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Cultural Variation in Causal Attribution as an Adaptive Strategy: the Role of Relational Mobility

by

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Abstract

Previous research has shown cultural differences between Japan and the United States stem from differences in holistic vs. analytic cognition. The purpose of this study is to examine the impact of the socio-ecological factor relational mobility on social cognition in the form of causal attribution. Study 1 confirms previous research on differences across Western and East Asian causal attribution styles by finding higher perceptions of relational mobility and greater tendency toward dispositional attribution in the American participants, and lower relational mobility perception and more consistent situational attribution in Japanese participants. In Study 2, we prime American participants with high vs. low relational mobility and test for changes in causal attribution. Consistent with the predictions, high relational mobility was related to increased dispositional attribution and low relational mobility was related to increased situational attribution. Collectively, these studies show relational mobility is a socio-ecological factor of culture that correlates with causal attribution and can be manipulated to change perceptions of a social situation.

Keywords: Relational Mobility, Causal Attribution

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Cultural Variation in Causal Attribution as an Adaptive Strategy:
The Role of Relational Mobility

郷に入っては郷に従え

Entering the village, obey the village.

When in Rome, do as the Romans do.

To counter a world of unpredictability, societies have established elaborate social contracts that structure normative “culture.” However as any visit to a neighboring country, state, or even village can tell us, cultures are different everywhere. As most humans spend the majority of their lives within the confines of their home culture, their learned mannerisms naturally mold their social cognition--particularly in the ways we come to understand the actions of others. In Western cultures, people tend to assume that an individual’s actions are caused by their personality or values, and often overlook environmental forces. In Eastern cultures, however, people are more likely to consider the power of the situation which influences the actions taken by an individual (Choi et al, 1999; Morris & Peng, 1994).

In recent years, the growing literature in cross-cultural psychology has outlined differences in Eastern and Western cognition. However, to move past simply comparing culture through psychological methods and actually understand the basis from which these differences stem, psychologists must ask why these distinctions exist and examine surrounding confounders. Relational mobility is a socio-ecological factor that reflects the degree to which individuals in a given social environment can voluntarily form new and leave existing relationships (Schug et al., 2010; Yuki & Schug, 2012). As the availability of opportunities to form new relationships (or

lack thereof) influences the social behavior of individuals, it may in turn influence how people perceive the behavior of others. As this research shows, variation in causal attribution, i.e., the reasons we assume of another person's actions, serves as an adaptive strategy based on how relationally mobile an individual believes their current social environment to be.

Limitations of Current Literature

Cross-cultural research is imperative to furthering the field of psychology. As it stands, most mainstream psychological research is WEIRD. That is to say, most research tends to study Western, Educated, Industrialized, Rich, Democratic populations (Arnett, 2008; Henrich, Heine, & Norenzayan, 2010). This demographic comprises a relatively small proportion of the world's population, and so basing a body of research on such a narrow sample reduces external validity. Moreover, to understand a topic as large and amorphous as "culture", we must provide a clear definition substantiated by empirical measurement. Culture is not stagnant; it is subject to change within generations because of surrounding socio-ecological factors. Thus in order to understand cultural variation, it is important to note that systematic variation in human behavior and psychological processes vary as a function of socio-ecology.

Social Ecology

Thus far, several research paradigms have examined the role that social ecology plays in human behavior and psychology. Gelfand et al. (2011) generated a model that relates external socio-ecological factors to observed cultural "tightness-looseness" (see Gelfand, 2011). In cultures that are tight, they found a presence of strong norms and lower tolerance of deviant behavior (the breaking of trust), whereas loose cultures demonstrated fewer universal norms and less negative responses to deviant behavior.

Another important socio-ecological construct is residential mobility, which tracks the frequency of individuals' change in residence, and marks trends at a societal level (Oishi, Schug, Yuki, Axt, 2015). High residential mobility settings, where individuals move in and out of places frequently, lead to members more easily cutting ties and forming new ones. In contrast to residential mobility, relational mobility is defined as the ease of which one can voluntarily enter and exit a social group or relationship (Schug et al., 2010; Yuki & Schug, 2012). Relational mobility is the variable of interest in this research because it is subject to variance both between communities and among individuals via their perception of the social landscape around them. It is important to note the difference between residential and relational mobility: while residential mobility, particularly when defined as the number of times an individual has moved is often externally affected by factors out of one's control (e.g., children with a parent serving in the military who are frequently relocated), relational mobility reflects variation in the availability (and the perception of availability) in relationship formation opportunities (Oishi, Schug, Yuki, & Axt, 2015). This study aims to illustrate how perception of these opportunities (relational mobility) can fluctuate, as humans are socially sensitive to changes in tightness-looseness, and demonstrate these changes in perception through subjects' variance in social strategies.

Relational Mobility

With the definition of relational mobility being the ease of which societies afford individuals opportunities to voluntarily enter and exit social relationships (Schug et al., 2010; Yuki & Schug, 2012), there is naturally a variability between high and low levels of this factor across different situations. In high relational mobility settings there is no set in-group to conserve relations with, and so individuals have to be ready to make or break ties as they see beneficial to

them. On the one hand, they lack the security of a closed circle, and on the other they have the freedom to prune their social networks over time. An example of a high relational mobility setting would be a college campus, where students can easily shift through clubs, extracurriculars, social circles, and romantic relationships.

Though a culture of individualism would intuit a more guarded and skeptical individual, studies have found the opposite: higher relationally mobile societies have greater generalized trust than lower relationally mobile ones (Kuwabara et al., 2014). Generalized trust measures the default amount of trust a person places in a stranger. Because individuals in loose societies have the ability to make new bonds easily, they must be ready to trust others. This in itself is an adapted cooperative strategy, but also feeds into another adaptation: a greater ability to discern who is trustworthy (Ishii, 2007). Schug, Yoo, and Atreya (2017) show that generalized trust is lower in cultures where cultural strongly regulate behavior, which they propose may be due to the ease at which individuals in different societies can make dispositional attributions for behavior. They propose that in societies with strong social norms, one cannot make dispositional attributions about another individual's trustworthiness (i.e., if they are a "good" or "bad" person), but instead will understand behavior as being predominantly driven by social norms. In this sense, dispositional attribution is well-adapted strategy for a loose or highly relationally mobile society, where behaviors are in fact more likely to be caused by internal traits and preferences rather than a result of external social pressure from social norms or social networks (Gelfand, 2011; Carpenter, 2000).

In low relational mobility settings, or tight cultures, individuals are constrained to a social network that is less subject to change. Because of whatever external ecological confines are

native to a group, members find themselves having to focus energy on the people around them that are unlikely to change -- almost like being trapped in a room. Thusly, a cultural norm of preserving relationships with others in one's social circle evolves as an adaptive strategy. An example of this in practice would be a middle-schooler not sticking up for a classmate who is being teased by their friend group, as a means of self-preservation in that friend group. Another example would be a businessman sharing credit with his coworkers for closing a deal, rather than taking the recognition for himself. This keeps his reputation as a team player; a desirable trait when one is limited to smaller group that they consistently interact with.

