

Culture on Self-Construal: Personhood and Identity

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ABSTRACT

Cross-cultural research suggests that our concept of personal identity is partly constituted by one's culture in a cycle of mutual constitution (Markus and Kitayama 2010). While this concept has been widely referenced in cultural psychology, contemporary work on personal identity continuity has largely ignored this cultural component. I hypothesize that cultural differences between East Asian and Western cultures promote different intuitions about identity continuity in the context of thought experiments on personhood and identity. In this paper, I test a series of scenarios which explore whether culture affects self in personhood, name, and identity ratings. Results of the study ($n = 15$) showed 13% of the frames showed a significant cultural effect, and contrary to the hypothesis and supportive research, East Asians and Western cultures do not appear to exhibit significantly consistent differences in attribution of personhood and self. This result undermines some widely held philosophical assumptions about the influence of culture on self-construal, suggesting that judgments of personal identity and personhood may be resistant to cultural bias.

KEYWORDS

Identity, Cross-cultural, Personhood, Self, Thought Experiments

INTRODUCTION

For centuries, philosophers have debated personal identity, addressing the question of what makes one's identity, and what is required for it to persist over time. Historically, notions of the essential self (self-as-soul) dominated Western philosophy (Martin and Barresi 2006), however this later switched focus to the psychological view (John Locke 1975), arguing that memory ensures the continuity of a person. Subsequent research by Nichols and Bruno (2010) extrapolated that according to folk judgment, psychological continuity (memories) is necessary for preservation of personal identity. In a response to Nichols and Bruno, Berniunas and Dranseika (2016) presented two challenges to their study. They found that folks do not use a unitary concept of personal identity, but rather division into thinner notions of "person" and "identity of individual" (Blok, Newman, Behr, and Rips 2001), and that psychological continuity is important, but not necessary for personal identity judgments. In investigating what changes have the potential to alter someone's identity and sense of personhood, as illustrated, the focus has been on mainly internal attributes. Oddly enough, these very studies have alluded to another attribute of notable significance, though, that being, cross-cultural significance. Amongst these studies, researchers have consistently noted the emergence/consideration of cross-cultural self-construal. Nichols and Bruno (2010) noted in their paper that "these experiments only focused entirely on Western graduates" and "it is quite possible that people in different culture or socioeconomic groups will respond differently". Berniunas and Dranseika (2016) also noted in a free-listing experiment the emergence of a "social" and "moral" dimension, recognizing research (Markus and Kitayama 1991) that cross-culturally individuals conceptualize the self differently, and that one's moral judgments can actually influence one's intuitions in folk psychology and causal cognition (2016)¹. This brings up an interesting discussion—research and researchers have suggested the complexity of self, and the important consideration of cultural factors, but yet so far it has been widely ignored in the personal identity debate. This appears to

1. While Berniunas and Dranseika (2016) attempted to explore moral and social dimensions to personal identity through thought experiments (arguably dimensions highly relevant/embedded in culture), their results emerged inconsistent across studies (no significant effects in study 1, sometimes only trends in predicted directions). Furthermore, they only explored this dimension across a single culture, not across two cultures. This leaves opportunity for a cross-cultural design to achieve further insight/leverage into this debate on personal identity.

expose caveats to prior research, and opportunities for future research to explore the implications of culture on self-construal.

Cross-cultural research argues the importance of considering culture in cognition in that it is impossible to understand psychological processes without the consideration for specific cultural background in which these psychological processes are embedded (Shweder 1993). In a cycle of ongoing mutual constitution, cultures and selves are seen to define and build upon each other (Markus and Kitayama 1998), and through this, develop through symbolically mediated, collaborative interaction with others and the social environment. According to Markus and Kitayama (1998), each of these divergent construals have a set of specific consequences for cognition, emotion, and motivation.

Following these concepts of cross-cultural constructions of self, some pioneering research has delved deeper into these exact cultural influences. Research that has been done on personal identity (Kung et al. 2016) suggests that in cultures with high social rigidity, lay beliefs that the world is fixed (vs. malleable) predict identity continuity. This research contributed to the literature on identity continuity by highlighting that people of different cultures may have different intuitions about what features of self are essential for maintaining identity continuity.

Notable cross-cultural distinctions have also been found in independent vs. interdependent concepts of self, in that in interdependent (East Asian) cultures, responding to one's environment requires awareness of the relatively larger role of others in influencing who you are and what you should be doing (Norenzayan, Choi, and Nisbett 2001). While this situational information greatly influenced East Asian individuals, this information had no effect for Americans from Western cultures (Norenzayan, Choi, and Nisbett 2001). Some further ways in which East Asian and Western cultures assess self differently are seen on scales of individualism and collectivism, senses of agency, tightness and looseness of society and norms, and malleability of self vs. world (Heine 2008). As demonstrated through East Asian and Western cultures' highly divergent models of self, they are popular subjects for cross-cultural research.

