

Holism in a European Cultural Context: Differences in Cognitive Style between Central and East Europeans and Westerners

Michael E.W. Varnum^{a,*}
Igor Grossmann^a
Daniela Katunar^b
Richard E. Nisbett^a
Shinobu Kitayama^a

^a Department of Psychology, University of Michigan, 530 Church Street,
Ann Arbor, MI 48409, USA

^b University of Zagreb, Zagreb, Croatia

* Corresponding author, e-mail: mvarnum@umich.edu

Abstract

Central and East Europeans have a great deal in common, both historically and culturally, with West Europeans and North Americans, but tend to be more interdependent. Interdependence has been shown to be linked to holistic cognition. East Asians are more interdependent than Americans and are more holistic. If interdependence causes holism, we would expect Central and East Europeans to be more holistic than West Europeans and North Americans. In two studies we found evidence that Central and East Europeans are indeed more holistic than Westerners on three tasks, one of which examined categorization and two of which measured patterns of visual attention. These studies support the argument that cross-cultural differences in cognition are due to society level differences in independence/interdependence.

Keywords

Holistic vs. analytic thought, cross-cultural differences, Central Europe, Eastern Europe, Western Europe

Culture fundamentally influences the way we view the world. Over the past two decades psychologists have found that many of their discoveries about human cognition were not universally applicable, but rather a description of a way of perceiving and thinking about the world specific to Western societies. One of the major dimensions of cultural difference, and one of the most studied, is social orientation. People in Western societies tend to be more independent, focusing on personal goals and achievement, and valuing self-efficacy.

People from East Asian societies tend to be more interdependent, focusing more on relationships and maintaining group harmony (Triandis, 1989; Markus and Kitayama, 1991, 1994; Nisbett, 2003; Kitayama and Uchida, *in press*). Westerners tend to define themselves in terms of personal attributes, represent themselves in graphic displays as larger than social others, and experience socially disengaging emotions such as pride and self-esteem more strongly than socially engaging emotions such as feelings of closeness to others and friendly feelings. East Asians tend to define themselves more in terms of valued relationships, represent themselves as equal in size to social others, and experience socially engaging emotions more strongly than socially disengaging emotions (Duffy *et al.*, 2004; Kitayama *et al.*, 2006). Kitayama and Nisbett and their colleagues (Markus and Kitayama, 1991; Nisbett *et al.*, 2001; Nisbett, 2003) have argued that these differences in social orientation affect not only people's values and emotional styles, but also how they perceive and reason about the physical world (Nisbett *et al.*, 2001). People from more independent cultural contexts tend to have a more analytic style of reasoning. They attend more to focal, central objects and their attributes, categorize objects by their shared group membership, explain events and behavior in terms of internal causes, and use logic in reasoning. People from more interdependent cultural contexts tend to have a more holistic style of reasoning. They attend more to context and background, categorize objects by their relationships to each other, explain events and behavior in terms of situational factors and constraints, and reason dialectically (Nisbett *et al.*, 2001; Kitayama *et al.*, 2002; Nisbett and Miyamoto, 2005; Miyamoto *et al.*, 2006).

For example, Masuda and Nisbett (2006) found that East Asians tend to notice more contextual changes in animated scenes than do Westerners. Kitayama *et al.* (2002) also found evidence of a more holistic pattern of attention among East Asians on the Framed Line Task (FLT). Japanese tend to make less error replicating the proportions of lines to frames than do Americans. On both of these tasks East Asians tend to show more sensitivity to context than do Westerners. Ji *et al.* (2004) found that East Asians categorize everyday objects by their relationships, whereas Westerners tend to do so on the basis of membership in formal categories.

Thus, the consistently observed East-West differences in cognition are thought to be tied to differences in social orientation (independence/interdependence). Consistent with this hypothesis, research has shown that priming different social orientations leads to different patterns of cognition (holistic/analytic) (for a review, see Oyserman and Lee, *in press*). However, most of social psychological research investigating the relationships among culture, social orientation, and cognitive style has focused on differences between East Asians and

Americans or West Europeans. These broad cultural areas differ from one another in a host of ways. If the interdependence-holism hypothesis is correct, it ought to be possible to show that any societies that differ in interdependence also differ in cognition. The differences in categorization between Northern and Southern Italians observed by Knight and Nisbett (2007) suggest that holistic cognition is not confined to East Asian cultures, but rather is likely to be found in cultural contexts which are interdependent.