In low relational mobility contexts, it is in the individual's best interest to stay on good terms with others, in order to avoid being excluded from one's current relationships (e.g., Yamagishi, 2011). Social circles are not perfectly closed circles, they are all interconnected. Those living in lower relationally mobile settings do not see a defined perimeter to their network, and so tend to value and demonstrate more "politeness" or sensitivity to reputation - not knowing who might be connected to their circle. As well as being consciously other-regarding, people in this setting are more sensitive to negative feedback or rejection (Sato, Yuki, & Norasakkunkit, 2014).

The Pen Studies

The term "strategy" often implies active thought and calculation. However, in the context of human behavior, strategies are not necessarily conscious but can instead be intuitive or automatic processes. Rather than overtly driving certain actions toward others, a social strategy is often subtly nuanced in areas as seemingly personal as preference. One series of studies examining preferences for uniqueness and conformity illustrated how in many cases cultural

differences in behavior are often strategic in nature, rather than purely based on internalized cultural norms and preferences.

Kim & Markus (1999) investigated differences in uniqueness vs. conformity preference across East Asians and European Americans. The research overall was comprised of four studies, their ultimate conclusion being East Asians prefer conformity as a symbol of harmony and connection whereas Americans prefer uniqueness as a symbol of freedom and individuality (Kim & Markus, 1999). This research reinforced the popular anthro-psychological concepts of “individualist” and “collectivist” cultures. In one study, they asked traveling East Asians and European Americans in the San Francisco International airport to complete a questionnaire, and rewarded them after with a pen they could choose. From the five pens offered, one or two pens was a “unique” color, and three or four pens were a “majority” color. They found that European Americans chose the unique pen more often than East Asians who tended to choose the majority color. Based on this study, they concluded their hypothesis on individuality vs. conformity preference in Americans vs. East Asians, respectively, was supported.

In 2008, Yamagishi, Hashimoto, & Schug revisited the same paradigm, but instead focused on the influence of the situation by studying choices of European American and Japanese participants in situations that systematically differed in the degree to which one’s choices might impact one’s reputation. In the first study, they asked European American and Japanese participants to choose a pen either in private, or directly from the experimenter. They found that they were able to replicate the effects of Kim and Markus’ original study, whereby Euro-American participants were more likely to choose the unique pen, while Japanese participants were more likely to choose the majority pen. However, unlike the original study,

they found that when choosing a pen in private (i.e., in a room with no others present) Japanese participants preferred the unique pen just as often as the American participants. This result provided initial evidence that the Japanese “preference” for the majority pen was not caused by an internalized preference for conformity, but instead might be a strategy for maintaining social standing.

In their second study, Yamagishi and colleagues (2008) asked Japanese and American participants to report which pen they would choose in a number of different scenarios. This study focused on order of choice -- discerning the extent to which choosing the unique pen might cause negative evaluations from others. In the default condition, they asked participants to report whether they would prefer a unique pen or a majority pen, but did not provide any contextual information. In the “first-choice” condition, they asked participants which pen they would choose if they were in a room with other people who would be choosing a pen after them. In the “last-choice” condition, they asked participants which pen they would choose if they were choosing last among a group of people. Finally, in the “purchase” scenario, they asked participants which pen they would purchase at a store, if there happened to be one pen of one color, and four pens of another color. These four scenarios represent situations that differ in contexts involving other people. When choosing a pen after others have already made their choice or when purchasing a pen at a store, there is little need to consider how your choice of a pen might affect other people. However, taking the only pen of unique color before others have had an opportunity to make their own choice can potentially deprive others of their desired selection, which might offend others and cause oneself to incur negative reputation.

The results of this study showed that in situations in which there was no consideration of others required, (i.e., the purchase scenario and the last-choice scenario) both Japanese and American participants generally preferred the unique pen, and there were no cultural differences in the extent of this preference. Likewise, in situations where it was obvious that one's choice might impact others (and thus potentially cause a loss of reputation), both Japanese and American participants chose the majority pen. Thusly, in this scenario, even "individualistic" Americans behaved in an other-regarding manner to the same degree as Japanese participants did.

The only difference was in their default scenario, in which no contextual information was provided. In this condition, American participants chose the unique pen, while Japanese participants chose the majority pen. Choices in this scenario represent the default strategy in each culture: in the absence of context suggesting whether or not participants should attend to others, Japanese participants chose a default strategy to downplay their own preferences and opted for the "safe" strategy that minimized negative impact on others. In comparison, the default strategy Americans used was to maximize one's self-interest and disregard the preferences of others. Yamagishi and colleagues argue that cultural differences in the default strategy reflect the utility of that strategy in the type of situations that are most common in each society. In Japan, most situations are those in which individuals must consider how others may view their behaviors (i.e., most situations are similar to the "first choice" scenario), and thus rely on a default strategy to avoid drawing negative attention to oneself. In the United States, most situations are similar to the last-choice or purchase scenarios where there is little need to pay attention to the opinions of others and thus one can safely focus on their own self-interest. This echoes the responses of the

first study and demonstrates that, in private, Japanese and Americans show the same preference for the unique object. Only when observed (and conscious about what others might think) do Japanese show the “preference” for conformity. The fact that participants from both cultures showed consideration for others when choosing first and acted on personal preference when choosing last demonstrates similarities of self-interest across cultures. In essence, Yamagishi et al. (2008) challenges the popular idea that ‘East vs. West’ means ‘Collectivist vs. Individualist’ because their findings prove people everywhere want to be perceived as kind and unselfish while also trying to get the things they want. The default strategy, being the differentiator between the two cultures, demonstrates that the differences between social groups lie in what tactic people have found works best in their world.

In revisiting their 2008 study, Yamagishi et al. (2011) conducted an experiment that further explored the default strategy titled “Stadtluft Macht Frei” after the medieval proverb that denotes the freedom felt while living in a city. In this study, the same pen paradigm was used, but exclusively on Japanese participants. They tested people from rural and urban communities to see the difference in their social mindfulness default strategies, and found urban Japanese chose the unique pen more often than the rural Japanese participants. While the disparity in default strategies between rural and urban participants may not have been comparable to that of the Japanese and Americans from the earlier study, the key finding is that there is indeed a disparity. The rural and urban participants both came from the greater Japanese culture, and yet defaulted to different levels of individualism (acting on personal preference) and collectivism (yielding to potential desires of others before their own). Differences in population size and crowdedness alter relational mobility, which contributes to distinct social default strategies and

the norms that surround them. These cultural differences denote variation in social cognition styles, which proves problematic for macro theories developed in Western cultures such as the Fundamental Attribution Error.