While there have been studies on comparisons on East Asians and Western cultures on identity continuity (Kung and Eibach 2016), none have yet been done through thought experiments. The thought experiment is one important tool that philosophers have frequently used to investigate personal identity, which is

believed to help to reveal “the criteria of personal identity that we actually use” (Parfit 1971). Influential thinkers have considered thought experiments like this to debate which features of the self are critical for determining self are critical for determining personal identity continuity (Parfit 1971). While prior cross-cultural research provides promising evidence of culture’s influence on constructions of self, how culture would affect self in thought experiments remains unknown. This study aims to explore whether these cultural worldviews manifest in thought experiments, and whether the processes involved in evaluating personal identity are alterable by culture. The present study addresses these questions by taking a novel thought experiment approach to cross-cultural selves, and also by utilizing novel methods into identity gleaned by Berniunas and Dranseika (dissociation between personhood and identity). Broadly speaking, such an investigation could ultimately support at least two different conclusions. On the one hand, it could turn out that culture affects personal identity in thought experiments under no circumstances. On the other hand, it can demonstrate culture can play a role in all, some, or under certain conditions in thought experiments. This research is significant in that cultural reflection on judgments in philosophical thought experiments could progress or reinvent research on identity in cognitive science. As detailed in the research overview, this study predicts that cultural differences between East Asian and Western cultures promote different intuitions about identity continuity in regards to thought experiments on ratings of name, personhood, identity.

RESEARCH OVERVIEW

In this study, I aim to replicate and expand/adapt on thought studies done by Berniunas and Dranseika (Nichols and Bruno 2005; Block, Newman, and Rips 2005; Grey, Knickman, Wegner 2011; Berniunas and Dranseika 2016), and Weaver and Turri (Parfit 1984; Weaver and Turri, In Press). To test whether cultures differ in their personal identity intuitions, and see how these results inform about the debate on self-construal, this study compares individuals with representative East Asian or Western background.

In my design, I took 4 different approaches to personal identity. The cases are as follows: Frame #1 Brain Transplant, Frame #2 Half Brain Procedure, Frame #3 Persistent Vegetative State, #4 Persisting as Many. In each case, I adapted the model vignette with the addition of a cultural condition (two conditions: neutral

and cultural). While in Weaver and Turri's initial experiment, participants were asked to choose options to best describe that happens in the story (Derek is in the West Recovery room, etc.), I maintained the same evaluation criteria from Berniunas and Dranseika (2016) for constancy. Across all these studies, I looked at the cultural effect on personhood, identity, and name. In this asking, do East Asian and Western cultures approach intuitions about personhood, identity, and name differently?

Across all vignettes, a neutral condition was included as to serve as a control, and also as means to verify the results of the original study by extending it to a cross-cultural frame. Conditions were broken into cultural conditions in order to get at "latent" intuitions on personhood and self between cultures. As with more discreet concepts, like culture, many notable distinctions are not illuminated without the appropriate scenario, environment, or frame of mind. For instance, one may not realize there is no concept equivalent of "chi" in Western cultures unless in a tai-chi class. This has been supported by Williams (1970) who argues that our intuitions about personal identity vary depending on how a given thought experiment is framed. In this, I propose that in order to get the "true" scope of culture on self-identity intuitions, these latent cultural intuitions must be triggered by particular framing scenarios. Due to the "standardized" nature of the neutral condition, culturally-relevant differences in concepts, values, and perspectives may go ignored. I created the cultural condition (merge of social/moral aspects) to bring to the forefront some culturally-divergent topics/perspectives. These focused on relation of self to others; independent vs. interdependent relationships, malleability of self vs. world, cultural core values, analytic vs. holistic reasoning style (in contradictions), and overall treatment of personal continuity.

Before each condition, I present background research on the topic, my specific hypotheses, the neutral and cultural frame, and the research questions the scenario aims to address. While the background research is varied to each frame, as culture consists of many overlapping aspects, points and research from all frames were considered in testing and design. Results and discussion for all questions will be discussed altogether at the end.

For all conditions and frames, I start with a few general hypotheses: I predict that neutral conditions will not elicit any statistically significant differences between East Asian and Western cultures (across all 3 statements). In contrast, a portion of cultural conditions will. In the circumstance that a neutral condition does produce

a significant result, I anticipate that for whatever effect is statistically significant in the neutral condition, that effect will be greater in the cultural condition. I also predict that overall the standard deviation will be larger for Western conditions, in that answers will tend to fall on either extreme end of the scale (0, or 10) due to preference for rule-based reasoning (Heine 2008). In contrast, I predict that East Asians will have less disparity in their answers of personhood and identity, due to a “thicker” notion of self (Heine 2008). This would suggest a more unitary concept of self.

While I am interested in how culture affects ratings of personal identity between name, identity continuity, and personhood, in analysis, I primarily investigate whether, cross-culturally, there is a similar pattern for ratings across all 3 statements, and am primarily concerned with whether any of these statements (compared on their own) result from significant effects between cultures.

METHODS

Participants

Participants were undergraduate students at Northwestern University. 26 participants were run, but 11 were excluded from analysis on the basis of representativeness (leaving N = 15, 60% female, mean age = 21). The study was administered as an online survey via Qualtrics.