Central and East European societies have been influenced by individualistic (Western) philosophies, but also by factors that encourage collectivism, thus they provide a particularly interesting contrast to Western European and American and societies, for which societal influences have been primarily individualistic. By Central and Eastern Europe we are referring to the post-Communist countries east of Germany including the European parts of the former USSR. Central Europe, as we use the term, refers to the areas of this region that were formerly part of the Austro-Hungarian Empire, including parts of Poland, western Ukraine, the Czech Republic, Slovakia, Hungary, Slovenia, and Croatia.

Central and East Europeans share a great deal of common cultural and historical experience with West Europeans. Central European societies in particular shared a great deal with Western Europe. Cities such as Prague and Budapest were intellectual, artistic and literary centers of Europe that had a distinctly Western flavor. One of the only republics in Europe before the 19th century, Dubrovnik, is located in modern day Croatia, and was the first state to recognize the United States of America (Harris, 2003). However, there are important differences in the proximal and distal history of Central and Eastern Europe that have caused less emphasis on the individual, greater dependence on others, and less motivation for independent agency than is characteristic in the West.

Historians point out that economic development in Central Europe, with the exception of the Czech lands prior to World War II, has lagged behind that in the West for the past several centuries, and argue that social and political systems in the region have generally been more status based and less legalistic (see Chirot, 1989). Rights and privileges within these societies were determined more by one's position in the social hierarchy than by a uniform application of laws and standards. Several other aspects of history and social organization in Central and Eastern Europe seem likely to have produced interdependence. For most of the period before the collapse of Communism, most states in Central and Eastern Europe were autocracies. In the Eastern Balkans, serfdom persisted until the beginning of the twentieth century. Family structure in the region tended to be more based on the extended family than in Western Europe.

In more recent times, Central and Eastern European societies experienced half a century of Communist rule. Communism encouraged collectivist thinking and behavior and structured life in such a way that reliance on others was necessary for survival, and personal connections with others were necessary for success. Communist regimes were repressive, which made situational constraints on speech and behavior highly salient, and education under Communism taught more dialectical methods of reasoning. Communism as a world view posits contextual and situational causes for historical events and individual behavior, Communism also posits a formal dialectical development of human history. These historical factors (both proximal and distal), suggest that Central and East Europeans should be more interdependent and holistic than Westerners.

Indeed several studies have found that Central and East Europeans are more interdependent than West Europeans and Americans. Hofstede (1980) and Kolman *et al.* (2003) found that Central and Eastern Europeans have more collectivist values than Westerners. Tower *et al.* (1997) found that Russians held more collectivistic attitudes than did British. Similarly, Sverko (1995) found that Croats are less individualistic than Americans and West Europeans. Bakasci *et al.* (2002) report Central and Eastern European societies tend to be characterized by higher power distance than Western European societies, which is characteristic of more interdependent societies. In their analysis of 9 post-communist and 12 West European countries, Schwartz and Bardi (1997) found that Central and East Europeans place more importance on hierarchy values and less on mastery and autonomy values indicating greater interdependence in Central and Eastern Europe than in Western Europe. A more recent comparison of Central Europeans and Western Europeans using data from the Schwartz' Universal Human Values Scale collected as part of the European Social Survey (a large scale, representative cross-national survey) found that Central Europeans place more importance on conformity than West Europeans, and that Central Europeans place less importance on self-direction than do West Europeans (Varnum and Wolchik, data not shown). Additionally, Markova *et al.* (1998), compared participants in 3 Central European societies (Slovakia, Czech Republic, Hungary) with those in 3 Western European societies (Scotland, England, France) on a free association task, finding more negative meanings associated with "the individual" in Central Europe than in Western Europe.