Fundamental Attribution Error

Lee Ross (1977) theorized the “Fundamental Attribution Error” (FAE) following a study by Jones & Harris (1967) where participants were asked to identify the “true attitude” of an author of a pro- or anti- Fidel Castro essay. The other variable participants were told was whether the author was in a high-choice or low-choice condition; i.e., how forced their essay writing was. Jones & Harris found a less than “rational” tendency of participants to attribute the written perspective to the author’s true personal values, even in conditions where they were told the author was forced to write it (Jones & Harris, 1967). The Fundamental Attribution Error was termed, and defined as “the general tendency to overestimate the importance of personal or dispositional factors relative to environmental influences” (Ross, 1977).

This theory that has been so widely received is challenged by the fact that other cultures outside of the WEIRD demographic exist. In fact, research shows East Asians tend to point to situational or environmental factors far more than dispositional (Choi et al. 1999; Nisbett, 2003); contrary to what the Fundamental Attribution Error theory deems fundamental in other-regarding cognition.

Causal Attribution

The Fundamental Attribution Error pivots around “dispositional attribution”--the tendency to attribute an action to the personality or internal motives (i.e., “fundamentals” that do not change) of a person and in turn overlook the external factors that may have warranted a

particular response (Krull, 2001; Ross, 1977). Dispositional attribution is linked to more analytic cognition, which points to a single object in the foreground and analyzes it as is (Nisbett & Miyamoto, 2005; Masuda & Nisbett, 2001). This style of cognition isolates an object or idea from its surrounding factors and instead ascribes inherent values to it.

Social psychology recognizes that human behavior is formed as a function of both the person and the environment (Lewin, 1936), in part by nature and in part by nurture, as well as how an individual has learned to navigate previous situations. However, the ratio of attribution between person and environment varies widely between members of different cultures. The FAE from Western thought overly attributes actions to disposition (i.e, the person), while research on East Asian participants demonstrates more consistent situational attribution (Ross, 1977; Nisbett, 2003; Choi et al., 1999).

Situational attribution is consistent with holistic thinking, which incorporates more of the surrounding information when evaluating a single object. Holistic thinkers are more sensitive to context, and so cultures in East Asia where this framework is commonplace demonstrate more situational attribution. This attribution is elicited when evaluating others, as well as when evaluating the self. Indeed, research has found that in collectivist cultures an individual will more often attribute their success to the larger group or situation that surpasses their control. Meanwhile, individualists credit their successes to their own merit (Carpenter, 2000; Al-Zahrani & Kaplowitz, 1993).

Differences in analytic and. holistic cognition are also exemplified in the way people evaluate others. Shweder and Bourne (1982) studied differences in Indians' and Americans' methods of describing another person. They found that Indians tend to use examples of actions

such as “She brings cakes to my family on festival days” whereas Americans point to a more abstract adjective like “She is friendly” (Shweder & Bourne, 1982). This clearly illustrates the contrast across cultures of dispositional versus situational mindsets when individuals interpret the actions of another person.

Cultural differences, however, are not black and white. East Asians may focus more on external loci of control and situationally attribute actions, but they are not blind to dispositional attribution; they just tend to think of it as more malleable and less influential than situational factors (Choi et al., 1999). Conversely, Westerners may be quick to analyze and label others by their disposition, but naturally anyone with empathy can rationalize situational factors when interpreting another’s actions.

Recreating Jones & Harris’ study (1967), Tetlock (1985) found that when asked to justify their attributions of the essay writer’s intent, participants have trouble explaining the impressions they reported. And when made aware beforehand that they would be held accountable, they were “significantly more sensitive to situational determinants of the essay writer’s behavior” (Tetlock, 1985). This finding shows that a heightened awareness of public image around empathy leads people to think more holistically and attribute more externally.

Further research shows that cultural differences in attribution style tend to widen with development. Children across cultures begin with about the same ratio of situational-dispositional attribution, but over time diverge to fit the attribution style most prevalent in their culture. Miller (1984) studied Indian and American children at ages 8, 11, and 15, and compared them to adults from each culture by asking each participant to recount either a pro- or anti-social situation they had witnessed. They found across both cultures, participants’

narratives involved a greater prevalence of situational attribution starting at 8 and continuing up until 15. Over time, however, the U.S. participants began to favor dispositional attribution; ending with a stark contrast between Indian (situational) and American (dispositional) adults in causal attribution. This study demonstrates how attribution can change as humans adapt with age and assimilate to their culture; the evidence being everyone's social cognition starts in about the same place.

Cognitive Differences as an Adaptive Strategy

Recalling the findings of Yamagishi (2008)'s pen study regarding private versus public choice, we see people act similarly universally when social context is removed. In actuality, East Asians are no less self-serving than Westerners. However in an effort to maintain self-preservation, their interactions are marked with more humility. Cross-cultural research has challenged Western theories such as the "self-enhancement motive" which asserts that people act to maintain a positive self-regard (Brown, 1986; Brown, 2003). The literature points to disparities between Eastern "Collectivism" and Western "Individualism", with collectivism being colloquially dubbed as seeking joy in the advancement of others, which would seemingly counter the self-enhancement motive (Fiske, Kitayama, Markus, & Nisbett, 1998). However, as this thesis attempts to purvey, there is actually some universal value to be considered in the "self-enhancement motive" theory. East Asian holistic thinkers act in a collectivist manner not because they desire the happiness of others over their own, but rather to avoid the negative ramifications that would come from acting singularly and offending others.

Honne - tatemae | 本音-建前 is a Japanese idiom meaning "true feeling" and "façade", speaking to the disconnect that is commonly felt between action and desire. Familiar idioms such

as this can be referred to as social axioms, which signify common thought on regularly encountered situations. Social axioms are a proxy for culturally constructed beliefs and worldviews that members of a group all subscribe to (Leung et al, 2002; 2007). In just this one culture, we see that Japanese people are sympathetic to the idea of acting one way in situations out of their control while wanting to act differently; so much so that a phrase is commonly recognized among native Japanese speakers. As the pen studies (Kim & Markus, 1999; Yamagishi et al. 2008, 2011) demonstrate, East Asians choose the majority colored pen as a means of self-preservation, even though they may actually desire the unique pen more. This social strategy may look different from what the self-enhancement motive outlines in Western tradition, but the theory of self-interest remains intact.

Universally encountered themes such as standing out are met differently across cultures; but viewed from a self-enhancement standpoint, we can still point to them as socially adaptive strategies. “The squeaky wheel gets the grease” is an American proverb taken to mean one among many that makes noise and makes itself known will get the attention it desires. A countering Japanese proverb 出る杭は打たれる (*deru kui wa utareru*) that translates as “the nail that sticks out gets hammered down” means if found out of place or not serving the collective purpose, an individual will be made to fit where they belong. Just these few examples illustrate a significant disparity between two cultural views on individuality; these being only from East Asia and North America.

Investigating culturally specific behaviors as an adaptive strategy comes from the institutional approach coined by Yamagishi et al (2008). An institution is a shared system of interdependent beliefs, behaviors, and incentives (Aoki, 2001). We see individuals adapt

strategies of keeping equilibrium to navigate these institutions (Cohen, 2001; Yamagishi, 2008). Heuristics, or mental shortcuts based on familiar paths, show a history of successful and failed social encounters and the resulting adaptive strategies; and so offer a valuable perspective on culture through commonalities (Gigerenzer & Todd, 2000).