Materials and Procedure

Each vignette was split into neutral and cultural conditions. Using a within-subjects design, participants were exposed to every neutral and cultural condition (4 vignettes x 2 conditions = 8 scenarios total). Following Berniunas and Dranseika’s study (2016), participants rated their agreement with whether the subject in each vignette “is still -insert name-” “is still the same person”, “and is still a person” on a scale of 0 (strongly disagree) to 10 (strongly agree). Comprehension of scenarios was checked for each and varied to reflect changes in cultural/neutral conditions (2 failed and were excluded from analysis). Scenario subject names were also balanced for cultural familiarity, subject gender was varied, and wording of the likert scales were matched to bodily state and time reference. Questions were asked in the same order and the order of response options were all counterbalanced. I compared participants using both English-language materials for both samples,

eliminating language confounds (Grossman & Na 2014). The story remained at the top of the screen throughout, and participants could not return to a previous screen to change their answers.

Following the survey, participants filled out a brief demographic survey providing the context for group assignment. Participants were put into either East Asian or Western cultural conditions on the basis of race, ethnicity, language, generation, personal identity ratings, time abroad, and familiarity with Eastern/Western ideals (East Asian condition $N = 6$, Western condition $N = 9$) (*see appendix for exact questions/grouping criteria). These same basic procedures were used for all subsequent questions reported here.

FRAME TYPE #1: BRAIN TRANSPLANT CASE

Research by Markus and Kitayama (2010) suggests divergent models in which East Asian and Western cultures reference sense of self. East Asian schemas, otherwise known as interdependent schemas, organize behavior in reference to the thoughts, feelings, and actions of the related person. This interaction with others creates a sense of self connected, or interdependent with others, in other words, viewing social relationships as core to self (Markus and Kitayama 2010). In contrast, Western schema of self organizes behavior in respect to the individual's own thoughts, feelings, and actions. This individualistic approach produces a sense of self existing separately from social environment and all other selves, hence, assuming a weaker role of relationships in self-identity (Markus and Kitayama 2010).

A particularly interesting finding of this research is the idea that in interdependent schemas of self, people attribute a sense of themselves as part of their social relationships (Markus and Kitayama 2010). This is consistent with a sense of one's self being related to others, and has been supported by research that for East Asians, the same region of the brain is activated by both significant other's (ex. mother) and for the self (Zhu et al. 2007). This was also seen in that East Asian individuals weigh the words of their mother as much as if they had decided it themselves (Zhu et al. 2007). This is illustrated in Figure 1, where in interdependent cultures, people view "in-group" individuals (mother, father, friend) as an extension of oneself. In contrast, independent cultures view self as isolated from external relations.

In my first frame, I wanted to explore these diverging models of self, particularly in regards to interpersonal relationships, and the tendency for interdependent cultures to see others as a part of what makes “them”. To explore this, I first adapted a vignette from Blok, Newman, and Rips (2005) in which an individual must undergo a brain transplant to a stock body to survive. I used the original frame for my neutral condition (making slight alterations for conditional constancy). I then further adapted the vignette for the cultural condition, altering the stock body used for the transplant to be the individual’s father instead. This addressed the question of whether the vessel of the brain transplant (in this case, the father) has different implications cross-culturally on self. Utilizing the interdependent schema (Figure 1), I predicted that due to the overlapping of self and others, East Asian individuals would approach their father’s body in a different manner (responding with higher or lower identity ratings than in the neutral condition), whereas Western individuals would respond with constancy between conditions in their attributions of identity. Once again, as research suggests Western cultures view self-identity separately from relationships and one’s social environment, the transplant into the father’s body should not interfere with one’s own concept of self. Additionally, as these referential schemas focus on one’s “sense” of self, I do not predict that this manipulation will alter one’s ratings for personhood in either culture.

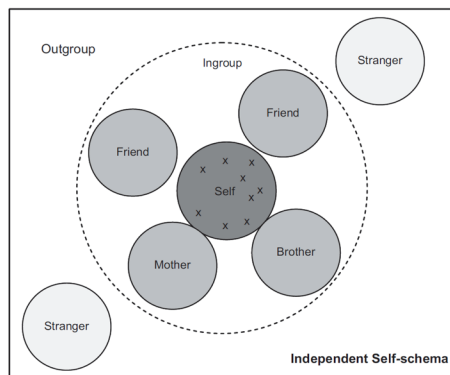


Figure 1a. Independent and interdependent self-schemas. Figure adapted from Markus and Kitayama (1991) and Heine (2008).

In this frame, the neutral condition is as follows:

David is severely injured in a tragic car accident. His only chance for survival is participation in a "Type 2 transplant" procedure. In a "Type 2 transplant" procedure, David's brain is removed and carefully placed into a stock body. David agrees to the operation. David's original body is destroyed in the operation. After the operation, all the right neural connections between the brain and body have been made. The doctors test all physiological responses and determine that the transplant recipient is alive and functioning. David's brain is successfully transplanted and all his memories from before the operation are intact.