Varnum and Wolchik (data not shown) also found an interaction between age and region on these dimensions, such that younger Central Europeans more closely resembled younger West Europeans (holding more individualis-

tic values than older adults), while the differences were greater among older adults in the two regions. Additionally, Varnum and Bowman (2007) found evidence that younger Central Europeans have a more internal locus of control and more dispositional patterns of attribution than older Central Europeans, while the opposite pattern was found in North America and Western Europe. Furthermore, Varnum and Bowman (2007) found evidence of a shift towards more internal locus of control over time in Central Europe, while there was little or no change in North America and Western Europe, and found that Slovaks primed with the communist period show more external locus of control and more situational attribution than those primed with the post-communist period. Thus, there is some reason to believe that contemporary differences in independence/interdependence in Europe are related to adaptation to Communism in addition to more distal historical factors.

There is little research comparing cognitive habits of people in Central or Eastern Europe with those in Western Europe. However, the research that exists is consistent with the notion that Central and East Europeans are more holistic than Westerners. Kühnen *et al.* (2001) have shown that Russians tend to have a more holistic pattern of attention than Westerners. Russians, like East Asians, demonstrate more field dependence than Americans and Germans. While Kitayama *et al.* (2006) found that Germans showed significantly more field dependence than Americans, Kühnen *et al.* (2001) found no differences between these two groups. Recently, Grossmann (2008) found evidence that Russians categorize more thematically, make more situational attributions for behavior, and tend to predict more change than do Americans. Cultural variations in cognitive style can be thought of as a continuum with North Americans and West Europeans being the most analytic, Central and East Europeans being intermediate in cognitive style (though leaning towards more holistic cognition), and East Asians being the most holistic.

If indeed social orientation leads to different types of cognition (holistic vs. analytic), then Central and East Europeans should demonstrate a more holistic cognitive style than Westerners. If we find this to be the case, then our research will support the notion that East-West differences in cognition are linked to differences in independence/interdependence. We predicted that (1) Central and East Europeans would show a greater tendency to categorize everyday objects thematically (that is, by their functional relationships rather than shared, taxonomic category membership) than Westerners and (2) Central Europeans would pay more attention to context than Westerners, performing better at judging proportions in the Framed Line Task of Kitayama *et al.* (2002) and focusing more on context in Masuda and Nisbett's (2006) change

blindness task. We expect that, while these differences will be significant, they will be present to a lesser extent than the differences previously observed between Asians and Westerners on these dimensions.

Study 1: Categorization

Participants

The sample included 24 graduate students (15 male, 9 female) from Western European countries studying at the University of Michigan, and 25 Central and Eastern European graduate students (10 male, 15 female) studying at the University of Michigan (see Table 1 for a breakdown by country). Participants received \$20 for taking part in the study. The sample also included 44 undergraduate students (19 female, 25 male) from the University of Michigan, and 115 undergraduate students (60 male, 55 female) from the University of Zagreb. Undergraduate participants took part in the study in order to fulfill a course requirement.

Table 1
Study 1 graduate students by country

Armenia 1	Belgium 1
Croatia 1	Finland 1
Czech Republic 2	France 7
Estonia 1	Germany 4
Hungary 2	Greece 4
Moldova 1	Italy 2
Poland 1	Netherlands 1
Romania 4	Spain 4
Russia 9	
Slovakia 1	
Slovenia 1	
Ukraine 1	

Materials

Triads. The instrument consisted of 18 pairs of images of common objects (Chiu, 1972), with a target object on the bottom and two choices at the top of the page. All objects were presented as visual images. In each triad one of the options (labeled “A” and “B”) was related to the target taxonomically and

one was related to the target thematically or relationally. For example, for one item there was a train as a target, and a bus and train tracks as the two options. Selecting bus would be a more taxonomic answer, selecting the train tracks would be a more relational or thematic answer. Participants were asked to indicate which option “goes with” the target by circling “A” or “B” on their answer sheet. The triads were counter-balanced so that taxonomically related objects and thematically related objects each appeared on the right or the left an equal number of times. The samples in the US were tested in English. The materials were translated into Croatian for the University of Zagreb sample.