Heuristics represent certain cognitive tools that we carry by default in our day to day lives. To illustrate: if you have learned to use a hammer as your choice tool in your everyday life, because you only ever interact with nails, you will continue carrying a hammer with you until you encounter a screw and have to pick up and learn a new tool that will help you engage the problem. It takes mental energy to shift between these tools, and so heuristically we tend to assume most social tests we will undergo will succeed at the use of our regular method.

The “tool” that one keeps in hand by default represents one’s “default strategy.” Importantly, the default strategy that is most useful will be determined by what types of adaptive problems are most common in one’s social ecology. If different cultures have different types of situations, individuals must adapt their behavior and psychological processes to hold those modes of thinking. Therefore, cognition changes as an adaptive strategy of self-preservation. In the case of attribution, internal or dispositional attribution is more useful in societies where behavior is less constrained by social relationships, whereas external or situational attribution is more useful in societies where behavior is more constrained.

Current Research

Tooby and Cosmides (1992) asserted that culture naturally emerges from two processes. It can be “evoked” by certain situations that call for a preprogrammed response, and can also be “transmitted” subconsciously during development through imitation, instruction, and mimicry

(Tomasello, Kruger, & Ratner, 1993; Nisbett, 2003; Richerson & Boyd, 2005; Sperber, 1996; Norenzayan, 2006). This latent transmission and absorption of cultural norms can be exemplified in part by perceptions of relational mobility. If culture is rooted in modes of thought and consequential style of attribution, which is the way we come to understand other people, culture itself by extension is an adaptation.

The purpose of this research is to investigate how accessible that adaptation is. In examining participants both across and within cultures, this study aims to illustrate how causal attribution is influenced by shifts in relational mobility at a smaller scale. It is known that East Asian (Japanese) participants typically favor situational attribution and American participants tend toward dispositional attribution (Masuda & Nisbett, 2001; Choi et al., 1999). But through a simple priming exercise on relational mobility, we can flip the cognition and have Americans think and attribute like Japanese. The idea of “culture”, therefore, is reduced to the individual making the most ecologically rational social decision they are capable of at any given time.

Kim & Markus' (1999) pen study took one of the first steps out of the isolated WEIRD demographic, however effects of the FAE were still at play. The researchers assumed that the behaviors shown by East Asian and American participants were caused by their disposition (i.e., internalized cultural preferences), rather than an aspect of the environment. The bulk of the subsequent literature on cross-cultural psychology still follows this model of disposition: that the East and the West just have different personalities, as if culture were that simple. One goal of this paper is to move current psychological literature forward from the Western tradition of dispositional attribution, and explore socio-ecological factors that are truly cross-cultural. Relational mobility is a universal confounder that has not been previously overlaid with causal

attribution, and offers a measurable explanation for why “culture” varies across and within societies.

Study 1: Causal Attribution in the United States and Japan

The purpose of Study 1 was to compare the responses of Japanese and American participants as they attributed the actions of persons in different scenarios to dispositional (internal) or situational (external) factors. There were two main goals to the study. The first goal was to replicate previous research (Ross, 1977; Nisbett, 2003; Choi et al., 1999; Morris & Peng, 1994) showing differences in attributional style in the U.S. vs. in Japan. The tendency for situational (vs. dispositional) attributions for behavior was predicted to be more pronounced in the Japanese sample, whereas the opposite pattern would be found in U.S. participants. The second goal was to determine whether relational mobility (as measured by the relational mobility scale) correlates with situational vs. dispositional attribution. It was predicted that (H1) Japanese vs. U.S. participants would demonstrate more situational vs. dispositional attribution, respectively, and (H2) perceptions of relational mobility will be higher in U.S. vs. Japanese participants; replicating results from previous studies. Additionally, we predicted (H3) high relational mobility would increase dispositional vs. situational attribution.

Method

Participants. 160 Japanese (53 female, 107 male; Mean age=20.49, SD=1.17) participants from a medium size institution in the Kansai region of Japan, and 135 American (101 female, 34 male; Mean age=18.89, SD=1.48) from the College of William & Mary (U.S.) comprised the participant pool for a total of 295 subjects. Participants in both countries completed the study in exchange for partial course credit.

Materials and Procedure. Participants in both countries completed the Social Judgment Task (Kitayama et al., 2006) in small groups using paper-and-pencil, rather than an online survey. To assess attributional tendency, participants completed the survey including a series of four brief narratives capturing either a socially desirable or undesirable action. Each narrative briefly described the action of a person, and was free of any personality descriptions or adjectives as well as any allusion to outside causes of the behavior. Scenarios were a combination of either pro- or a-social behaviors with little surrounding context provided: (S1) A female executive at a pharmaceutical company donated a large amount of their expensive, newly developed malaria drug to fight an outbreak in South America. (S2) A doctor made an avoidable mistake while performing routine ulcer surgery, and the patient died. The doctor told the family she died of a heart attack. (S3) A powerful city official arranged for a certain construction company to build a new bridge that was voted on, and in return received a considerable amount of money from the company; knowing bribery is illegal. (S4) Instead of taking vacations in his off-season, a professional football player holds free football camps for underprivileged children. (See full narratives in Kitayama et al., 2006). For each scenario, participants responded to four questions, two of which assessed internal attribution (e.g., "Features of (Person) influenced his

behavior”), and two of which assess external attribution (e.g., “(Person) would have acted differently if features of the surrounding environment had been different”).

To assess participants’ perceptions of relational mobility in their local society, participants then completed the relational mobility scale (Yuki et al., 2007). This 12-item scale asks participants to rate how easily people in their local society are able to meet and choose new friends and acquaintances, as well as voluntarily depart from existing groups and relationships.¹ Participants rated items (e.g., “It is common for (people in my society) to have a conversation with someone they have never met before”) on a 6-point Likert scale (1: strongly disagree; 6: strongly agree). Finally, participants completed a brief demographic questionnaire.

Results

The means and standard deviations for each of the assessed measurements are shown in Table 1. Replicating the effects of previous studies, perceptions of relational mobility were significantly higher in the U.S. sample ($M=4.59$, $SD=.71$) sample compared to the Japanese sample ($M=3.92$, $SD=.55$), $t(251.47)=8.90$, $p<.0001$.

¹ Importantly, participants rate the degree to which *others in their society* have the ability to forge new and depart from old relationships, rather than their own personal ability to form new relationships. This distinction is critical for two reasons. First, an individual’s personal ability to form new relationships will be dependent on their own level of social attractiveness, rather than the availability of relationship formation opportunities in their local society. Second, because there is a well known tendency for self-enhancement among Americans, and self-effacement (i.e., strategic modesty) in Japanese participants, making comparisons of self-appraisals regarding one’s own level of social attractiveness between these two countries is problematic. The relational mobility scale circumvents these issues by asking participants to rate the degree to which “people around them in their immediate society” have opportunities to form new relationships.