Following the passage, participants rated their agreement with the following statements on a scale of 0 (strongly disagree) to 10 (strongly agree):

1. After the event, the Type 2 transplant recipient is still David
2. After the event, the Type 2 transplant recipient is still the same person as before the event
3. After the event, the Type 2 transplant recipient is still a person
4. After the event, the Type 2 transplant recipient has the same memories as before the procedure [comprehension check]

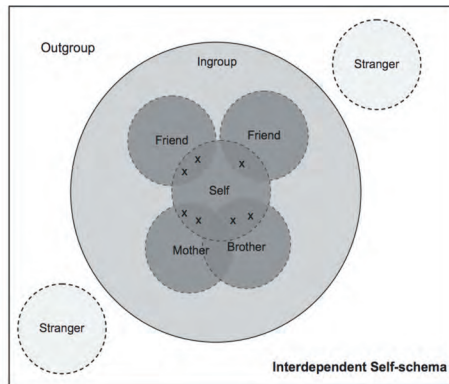


Figure 1b. Independent and interdependent self-schemas. Figure adapted from Markus and Kitayama (1991) and Heine (2008).

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For the cultural condition, in which stock body switched to be the individual's father's body, the scenario is as follows:

David is severely injured in a tragic car accident. His only chance for survival is participation in a "Type 2 transplant" procedure. In a "Type 2 transplant" procedure, David's brain is removed and carefully placed into another body. However, there is no body to transfer David's body into. David's father's body was donated to science when he passed away. David's father's body is used as a stock body. David's brain is successfully transplanted into the body and all his memories from before the operation are intact. David's original body is destroyed in the operation. After the operation, all the right neural connections between the brain and body have been made. The doctors test all physiological responses and determine that the transplant recipient is alive and functioning.

Once again, on a scale of 0 (strongly disagree) to 10 (strongly agree) participants rated their agreement with the following statements:

1. After the event, the Type 2 transplant recipient is still David
2. After the event, the Type 2 transplant recipient is still the same person as before the event
3. After the event, the Type 2 transplant recipient is still a person
4. After the event, the Type 2 transplant recipient has the same physical appearance he did before [comprehension check]

FRAME TYPE #2: HALF BRAIN CASE; FRAME TYPE #3: PERSISTENT VEGETATIVE STATE

Cross-cultural studies suggest that East Asian and Western cultures have conflicting stances on the malleability of self vs. world—Westerners approaching malleability of world relative to self, whereas East Asians view malleability of self relative to world. This is demonstrated in research by Chiu (1997), which showed how Chinese and Americans possess divergent constructs of society. If presented with the problem of building a stone wall, there are two considerations, the shape of the stones and the design for the structure. Chiu describes one method, which

refers to the shape of each stone altered to accommodate for the design of the wall, and the second method, where the shape of the stone is preserved, and the blueprint is altered to accommodate for the stones. Chiu's research suggests that the context-specific model conforms more closely to Chinese and East Asian societies, in that East Asians hold a stronger belief in the fixedness of the social world (roles, positions, relationships) and the fluidity of personal qualities (Chiu 1997). This references the importance in Confucian values to "fit in" to one's social environment, as it is fixed. Westerners, on the other hand, viewed our core selves as unchanging and constant (Markus and Kitayama 2001), and perceived that individuals shape the world and their situations. Other research supports these findings as well, for instance, Kung (2016) found that cultures with fixed-world beliefs perceive more identity discontinuity than Americans when one's relationships are altered (Kung et al. 2016). In the context of East Asian cultures, as with many other points, this can also be understood as an adherence to Confucian norms, which prioritizes group/intrapersonal harmony of "Li" (Markus and Kitayama 2010). Research by (Lee, Hallahan, and Herzog 1996) also revealed that Western cultures assume people have fixed internal attributes, and one's identity affirms these inner attributes. For instance, Americans tend to judge changes in moral and personality traits (psychopathy, shyness) as most indicative of psychological discontinuity (Strohming and Nichols 2014). This exaggeration of dispositional information leads to a drive for consistency, where consistent behavior is considered important to psychological well-being, and too many changes in behavior leads to a "loss of self" (Lee, Hallahan, and Herzog 1996).

In my experimental design, I took two separate approaches to these concepts—one catering towards East Asian fixedness and importance of the external world (relationships), and Westerners de-emphasis on the social world/situation—the other catering towards Westerners emphasis on the fixedness of self, and East Asians de-emphasis/fluidity on a consistent self. In design, this emerged as one scenario where there was change in one's external relations, and in the other, one where there is a change in one's internal traits.

To test this, I adopted a vignette from Weaver & Turri (in press) on Half Brain procedures, and a vignette from Grey, Knickman, Wegner (2011) on Persistent Vegetative states for my neutral condition. For my cultural condition, I further adapted the scenarios, in the Half Brain frame, creating it so that following the procedure, the individual (Sara), experiences consequences that result in her

removal from society and close social ties. In the PVS condition, I adapted it so that upon re-consciousness, the individual (Anh) undergoes severe moral and internal character changes.

As an overview, I predict that East Asian cultures will attribute changes in one's external relationships to be more identity altering, whereas Western cultures will attribute internal psychological changes to be more identity altering. I hypothesize that in frame type #2 (half brain-cultural), East Asians will be especially susceptible to identity discontinuity following changes in one's external relationships/situation due to a social world fixedness and an emphasis on Confucian values of relationships, harmony, "fitting in", and roles. This will result in lower ratings of both personhood and personal identity relative to both the neutral and Western conditions. On the other hand, I predict Western cultures will be unaffected in personhood and identity ratings following the shift in one's social sphere. Compared to other countries, U.S. culture emphasizes individuals' uniqueness (Markus and Kitayama 1991, 2010; Savani, Morris, and Naidu 2012) and the autonomy to opt into or out of social roles and relationships (Schug, Yuki, and Maddux 2010). Due to the presumed malleability of the social world, and inconsequential nature of environment on self, Westerners thus should not view such external/social changes as undermining a person's identity continuity.