Results

We took the mean percentage of thematic and taxonomic choices made by each participant across the 18 items in the task. All groups showed a tendency to categorize thematically, however this tendency was greater among Central and East Europeans, $M = 0.75$, $SD = 0.22$, and Croats, $M = 0.75$, $SD = 0.17$, than it was among West Europeans, $M = 0.61$, $SD = 0.23$, and Americans $M = 0.69$, $SD = 0.23$. A simple effects ANOVA was conducted for culture’s impact on percentage of thematic answers with 2 levels (East, West). The results showed that Central and East Europeans (including Croats) categorized more thematically than Americans and West Europeans, $F(1,209) = 9.41$, $P < 0.003$.

Study 2: Change Blindness and the Framed Line Test

Previous research comparing people from East Asia with Westerners, has shown that those from more interdependent cultural contexts tend to have a more diffused pattern of attention, and those from more independent cultural contexts tend to have a more focused, or narrow, pattern of attention. East Asians are inclined to attend more to relationships between elements, and to background and context. In contrast, Westerners tend to focus on central objects and highly salient individual elements of complex scenes.

We expected to see corresponding differences in attention between Central Europeans and Americans. In a study using animated vignettes, Masuda and Nisbett found that East Asians noticed more changes to the background and changes in the relationship of objects than did Westerners. Another measure of sensitivity to context is the Framed Line Task (FLT), which Kitayama *et al.* (2002) used to examine field dependence. In the FLT participants are briefly presented with lines in frames and then asked to replicate either the absolute length of the original line in a frame of a different size, or are asked

to replicate the proportion of the original line to the original frame in a frame of a different size. In that study, Kitayama found that East Asians tended to be more accurate in replicating the proportion of lines to frames than were Americans. We expected to find a similar pattern when we compared Croats and Americans.

Participants

The study included 57 American undergraduates from the University of Michigan and 29 undergraduates from the University of Zagreb. Fifty Americans (13 male, 37 female) completed the Change Blindness task and all 57 Americans (16 male, 41 female) completed the FLT. Twenty-three Croats (8 male, 15 female) completed the Change Blindness task and all 29 Croats (13 male, 16 female) completed the FLT. American students received US\$15 for taking part in the study; Croatian students received 50 Kuna (approximately US\$10) for their participation (Croatian economic standards are somewhat lower than American ones). All participants were run individually.

Materials

Change Blindness. We used the five pairs of animated vignettes which were previously used by Masuda and Nisbett (2006, study 2). These vignettes consist of 5 pairs of animated scenes such as airports and farms, which are slightly different from each other. In the second vignette of each pair several changes in both context and focal objects have taken place. Each animation lasts for 20 seconds. Participants are asked to record differences between the first and second animated sequence of the same scene. Participants are instructed to watch each pair of animated scenes 4 times.

Framed Line Task. In the FLT participants are shown lines in frames with gray backgrounds (Kitayama, et al. 2002). In the absolute task participants are shown a line in a frame and then asked to duplicate a line of the same absolute length in a frame of a different size. In the relative task, instead of being asked to duplicate the absolute length of lines, participants are asked to duplicate the proportion of the lines to the frames in which they appeared. The task consists of three practice trials and 6 timed trials. In the timed trials participants are exposed to each image for 5 seconds, after which they are asked to duplicate the line. When they have done so, they move on to the next trial. The order of the tasks was counter-balanced so that for roughly half of the participants the absolute task appeared first, and for the other half the relative task appeared first. This instrument is used to assess field dependence. People whose atten-

tion is more holistic should perform better on the relative task and worse on the absolute task due to a greater focus on the relationship of the line and frame rather than a narrow focus solely on the line.

Procedure

Participants completed the change blindness task on a computer, followed by the FLT. Participants were run individually. Demographic data were also collected. All instructions were translated into Croatian for the University of Zagreb students, and Croatian students wrote in Croatian on the change blindness task.

Results

Change Blindness. For each participant the mean number of focal and contextual changes across all 5 scenes was computed and the averages were summarized in order to determine group differences in attention. All data were translated into English by a Croatian translator who was hypothesis blind and transcribed the written responses to typed responses. The responses were coded by 2 Americans, who coded all responses. All coders were blind to the culture of the participants whose data they coded. We used the same coding scheme developed by Masuda and Nisbett (2006) in coding the participants' responses. Changes detected in the attributes of focal objects such as shape, color, or number of objects, were coded as focal changes. Focal objects were defined as salient, foregrounded and/or rapidly moving objects. Changes detected in contextual information, such as changes to the background, the relationship of objects to each other, or in the objects' movement from one place to another, were coded as contextual changes. Interrater reliability was measured for the total number of focal and contextual changes detected per participant, the correlation between coders for focal changes was high (96% for focal changes, 93% for contextual changes).

