J. H., Stanford, M. S., & Barratt, E. S. (1995). Factor structure of the Barratt impulsiveness scale. *Journal of Clinical Psychology*, 51, 768–774.



- Rinne, T., Steel, G. D., & Fairweather, J. (2011). Hofstede and Shane revisited: The role of power distance and individualism in national-level innovation success. *Cross-Cultural Research*, 46, 91–108.
- Schimmack, U., Oishi, S., & Diener, E. (2005). Individualism: A valid and important dimension of cultural differences between nations. *Personality and Social Psychology Review*, 9, 17–31.
- Schwartz, S. H. & Bilsky, W. (1990). Toward a theory of the universal content and structure of values: Extensions and cross-cultural replications. *Journal of Personality and Social Psychology*, 58, 878–891.
- Shavitt, S., Lalwani, A.K., Zhang, J., & Torelli, C. J. (2006). The horizontal/vertical distinction in cross-cultural consumer research. *Journal of Consumer Psychology*, 16, 325–356.
- 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* 29, 240-275.
- Spencer-Rogers, J., Srivastava, S., Boucher, H. C., English, T., Paletz, S. B., Wang, L., ... Peng, K. (2010). The dialectical self scale. Unpublished manuscript, University of California, Santa Barbara.
- Triandis, H. C. (1964). Cultural influences upon cognitive processes. In L. Berkowitz (Ed.), *Advances in experimental social psychology* (Vol. 1, pp. 1-48). New York, NY: Academic Press.
- 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.
- Zell, E., Su, R., Li, H., Ho, M.-H. R., Hong, S., Kumkale, T., Rossier, J., Massoudi, K., Cai, H., Roccas, S., Arce-Michel, J., de Sousa, C., Diaz-Loving, R., Botero, M. M, Mannetti, L., Garcia, C., Carrera, P., Cabalero, A., Ikemi, M., Chan, D., Bernardo, A., Garcia, F., Brechan, I., Maio, G., & Albarracín, D. (2012). Cultural Differences in Attitudes Toward Action and Inaction: The Role of Dialecticism. *Social Psychological and Personality Science*. doi:10.1177/1948550612468774
- Zhang, Y., Winterich, K. P., & Mittal, V. (2010). Power Distance Belief and Impulsive Buying. *Journal of Marketing Research*, 47, 945–954

Received:  
Accepted:

#### Footnotes

2. Some of the data from this large survey were previously published by Zell and colleagues (2012) and Ireland and colleagues (2014). The former examined dialecticism, the perception and tolerance of contradiction and change, and found that high dialecticism was associated with higher correspondence between action and inaction attitudes (i.e. a dialectic mindset more easily permits similarly valuing each, when otherwise they might easily lie in opposition). The latter examined neuroticism and found reduced positivity for action in neurotics. Neither addressed cultural or individual verticality/horizontality.
3. One reader suggested that GDP or wealth and democratization might be an important control variable, suspecting a positive correlation between attitudes toward action and GDP. Intrigued by this possibility, we gathered the most recent GDP information for each of our sampled nations from the website of the Central Intelligence Agency. We found no relation with relative horizontality ( $r = .07$ ) and a negative correlation at the national level ( $r = -.26$ ) between GDP and attitudes towards action. We used the most recent Democracy Index scores (2012) from the Economist as a proxy for extent of democratic governance. Here, we observed a quite large correlation with relative horizontality ( $r = .70$ ) but a non-significant correlation with attitudes towards action ( $r = .18$ ) and found that controlling for democratization slightly *increased* relative horizontality's relation with attitudes towards action at the nation-level and in the ML model. Thus, we found no evidence that these variables are adequate alternative explanations.