While in the last frame I predicted Westerners to be unaffected, and East Asians largely affected, for frame type #3 (PVS-cultural), I predict the opposite. Due to the drastic internal psychological/moral changes, I believe Westerners will interpret the scenario as more identity altering (lower ratings for personhood and identity). This is because dramatic changes in one's internal traits can threaten identity as it alters a Western belief of essential substance of self (Heine 2008). East Asian individuals, in contrast, have been observed to have a less clear concept of self, and not see consistency as necessary for psychological well being (Heine 2008). Hence, I predict East Asian individuals will see the situation with fluidity (or merely as an unfortunate consequence) and display no change in ratings.

The neutral condition for frame #2 (half brain) is as below:

The year is 2450 and human civilization has advanced greatly. Sara, a young woman, was recently diagnosed with an incurable wasting condition in her body. But her brain is perfectly fine, so doctors recommend growing a new body to host Sara's

consciousness. The host body is grown from Sara's own stem cells, so it perfectly matches Sara's DNA and physical stature. Doctors reorganize the information in Sara's brain so that all memories, emotions, and traits are redundantly duplicated in each half of the brain. After administering a sedative, one team of doctors carefully removes one half of Sara's brain and carefully implants it into the new body, which is then wheeled to the West Recovery Room. Simultaneously, another team of doctors carefully implants the other half of Sara's brain into a preservation tank and saves it as a backup. Sara's sister is waiting anxiously in the West Recovery Room. A familiar voice says, "Sara, it's great to see you."

Participants rated their agreement with the following statements on a scale of 0 (strongly disagree) to 10 (strongly agree):

1. After the event, the individual is still Sara
2. After the event, the individual is still the same person as before the event
3. After the event, the individual is still a person
4. After the event, the individual only has one half of her physical brain [comprehension check]

In the cultural condition, the following paragraph was added to the end of the scenario:

After Sara's half-brain operation, though, an unexpected consequence occurs, and Sara gains the "ability" to see and speak to ghosts. Slowly, the people around Sara start to develop paranoia. Despite their love for Sara, her peers and family all start to avoid her, and she is seen as a threat. The government hears about Sara, and sentences her to death. Only through losing her name, undergoing an unrecognizable appearance change, and "ceasing to exist" to her family/friends, will Sara be allowed to live. Sara accepts these conditions, and goes on to live the rest of her life in solitude.

In the cultural condition, the following comprehension check was provided: "After the event, the individual still sees her friends."

The neutral condition for frame #3 (PVS) is as below:

Anh is a freelance writer. On Anh's way back home, his car was struck on by a truck. The ambulance arrived quickly, but there was not much they could do for Anh. Although Anh did not die, he entered a Persistent Vegetative State. While his body is still technically alive, he will never regain consciousness.

Participants rated their agreement with the following statements on a scale of 0 (strongly disagree) to 10 (strongly agree):

1. After the event, the patient is still Anh
2. After the event, the patient is still the same person as before the event
3. After the event, the patient is still a person
4. After the event, the patient is still breathing [comprehension check]

In the cultural condition, the following paragraph was added to the end of the scenario:

In a completely miraculous event, Anh regains consciousness. Anh remembers everything from before the accident. However, the mild-mannered, respectable, and expressive Anh all of a sudden awakes foul-tempered, erratic, and disengaged. Anh has also lost all interest in writing, and nurses have reported Anh stealing their belongings.

In the cultural condition: the following comprehension check was provided: "After the event, the patient has the same memories as before the accident".

FRAME TYPE #4: PERSISTING AS MANY

Prior cross-cultural research suggests a distinction between how Western and East Asian cultures reconcile, transcend, and even accept apparent contradictions (Nisbett 1990). According to this distinction, human thinking is guided by two separate classes of cognitive strategies that implement different computational principles. One can be described as intuitive, experience-based, or holistic, whereas the other can be described as formal, rule-based, or analytic (Evans

1996; James 1890; Neisser 1963; Smith, Langston, and Nisbett 1992; Tversky and Kahneman 1983). In the context of culture, research has found that Chinese beliefs of Tao and Yin-Yang have led Chinese to rely less on use of categories and formal logic, and believe that two conditions can be incompatible, but both have merit (Chang 1939; Mao 1937; Norenzayan et al. 2000), Western cultures approach conflicting scenarios with a more analytic, or rule-based logical approaches, tending to detach objects from their context to avoid contradictions (Norenzayan et al. 2000; Nisbett 1990). This suggests that in response to contradictions, East Asians have tendency towards a "middle way", or compromise (dialectic reasoning), while Westerner's drive for consistent logic results in "polarizing" responses to contradictions (one option true, the other false) (Peng and Nisbett, 1999; Davis, Nisbett, and Schwarz 2000). These conflicting approaches presents an interesting dichotomy in culture-cognition, and one I wanted to further explore in personal identity.