Simple effects analysis revealed that Croats were less likely to detect focal changes than Americans, $F(1,72) = 5.17$, $P < 0.03$ (see Figure 1). The groups did not differ in their likelihood of detecting contextual changes. While the interaction did not reach the level of statistical significance, $F(1,72) = 1.22$, $P = ns$, this pattern of differences in attention between Americans and Croats was similar to the pattern of differences in attention observed by Masuda and Nisbett (2006) in their Study 2.

Framed Line Task. For each participant we measured the number of millimeters of error on each item of the FLT. We did this by comparing the participants'

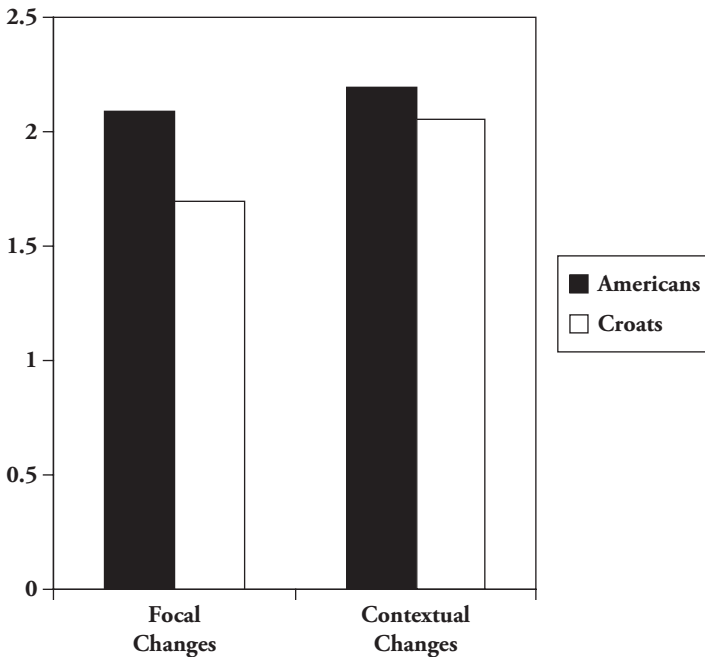


Figure 1. Study 2: Mean number of focal and contextual number of changes detected on change blindness task per group.

responses with the correct length of the original lines (for the absolute task), and by comparing the participants' responses with the correct length of the lines which would preserve the proportion of the original line to the original frame (for the relative task). We then computed the mean error each individual made across the six trials of each task. Both Americans and Croats showed better performance on the relative task than the absolute task. However, Croats, $M = 4.52$, $SD = 1.84$, showed less error than Americans, $M = 6.56$, $SD = 4.49$, in the relative task, $t(81.37) = 2.97$, $P < 0.005$; but there was no such difference for the absolute task (see Figure 2). A 2 (culture) \times 2 (order) \times 2 (task) ANOVA found a marginally significant interaction between culture and task, $F(1,81) = 3.21$, $P < 0.08$. There was no effect for the order in which participants completed the two sections of the instrument on the amount of error they made on the two tasks, $F(1,81) = 0.94$, $P = ns$, nor was the interaction of culture, task, and order significant, $F(1,81) = 2.79$, $P = ns$. This pattern lends support to our prediction that Croats have a more holistic attention style than Americans.