Table 1. Means and standard deviations per measure of the Dispositional, Situational, and Relational Mobility variables for results in Japan and U.S.A.

<i>Country</i>	<i>N</i>	<i>Variable</i>	<i>Mean</i>	<i>Standard Deviation</i>
Japan	160	Disp.	5.25	(0.74)
		Sit.	4.66	(0.84)
		RM	3.92	(0.55)
U.S.A.	135	Disp.	6.03	(0.64)
		Sit.	4.79	(0.99)
		RM	4.59	(0.71)

To compare the attribution styles of Japanese and American participants, we conducted a 2 (Country: Japan vs. U.S.) x 2 (Attribution: Dispositional vs. Situational) mixed model ANOVA, with Country as a between-subjects variable and Attribution as a within-subjects variable. The results indicated significant main effects for country $F(1, 293)= 41.21, p<.0001$, whereby American participants tended to provide higher ratings overall compared to Japanese participants, as well as an overall effect for Attribution styles $F(1, 293)= 211.17, p<.0001$. These effects were qualified by a significant interaction between Country and Attribution style $F(1, 292)= 26.74, p<.0001$.

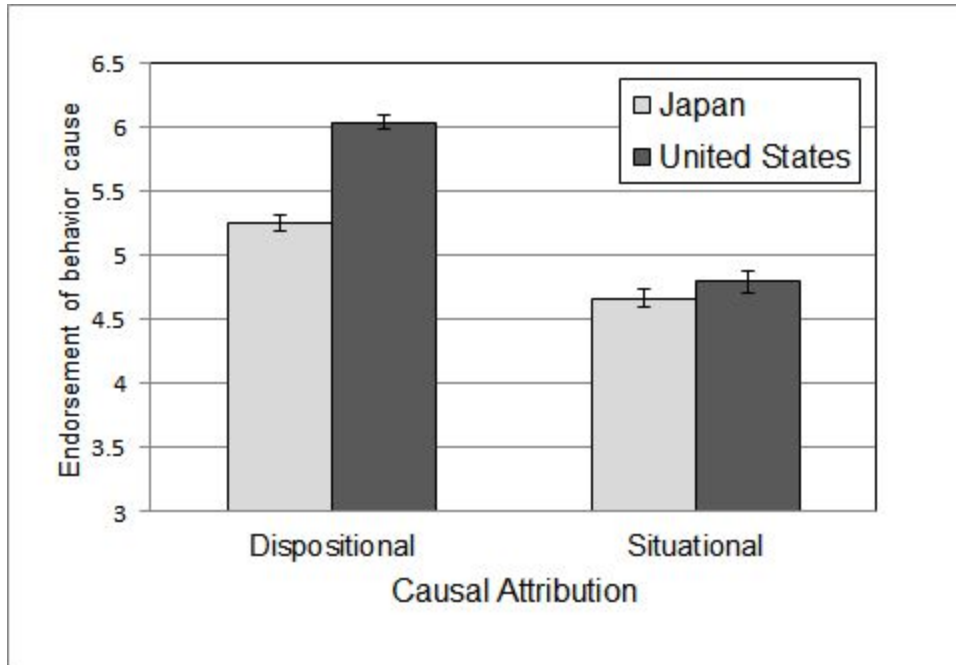


Figure 1. Endorsements of situational and dispositional attribution styles as a function of country. Error bars represent standard errors of the mean.

The interaction effect for Country and Attribution styles is shown in Figure 1. Overall, the significant interaction effect between culture and attribution style reflects differences in the relative magnitude of Situational vs. Dispositional Attributions in each country. Bonferroni adjusted post-hoc comparisons indicated that while American and Japanese participants did not significantly differ in their tendency for situational/external attributions $t(293)=1.23, p=.22$, American participants were much more likely than Japanese participants to assume dispositional reasons for the behavior of the protagonists $t(293)=9.62, p<.0001$.

Next, we sought to examine whether participants' perceptions of relational mobility, as measured by the relational mobility scale, were related to attribution styles within and across cultures. To do so, we examined correlations between relational mobility, dispositional attribution, situational attribution, and the tendency for dispositional attribution styles relative to

situational attribution, which is calculated as the difference between the two scores. The results are shown in Table 2.

Table 2. Correlations between relational mobility and attribution styles. Partial correlations for all data removing the effect of country are shown on the upper right, and Pearson correlation coefficients for the U.S. and Japanese samples are shown on the bottom left, with Japanese data to the right of the slash and U.S. data to the left.

	<i>Relational Mobility</i>	<i>Dispositional Attribution</i>	<i>Situational Attribution</i>	<i>Dispositional – Situational</i>
Relational Mobility	--	.21***	-.08	.20***
Dispositional Attribution	.15† / .23***	--	.13*	.54***
Situational Attribution	-.17† / .03	-.02 / .26**	--	-.77***
Dispositional – Situational	.22* / .18*	.55*** / .54***	-.85*** / -.67***	--

Note. † $p < .10$, * $p < .05$, $p < .01$, $p < .001$.

Overall, the correlations between attribution tendencies were similar in both countries: Relational mobility positively correlated with the overall tendency for individuals to make dispositional attributions vs. situational attributions in both Japan ($r = .18$, $p = .02$) and in the United States ($r = .22$, $p = .011$). In both countries, higher relational mobility was associated with a greater tendency for individuals to make dispositional attributions for behavior (Japan: $r = .26$, $p = .0008$, U.S.: $r = .15$, $p = .079$), although the effect failed to reach statistical significance in the United States. Relational mobility was unrelated to the tendency for situational attributions in either country.

Discussion

Overall, the findings of Study 1 supported predictions. First, the results of study 1 confirmed the results of prior studies (e.g., Nisbett, 2003; Choi et al., 1999; Morris & Peng, 1994) showing differences in North Americans and East Asian participants in their causal attribution tendencies: American participants were more likely to make dispositional (vs. situational) attributions for behavior than were Japanese participants. Interestingly, this cultural difference was more pronounced for dispositional attribution rather than situational attribution, as no significant cultural differences were observed for the latter.

Most significantly, this study went beyond previous research by showing evidence for a link between attribution styles and relational mobility. Overall, higher levels of relational mobility were associated with a higher tendency for individuals to make dispositional attributions for behavior, even when statistically removing the effect of country. That is, both American and Japanese participants who perceived their environment to have higher relational mobility were more likely to make dispositional vs. situational attributions for the behavior of others. The effect provides some evidence for the utility of the socio-ecological approach, suggesting that cultural differences in attributional styles are related to participants' perceptions of the mobility of relationships in their socio-ecological environment.