In my design, I adapted the famous "quantum teleportation" thought experiment cited by Weaver and Turri (in press) (Parfit 1984) in which an individual creates a replica of oneself and travels to another dimension or location. The experiment aimed to test the one-person-one place rule, addressing whether or not a person can exist in two places at the same time (Mars and Venus).

The neutral condition remained close to the original framing (minor wording variations), but in the cultural condition, I altered the events to address these culturally-diverging reasoning styles through aiming at cases of apparent contradictions. I further abstracted the experiment through constructing an alteration to the popular "grandfather paradox". In this paradox, an individual time travels and "rewrites" their past by interfering with the origin of their familial line. As a result of this paradox, inconsistencies/conflicts emerge in regards to the time traveler's own existence. I adapted this paradox so that in an (admittedly) absurd scenario, the individual's replica exists in a separate time frame in which it fathers the current individual (Kim). By intentionally obscuring the grounds of this frame, I sought to examine how Eastern and Western cultures implicitly reconcile self in cases of contradiction, inconsistencies, and personal doubt/ambiguity (brought upon by Kim's self-proclaimed existential crisis).

I hypothesize that due to Western cultures "polarizing" reactions to contradictions, the apparent inconsistencies/paradoxes in this study will lead Westerners to respond towards one extreme of the scale. In the scenario, the

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individual (Kim) clearly still exists in physical form; the contradiction rather exists on a meta scale. Therefore, I believe Westernized individuals will have trouble arguing Kim doesn't exist, and in a search for constancy, attribute consistently higher ratings of personal identity (mainly 10s). This would be consistent with findings of Kung et. al (2016) which found that Americans have a stronger presumption that personal identity is continuous over time. Comparatively, East Asian dialectic reasoning lends to a less clear concept of self (Heine 2008), and a tendency towards finding the "middle way". In this, I believe East Asians will "compromise" between Kim's physical and mental paradox/conflict, attributing averaged ratings ($M \sim 5$) of personal identity (name and individual statements).

The neutral condition is as follows:

The year is 2450 and human civilization has greatly advanced. Kim is currently on Earth. His mother is on Mars. Feeling somewhat lonely, Kim enters the Quantum Teletransporter in his house on Earth creates a temporary extension of himself, which he scans and sends to visit his mother on Mars. In an instant, the quantum device scans his body and records the exact state of all his cells and brain states. Instantly, the information travels through an information wormhole to Mars where it is perfectly reconstituted in physical form. The traveler steps out of the Teletransporter into Kim's mother's apartment on Mars. With a smile, they hug and she says, "My dear! I'm so happy to see you!". Kim remains in his house on Earth, watching and living vicariously through this interaction.

Participants rated their agreement with the following statements on a scale of 0 (strongly disagree) to 10 (strongly agree)

1. During the event, the traveler is still Kim
2. During the event, the traveler is still the same person as before the event
3. During the event, the traveler is still a person
4. During the event, the traveler recognizes his mom [comprehension check]

In the cultural condition, the following paradox was added:

Suddenly, however, something goes wrong with the Quantum Teletransporter, spinning and tumbling until it eventually opens another 30 years into the past. The traveler steps out of the Teletransporter into Kim's mother's apartment on Mars. His mother does not recognize the traveler's appearance—stating it must be the first time they met. "It seems you are a lost traveler". She says. Due to the glitch in the Teletransporter, Kim believes some of the extension's mental states and consciousness were not properly coded, but regardless a pleasant conversation with Kim's mother follows. When the time comes, Kim instructs his extension to return to Earth. However, the teletransporter malfunctions again, and his extension cannot return. Watching from Earth, Kim abandons his extension in the past, and shuts off his Quantum Teletransporter. After this event, Kim contacts his mother. "That's coincidental, because 30 years ago on this day, in a rather faithful encounter, I met a strange traveler." She says. "Your father was quite a handsome man." Kim feels a combination of nausea, emptiness, and confusion. Kim confronts the paradox that he is his own father. Kim is at a loss for words.

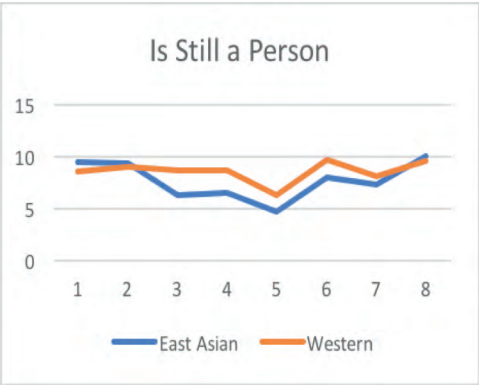
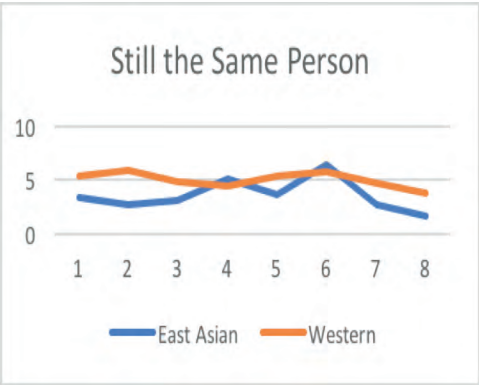
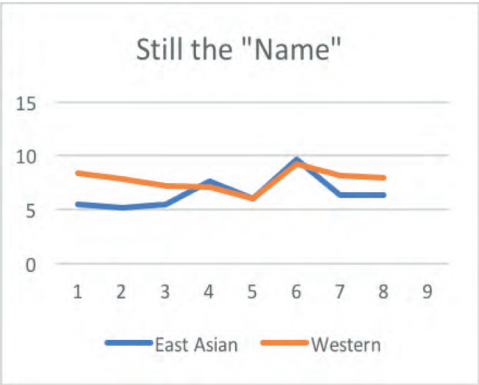
Participants rated their agreement with the following statements on a scale of 0 (strongly disagree) to 10 (strongly agree):