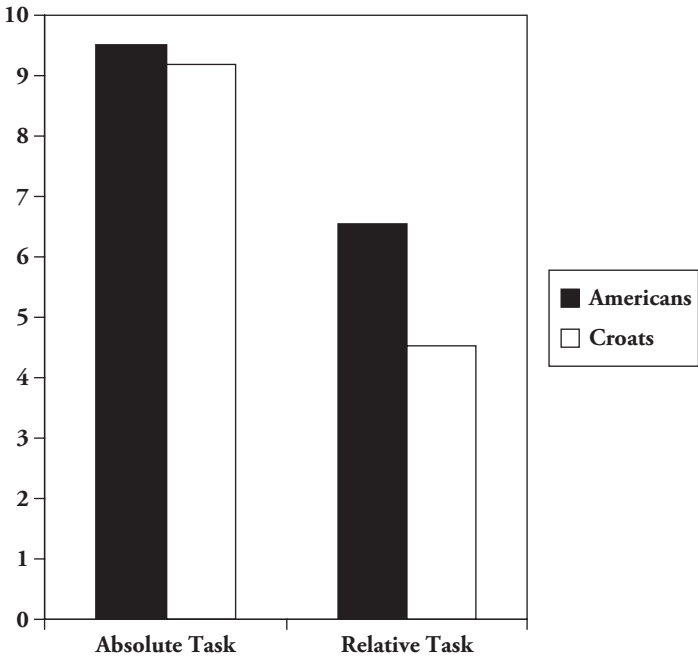


Figure 2. Study 2: Mean error on FLT, in millimeters, by task, per group.

Discussion

In two studies we found evidence to support the idea that society-level differences in independence/interdependence are tied to corresponding differences in individual cognition. Central and East Europeans showed more holistic patterns of cognition than Westerners. Central and East Europeans categorized more thematically than West Europeans; Croats categorized more thematically than Americans. Croats demonstrated a more holistic pattern of attention than did Americans on two perceptual tasks, noticing fewer focal changes on the change blindness task than did Americans and performing better on the relative task of the FLT than Americans did. The magnitude of the differences we observed was smaller than that found in similar comparisons between Westerners and East Asians, suggesting that Central and East Europeans occupy an intermediate place on the Holistic-Analytic continuum.

These results bolster the claim made by Markus and Kitayama (1991) and Nisbett *et al.* (2001) that it is differences in social orientation between East Asians and Westerners that cause differences in cognition. Just as East Asians

are more interdependent than Westerners, Central and East Europeans are more interdependent than West Europeans and Americans. Just as East Asians are more holistic than Westerners, Central and East Europeans are more holistic than West Europeans and Americans. Together with the fact that priming independent social orientation prompts analytic cognition and priming interdependent social orientation prompts holistic cognition (Oyserman and Lee, in press), the present results argue against other hypotheses about the reasons for cognitive differences including most particularly genetic differences. Genetic differences among people of European cultures are obviously much less than genetic differences between Europeans and East Asians, yet we find substantial cognitive differences between European groups differing in social orientation.

One question raised by the present research is what impact the major political and economic changes which have occurred in post-communist states since 1989 may have had on cognitive processes. These changes have been especially pronounced in Central Europe. It is conceivable that the large scale social, political, and economic changes of the past two decades may lead to greater independence and perhaps eventually more analytic styles of perception in these cultures. Increases in social mobility, greater freedom of expression, the permeation of Western values, and increased rewards for individual initiative seem likely to encourage shifts toward a more independent social orientation. Indeed, recent research has indicated that such a shift has in fact occurred (Varnum and Bowman, 2007). Future studies comparing the cognitive style of older and younger adults or priming different historical periods in post-communist European societies may shed light on the extent to which changes have impacted this dimension as well.

References

- Bakacsi, G., Sándor, T. and András, K. (2002). Eastern European cluster: Tradition and transition. *Journal of World Business* 37, 69-80.
- Chiro, D. (Ed.) (1989) *The origins of backwardness in Eastern Europe: Economics and politics from the middle ages until the early twentieth century*. University of California Press, Berkeley, CA.
- Chiu, L.-H. (1972). A cross-cultural comparison of cognitive styles in Chinese and American children. *International Journal of Psychology* 7, 235-242.
- Duffy, S., Uchida, Y. and Kitayama, S. (2004). Symbolic self-inflation in Japan and the US. Unpublished manuscript, University of Michigan, Ann Arbor, MI.
- Grossmann, I. (2008). Cognitive differences between Russians and Americans. Unpublished data, University of Michigan, Ann Arbor, MI.
- Harris, R. (2003). *Dubrovnik, a history*. Saqi Books, London.
- Hofstede, G. (1980). *Cultures' consequences*. Sage Publications, Beverly Hills, CA.
- Ji, L.-J., Zhang, Z. and Nisbett, R. E. (2004). Is it culture or is it language? Examination of language effects in cross-cultural research on categorization. *Journal of Personality and Social Psychology* 87, 57-65.