Study 2: Experimental study of relational mobility and causal attribution

Study 2 was intended to further demonstrate the link between relational mobility and attribution styles, by examining the hypothesis that dispositional (vs. situational) attribution tendencies are likely to be elicited in social ecologies high in relational mobility. Rather than

employing a cross-cultural natural experiment comparing participants in a low mobility culture (Japan) to a high mobility culture (United States), this study sought to examine whether systematically altering participants' perceptions of the level of relational mobility in one's social environment could alter their attribution style. On the premise of previous research in heuristics and default strategies (Yamagishi et al. 2008, 2011; Todd & Gigerenzer, 2007), this study aimed to show how attribution tendencies are actually an adaptive factor of relational mobility; which humans are naturally sensitive to discerning, and so adapt quickly to optimally navigate different settings.

To test this, we used a method known as priming; asking participants to imagine themselves in a future situation that was either very high or very low in relational mobility. We expected that American participants who had been primed to think about a situation high in relational mobility (HRM) would make more dispositional vs. situational attributions compared to participants who had been primed to imagine themselves in a low relational mobility setting (LRM). In other words, by priming American participants with a social setting that more closely resembles the modal social setting in Japan, we would be able to make American participants would show similar attributional styles as observed in Japan in Study 1.

Method

Participants. A total of 71 student participants from the College of William & Mary (33 men and 40 women; average age 18.62, $sd=.83$) were rewarded with course credit for participating in this study. All participants were born and raised in the United States.

Materials and Procedure. First, participants took part in a task intended to prime participants with mindsets adaptive to social ecologies high and low in relational mobility. To do

so, we asked participants to spend approximately ten minutes writing about a previous experience. In the high mobility condition, participants ($n=36$) wrote about a time they were in a group that would have been easy for them to leave if they choose to leave. In the low mobility condition ($n=37$), participants wrote about a time they were in a group that would have been very difficult for them to leave if they choose to. The same Social Judgement Task (Kitayama et al., 2006) from Study 1 was used as the primary evaluative measure of causal attribution.

Results

We conducted a 2 (Mobility Priming: High vs. low) X 2 (Attributional style: Dispositional vs. Situational) ANOVA, with Mobility Priming as a between-subjects factors and Attribution Style as a within-subjects factor. The results showed significant main effects of attribution style $F(1, 71)=35.50, p<.001, \eta^2=.99$, and no main effect of condition.

Most important to the hypothesis, the main effect of attribution style was qualified by a significant interaction effect between attribution style and the relational mobility manipulation $F(1, 71)=6.07, p<.016$, indicating that there was a larger difference between dispositional ($M=5.98, SD=.65$) and situational ($M=4.66, SD=.84$) in the high relational mobility (HRM) condition relative to the low mobility conditions ($M=5.81, SD=1.10$ and $M=5.15, SD=.81$ for dispositional and situational attribution, respectively) and increased situational attribution in the low relational mobility (LRM).

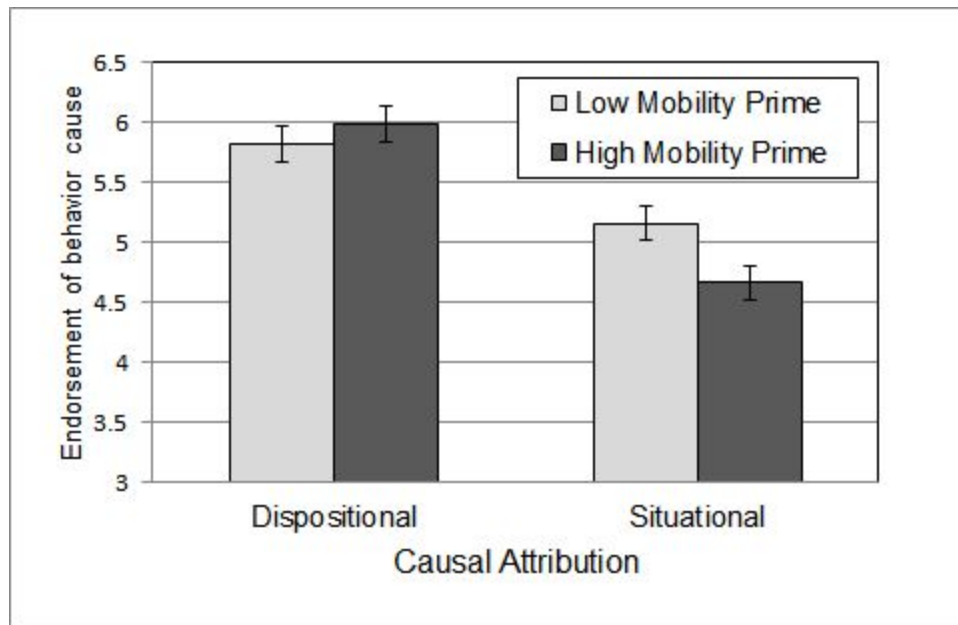


Figure 2. Endorsements of situational and dispositional attribution styles as a function of the relational mobility priming manipulation. Error bars represent standard errors of the mean.

The interaction effect is illustrated in Figure 2. Post-hoc tests adjusted for multiple comparisons found that dispositional attribution was significantly higher than situational attribution in both the high mobility $t(71)=6.83, p<.001$ and low mobility $t(71)=3.43, p=.001$, that situational attribution decreased in the high mobility condition relative to the low mobility condition $t(71)=2.57, p=.012$. Dispositional attribution did not significantly differ between the two conditions $t(71)=.81, p=.42$.

Discussion

The results from this study confirm the hypothesis in that American participants (more continually primed with their high relational mobility setting) increased their amount of situational attribution in the Social Judgement Task, to a level that was comparable to the Japanese participants from Study 1. Overall, the participants from Study 1 favored dispositional

attribution, which actually reflects the “stickiness” of culture underlying decisions. Even though they were primed in this instance to rely on a low relational mobility mindset and thusly lean more on situational attribution, participants still have an orientation to their home culture and norms of cognition. This reinforces the macro-concept discussed earlier about heuristics; our ecologically adapted strategies are specifically tailored to the social environment we have most effectively learned to navigate. However, the strength of this study is it does indeed demonstrate that our strategies can adjust depending on how loose or tight our current evaluation is. In this study, participants were not placed in a social context that forced high or low relational mobility. Rather, through priming, they were brought to a place cognitively that replicates the process of perceiving relational mobility. Participants from the low relational mobility condition exceeded the high relational mobility condition in their level of situational attribution - marking a relationship between the condition of relational mobility and type of causal attribution.

General Discussion

Study 1 confirmed previous research, showing that Japanese vs. U.S. participants demonstrate more situational vs. dispositional attribution, respectively (Nisbett, 2003; Choi et al., 1999; Morris & Peng, 1994). Study 2 also showed that that relational mobility would be perceived as higher in U.S. (Western) vs. Japanese respondents, and that higher perceptions of relational mobility. Study 2 provided further evidence for the theory that higher relational mobility (qualified as loose cultures in previous research) leads to greater dispositional attribution, and lower relational mobility (qualified as tight cultures) leads to more situational attribution (Nisbett & Miyamoto, 2005; Masuda & Nisbett, 2001).