1. After the event, the person on Earth is still Kim
2. After the event, the person on Earth is still the same person as before the event
3. After the event, the person on Earth is still a person
4. After the event, the person on Earth still exists [comprehension check]

This frame addresses the following questions: cross-culturally, do people affirm findings of Weaver and Turri—in that judgments of personal identity are not committed to a one-person-one-place rule? Do different cultures have different interpretations of the idea that the mind can be divided into two streams of consciousness and have two simultaneous streams of experience separate from one another? Finally, do cultures reconcile logical fallacies/ambiguity/existential matters differently in thought experiments on personhood and identity?

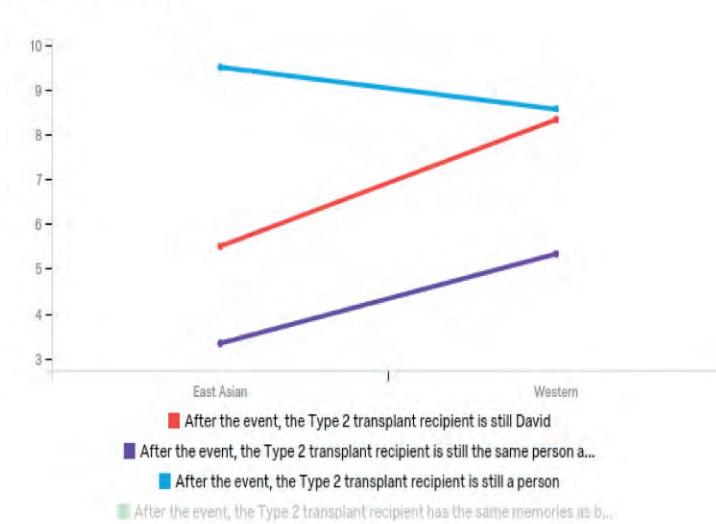
RESULTS

Independent t-tests (2-tailed) were performed on every question frame (8) x every condition (3) to determine whether East Asian and Western cultures displayed significant differences in approaching self along name, personhood, and identity statements. Out of the 16 computations, 3 emerged statistically significant. In the neutral brain transplant frame, East Asians reported weaker agreeance with the statement that the Type 2 transplant recipient "is still David" ($M = 5.5$, $SD=2.43$, $SE = 0.99$) than Westerners ($M=8.33$, $SD=1.83$, $SE=0.61$); $t(13)=2.58$, $p=.022$ (see Figure 5). This result was later repeated in the cultural brain transplant frame, with East Asian cultures once again showing lower ratings for "still David" ($M=5.17$, $SD=2.19$, $SE=0.89$) than Western cultures ($M=7.89$, $SD=1.85$, $SE=0.61$); $t(13)=2.6$, $p=.022$ (see Figure 6). The third significant result was also in cultural frame 1 in response to ratings on whether David was "still the same person". East Asian cultures perceived David as less of a person following the brain transplant ($M=2.67$, $SD=2.62$, $SE=1.06$) than Western cultures ($M=5.89$, $SD=2.73$, $SE=0.91$); $t(13)=2.27$, $p=.04$ (see Figure 6). All other hypotheses pertaining to Eastern and Western intuitions on personal identity emerged non-significant, although for 67% of the answers (83% including equal ratings), East Asians reported lower ratings for all 3 statements (still Kim, still person, still same person) relative to Western ratings (see Figures 3, 4, 5). While this pattern was not statistically significant, it formed a notable trend. Furthermore, in computing the total SD across all variables in East Asian and Western cultures, East Asians had a total SD of 70.58, whereas Westerners had a total of 60.2.

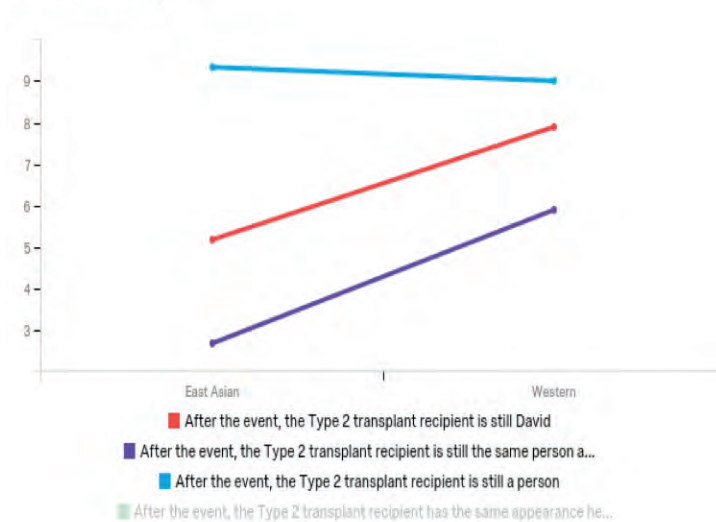


Figures 2, 3, 4. Mean ratings of Eastern and Western cultures across all conditions (#1-8; every even number corresponding to culture frame) on attribution of names, personhood, and identity.