- Kitayama, S., Duffy, S., Kawamura, T. and Larsen, J. T. (2002). Perceiving an object in its context in different cultures: A cultural look at the new look. *Psychological Science* 14, 201-206.
- Kitayama, S., Mesquita, B. and 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.
- Kitayama, S., Duffy, S. and Uchida, Y. C. (in press). Self as Cultural Mode of Being. In S. Kitayama and D. Cohen (Eds.), *Handbook of Cultural Psychology*. Guilford Press, New York, NY.
- Knight, K. N. and Nisbett, R. E. (2007). Culture, class, and cognition: Evidence from Italy. *Journal of Cognition and Culture* 7, 283-291.
- Kolman, L., Nooderhaven, N. G., Hofstede, G. and Dienes, E. (2003). Cross-cultural differences in Central Europe. *Journal of Managerial Psychology* 18, 76-88.
- Kuhnen, U., Hannover, B. and Roeder, U. (2001). Cross-cultural variations in identifying embedded figures: Comparisons from the United States, Germany, Russia, and Malaysia. *Journal of Cross-Cultural Psychology* 32, 365-371.
- Markova, I., Moodie, E., Farr, R. M., Drowzda-Senkowska, E., Eros, F., Plichtova, J., Gervais, M. C., Hoffmannova, J. and Mullerova, O. (1998). Social representations of the individual: A post-communist perspective. *European Journal of Social Psychology* 28, 797-829.
- Markus, H. R. and Kitayama, S. (1991). Culture and the self: Implications for cognition, emotion, and motivation. *Psychological Review* 98, 224-253.
- (1994). The cultural construction of self and emotion: Implications for social behavior. In S. Kitayama, and H. R. Markus (Eds), *Emotion and culture: Empirical studies of mutual influence*, pp. 89-130. American Psychological Association, Washington, DC.
- Masuda, T. and Nisbett, R. E. (2006). Culture and change blindness. *Cognitive Science* 30, 1-19.
- Miyamoto, Y., Nisbett, R. E. and Masuda, T. (2006). Culture and the physical environment: Holistic versus analytic perceptual affordances. *Psychological Science* 17, 113-119.
- Nisbett, R. E., Peng, K., Choi, I. and Norenzayan, A. (2001). Culture and systems of thought: Holistic vs. analytic cognition. *Psychological Review* 108, 291-310.
- Nisbett, R. E. (2003). *The geography of thought: How Asians and Westerners think differently ... and why*. Free Press, New York, NY.
- Nisbett, R. E. and Miyamoto, Y. (2005). The influence of culture: Holistic versus analytic perception. *Trends in Cognitive Science* 9, 467-473
- Oyserman, D., and Lee, S. S. (in press). Priming “culture”: Culture as situated cognition. In S. Kitayama and D. Cohen (Eds.), *Handbook of Cultural Psychology*. Guilford Press, New York, NY.
- Peng, K. and Nisbett, R. E. (1999). Culture, dialecticism, and reasoning about contradiction. *American Psychologist*, 54, 741-754.
- Schwartz, S. H. and Bardi, A. (1997). Influence of adaptation to communist rule on value priorities in eastern europe. *Political Psychology*, 18, 385-410.
- Sverko, B. B. (1995). The structure and hierarchy of values viewed cross-nationally. In D. E. Super and B. B. Sverko (Eds.), *Life roles, values and careers*, pp. 225-241. Jossey-Bass, San Francisco, CA.
- Tower, R. K., Kelly, C. and Richards, A. (1997). Individualism, collectivism and reward allocation: A cross-cultural study in Russia and Britain. *British Journal of Social Psychology* 36, 331-345.
- Triandis, H. C. (1989). The self and social behavior in differing cultural contexts. *Psychological Review* 96, 269-289.
- Varnum, M. E. W. and Bowman, N. A. (2007). Shifts in theory of agency in post-communist Central Europe, submitted.