Causal attribution acts as a powerful proxy for culture because it shows the collective subconscious norms of perception underlying a society. Essentially, who I am characterizes who I think you are (via causal attribution), based on what factors I feel determine my daily social interactions. As previously discussed, Eastern, or “collectivist,” cultures tend to utilize situational attribution more than Western, or “individualistic,” cultures that point to disposition (Nisbett, 2003; Choi et al., 1999; Morris & Peng, 1994). However strong these attributions may be, all behaviors are inherently a product of personality and environment (Lewin, 1936). The amount that people link their fate to each of these factors, though, is the differentiator of culture.

The second measurable factor of culture examined in this research is relational mobility. The strength of studying relational mobility as a moderator is it provides a versatile evaluation of cultural change at both a macro and micro level. Study 1 replicated the findings of previous research on causal attribution (Ross, 1977; Nisbett, 2003; Choi et al., 1999; Morris & Peng, 1994), demonstrating a tendency toward dispositional attribution among Americans and a tendency toward situational attribution among Japanese participants. These findings reinforce the value of relational mobility as a theoretical gauge of cultural distinction and change at a larger scale. Japanese and American societies as a whole are comparable in population crowdedness, with similar variation between urban and rural settings; and yet there is a difference in perceived relational mobility across the two larger cultures as Japanese people tend to see their social circle as more set than Americans do. This perception, correlated with the cultures’ respective causal attribution styles, lays the base for understanding why relational mobility serves as a necessary confounder in studying cultural variation at a macro level.

Study 2 adds a new element to the existing understanding of relational mobility by

breaking it down to the individual. The results of this study, conducted solely on American participants, suggest that perceptions of relational mobility can be manipulated, and this manipulation leads to changes in causal attribution. Perception can even be altered to the degree that we see responses native to the participant shift to those similar to another culture. While the U.S. participants in the low relational mobility condition did not respond with the exact same level of situational attribution that (unconditioned) Japanese participants in Study 1 did, there was still a significant change between the two groups (HRM & LRM). This confirmed change in attribution (making Americans think like Japanese) provides evidence that relational mobility might influence attribution style, which is interesting in understanding cultural variation as well as highlighting the adaptability of cognition to different socio-ecological settings. In essence, the strength of Study 2 is it illustrates the effect of relational mobility at the microlevel of culture.

Limitations of this research predominantly lie in the participant pool. We had a relatively small sample, which could be elaborated on in future research. Additionally, there was uneven gender distribution among the samples in Study 1. The Japanese pool was largely male participants, and the U.S. pool was more female. Gender could even be a variable examined in the context of relational mobility in future studies, as socialization styles typically vary between male and female groups. Another possible limitation is that we only used one measure of causal attribution. Lastly, an experiment that replicates the findings of Study 2 in Japan by testing the effectiveness of the relational mobility prime would help to determine whether participants from low mobility settings can be primed with a high mobility situation. Indeed, most humans have experienced low-mobility relationships (such as relationships with one's family members), but not all individuals have necessarily have experience with high mobility environments.

The argument of this paper challenges the rigidity of the current definition of culture in psychology and asserts a natural adaptation within different social landscapes; however that is not to say that culture is completely fluid. Not all socio-cultural differences can be erased by changing the immediate environment, as exemplified by the LRM participants in Study 2 who still showed more dispositional attribution than the unconditioned Japanese participants in Study 1. Language, for example, is a cultural product that locks in certain values -- exemplified in common phrases and idioms, as previously discussed. So, even though relational mobility can affect a fairly immediate response, culture as a whole has slightly deeper roots. Once again, shifting mental tools takes energy, and so a longer history with one social mindset will slightly overshadow a sudden anomalous situation that calls for a different tool.

Returning to the central theory of this paper, shifts in causal attribution as a consequence of perceived relational mobility points to the natural human ability to adapt to new social settings and, as study 2 demonstrates, adapt rather quickly. Henrich and Gil-White (2001) asserted that successful members of a society are more likely to be copied. This begs the next question, what does it take to be successful in a certain culture? The current binary suggests success in the West comes from self-seeking actions, and in the East from other-regarding actions. We assert that more specifically than “East” and “West”, the high and low relational mobility localized to these respective cultures are what shape these social adaptive strategies.

Categorizing cultures as either individualist or collectivist, in line with the current literature, is an accessible idea (especially to Western theorists) but is ultimately a gross oversimplification. The novelty of this research is it challenges the existing notion that social behavior is set in culture. Rather, we propose that culture itself is something that shifts actively

with the individual as they adapt to different social settings. The strength of the institutional approach (Yamagishi et al., 2008) is it utilizes socio-ecological factors, in this case relational mobility, and marks external forces as the builders of culture; making this approach innovatively outside of the Western tradition.

Conclusion

Much of what comes to mind with “culture” is an artistic heritage that has been passed on among generations. This paper, however, proposes a model of culture that is more socially and evolutionarily rooted. Culture is the final synergistic product of social interactions at the individual level formulated by strategies adapted to maximizing social capital. Depending on the level of relational mobility native to a society, strategies emerge with the universal goal of self-preservation. We find a sensitivity to the external -- others and situational factors -- in low relational mobility groups, and a focus on the internal in high relational mobility groups. No one strategy is greater than the other, they are simply adaptations that point to the same thing: social survival. Ultimately, these motivators are completely rational given the social context one finds himself in. Incorporating external factors such as relational mobility when interpreting cognitive differences across culture is key to diversifying the field of psychology; opening a more comprehensive toolbox that rightfully includes the unrepresented non-Western world.

References

- Al-Zahrani, S.S.A., & Kaplowitz, S. (1993). Attributional Biases in Individualistic and Collectivistic Cultures: A Comparison of Americans with Saudis. *Social Psychology Quarterly*, 56(3), 223-233.
- Arnett, J. J. (2008). The neglected 95%: why American psychology needs to become less American. *American Psychologist*, 63(7), 602.
- Aoki, M. (2001). *Toward a comparative institutional analysis*. MIT press.
- Brown, J. D. (1986). Evaluations of self and others: Self-enhancement biases in social judgments. *Social Cognition*, 4(4), 353-376.
- Brown, J. D. (1998). *The self*. New York: McGraw-Hill.
- Brown, J. D. (2003). The self-enhancement motive in collectivistic cultures: The rumors of my death have been greatly exaggerated. *Journal of Cross-Cultural Psychology*, 34(5), 603-605.
- Carpenter, S. (2000). Effects of cultural tightness and collectivism on self-concept and causal attributions. *Cross-Cultural Research*, 34(1), 38-56.
- Choi, I., Nisbett, R. E., & Norenzayan, A. (1999). Causal attribution across cultures: Variation and universality. *Psychological Bulletin*, 125(1), 47.
- Cohen, D. (2001). Cultural variation: considerations and implications. *Psychological bulletin*, 127(4), 451.
- Cosmides, L., & Tooby, J. (1992). Cognitive adaptations for social exchange. *The adapted mind*, 163-228.

- Fiske, A. P., Kitayama, S., Markus, H.R., & Nisbett, R. E. (1998). The cultural matrix of social psychology. *Handbook of Social Psychology*, 915–981.
- Gelfand, M. J., Raver, J. L., Nishii, L., Leslie, L. M., Lun, J., Lim, B. C.... Yamaguchi, S. (2011). Differences between tight and loose cultures: A 33-nation study. *Science*, 332, 1100–1104.
- Gigerenzer, G., Todd, P. M., & ABC Research Group. (1999). *Simple heuristics that make us smart*. Oxford University Press.
- Henrich, J., Heine, S. J., & Norenzayan, A. (2010). Most people are not WEIRD. *Nature*, 466(7302), 29-29.
- Ishii, K. (2007). Do differences in general trust explain cultural differences in dispositionism? *Japanese Psychological Research*, 49(4), 282-287.
- Jones, E. E., & Harris, V. A. (1967). The attribution of attitudes. *Journal of experimental social psychology*, 3(1), 1-24.
- Kim, H., & Markus, H. R. (1999). Deviance or uniqueness, harmony or conformity? A cultural analysis. *Journal of personality and social psychology*, 77(4), 785.
- Kitayama, S., Ishii, K., Imada, T., Takemura, K., & Ramaswamy, J. (2006). Voluntary settlement and the spirit of independence: Evidence from Japan's "northern frontier." *Journal of Personality and Social Psychology*, 91(3), 369.
- Krull, D. S. (2001). On Partitioning the Fundamental Attribution Error: Dispositionalism and the Correspondence Bias. *Cognitive Social Psychology: the Princeton Symposium on the Legacy and Future of Social Cognition*, 211.

- Kuwabara, K., Vogt, S., Watabe, M., & Komiya, A. (2014). Trust, Cohesion, and Cooperation After Early Versus Late Trust Violations in Two-Person Exchange The Role of Generalized Trust in the United States and Japan. *Social Psychology Quarterly*.
- Leung, K., Au, A., Huang, X., Kurman, J., Niit, T., & Niit, K. K. (2007). Social axioms and values: a cross-cultural examination. *European Journal of Personality*, 21(2), 91-111.
- Lewin, K (1936). *Principles of Topological Psychology*.
- Masuda, T., & Nisbett, R. E. (2001). Attending holistically versus analytically: Comparing the context sensitivity of Japanese and Americans. *Journal of Personality and Social Psychology*, 81(5), 922-934.
- Miller, J. G. (1984). Culture and the development of everyday social explanation. *Journal of Personality and Social Psychology*, 46(5), 961.
- Morris, M. W., & Peng, K. (1994). Culture and cause: American and Chinese attributions for social and physical events. *Journal of Personality and Social psychology*, 67(6), 949.
- Nisbett, R. E., & Miyamoto, Y. (2005). The influence of culture: holistic versus analytic perception. *Trends in cognitive sciences*, 9(10), 467-473.
- Nisbett, R. E. (2003). *The Geography of Thought: How Asians and Westerners Think Differently... And Why*.
- Nisbett, R.E., Peng, K, Choi, I., & Norenzayan, A. (2001). Culture and systems of thought: Holistic versus analytic cognition. *Psychological Review*, 108 (291–310).
- Nisbett, R.E., Masuda, T. (1999). Culture and point of view. *Proc Natl Acad Sci USA*.
- Norenzayan, A. (2006). Evolution and transmitted culture. *Psychological Inquiry*, 17(2), 123-128.

- Oishi, S., Schug, J., Yuki, M., & Axt, J. (2015). "The Psychology of Residential and Relational Mobilities." *Handbook of Advances in Culture and Psychology, vol. 5*.
- Oishi, S., Lun, J., & Sherman, G. D. (2007). Residential mobility, self-concept, and positive affect in social interactions. *Journal of Personality and Social Psychology, 93*, 131–141.
- Richerson, P. J., & Boyd, R. (2005). *Not by genes alone: How culture transformed human evolution*.
- Ross, L. (1977). The intuitive psychologist and his shortcomings: Distortions in the attribution process. *Advances in experimental social psychology, 10*, 173-220.
- Sato, K., Yuki, M., & Norasakkunkit, V. (2014). A socio-ecological approach to cross-cultural differences in the sensitivity to social rejection: the partially mediating role of relational mobility. *Journal of Cross-Cultural Psychology, 45*(10), 1549-1560.
- Schug, J., Yoo, S. H., & Atreya, G. (2017). Norms regulating emotional expressions relate to national level generalized trust. *Evolutionary Behavioral Sciences, 11*(1), 23-35.
- Schug, J., Yuki, M., & Maddux, W. (2010). Relational mobility explains between-and within-culture differences in self-disclosure to close friends. *Psychological Science*.
- Shweder, R.A. (1991). *Thinking Through Cultures: Expeditions in Cultural Psychology*.
- Sperber, D. (1996). *Explaining culture: A naturalistic approach*.
- Tetlock, P. (1985). Accountability: A Social Check on the Fundamental Attribution Error. *Social Psychology Quarterly, 48*(3), 227-236.
- Todd, P. M., & Gigerenzer, G. (2007). Environments that make us smart: Ecological rationality. *Current Directions in Psychological Science, 16*(3), 167–171.

- Tomasello, M., Kruger, A. C., & Ratner, H. H. (1993). Cultural learning. *Behavioral and Brain Sciences, 16*, 495-552.
- Tooby, J., & Cosmides, L. (1992). The psychological foundations of culture. In J.H. Barkow, L. Cosmides, & J. Tooby (Eds.), *The adapted mind: Evolutionary psychology and the generation of culture* (pp. 19-136). New York: Oxford University Press.
- Uskul, A. K., Kitayama, S., & Nisbett, R. E. (2008). Ecocultural basis of cognition: Farmers and fishermen are more holistic than herders. *Proceedings of the National Academy of Science of the USA, 105*, 8552-8556.
- Yamagishi, T., Hashimoto, H., Li, Y., & Schug, J. (2011). Stadtluft Macht Frei (City Air Brings Freedom). *Journal of Cross-Cultural Psychology, 43*(1), 38-45.
- Yamagishi, T., Hashimoto, H., & Schug, J. (2008). Preferences versus strategies as explanations for culture-specific behavior. *Psychological Science, 19*(6), 579-584.
- Yamagishi, T., & Yamagishi, M. (1994). Trust and commitment in the United States and Japan. *Motivation and Emotion 18*(2), 129-166.
- Yuki, M., Schug, J., Horikawa, H., Takemura, K., Sato, K., Yokota, K., & Kamaya, K. (2007). Development of a scale to measure perceptions of relational mobility in society. *Work. pap.*

Yuki, M., & Schug, J. (2012). Relational mobility: A socio-ecological approach to personal relationships. *Relationship science: Integrating evolutionary, neuroscience, and sociocultural approaches*, 137–152.