Neutral Brain Transplant



Cultural Brain Swap



Figures 5, 6. Mean ratings for influence of culture on question type across neutral and cultural brain transplant conditions.

DISCUSSION

Contrary to predictions, there emerged no significant effects of culture between neutral and cultural conditions, and also along attributions of personhood, identity, and name across frames. In this discussion, I will first directly address my general hypotheses. First, I predicted that neutral conditions would not elicit any significant cultural differences. However, neutral frame 1, condition 1 (still name) was significant. Upon further extension, I predicted that in the case of significance in the neutral condition, the effect would be amplified in the cultural condition. Out of the 3 statistically significant results, only 1/3 of the results corresponded to the same statement across frames (Q 1 and Q 2: still name). In both instances, the p value was 0.22. This rejects my hypothesis that significant interactions increase in cultural conditions. This is also demonstrated by the overall absence of significant interactions, in that I predicted a notable portion of cultural conditions would be significant when neutral conditions were not (this only occurred once out of 12). I also predicted that the overall SD will be larger for Western conditions than for the East Asian conditions; this was also disproven (East Asians SD =70.58, Westerners SD = 60.2). As in the research overview, while I did not analyze for differences between statements, one can see from Figure 2, 3 ,4 that individuals do respond differently to questions of personhood, identity, and name (supporting findings from Berniunas and Dranseika 2016), but cross-culturally it appears to follow a relatively similar trend.

These results converge to suggest that contrary to suggestive research, East Asians and Westerners generally did not adhere to their norms of analytical vs. holistic (dialectic) reasoning in personal identity thought experiments. This also suggests no consistent (significant) effect of framing of cultural conditions on intuitions of personhood and identity, and no/limited effect of malleability of self vs. world, relation of self to others, etc.

This result largely undermines some widely held philosophical assumptions about the influence of culture on self-construal, suggesting that cited cultural influences/diverging models do not consistently manifest in personal identity intuitions (through thought experiments). These results provide a great starting point and context about the treatment of personal identity across cultures. Of course, more discussion is warranted, and it is important to address possible considerations/confounding factors as to why this result may have been observed. Perhaps this finding is unique to thought experiments, in that its highly

abstract qualities isolate one's judgment from culture. Prior research on identity continuity (Kung 2016), tested for cultural effects in an explicit manner, giving Indian participants a passage largely imbued with cultural cues (5 statements on changes in external relationships). It is possible that this study's cultural frame approached culture in a too weak/ineffective way, and in the process to "trigger" cultural elements, only further obscured the scenario. This could explain the lack of significant effects in cultural conditions; however, I am aware that earlier studies could also be accused of being a form of "demand task". It is also possible that responses were confounded by testing fatigue, in which I observed as the trials went on, the answers became more and more restricted to arbitrary ratings of 0 or 10. This is supported by findings that the total SD for questions 1-4 was 12.77 (all 3 statements), whereas the total SD for question 5-8 was 18.72. These polarized ratings could have been significant to the hypothesis if it was noted only in frame #4 (the scenario with inconsistencies), but this was observed throughout and across both cultures. Whether or not this is due to testing fatigue, the high SD in later questions could possibly have obstructed the effects. This ties into the results that the 3 significant effects appeared in the first two questions, perhaps suggesting that participants were more intentional with their answers in the beginning. The alternate hypothesis to the results of frame type #1 is that personal identity intuitions only differ in situations of whole-brain transplants (unlikely, but possible). A more significant observation from these results in frame #1 is that when culture does interact with self, it only does so in respect to name and identity, and not in personhood (2/3 significant findings with "name" condition; 1/3 for "same person"). This suggests that Eastern and Western cultures converge on the concept of what makes a person, but not necessarily on name and identity in certain scenarios. Furthermore, the emergence of a significant result in the cultural condition only ("still the same person") suggests that the body swap to the father's body did elicit some cultural effect on intuitions about identity. While one would still deduce from these findings that personal identity is generally resistant to cultural influence, this does highlight an instance of cultural significance.

Another factor to consider is referenced in Grossman and Na (2014)'s paper, "Research in culture and psychology: Past lessons and future challenges". They note some recurring problems in measuring social orientation and cognitive style in culture and psychology, in that self-report measures come coupled with a lack of sensitivity and misleading conclusions when examining social orientation

across cultures. This is due to vulnerability to “deprivation effects”, which are, “a tendency to prefer those properties that one feels are lacking in one’s cultural environment”. An example by Peng is illustrated, in which Americans may report valuing humility more than Chinese, even though humility may reflect greater interdependence (characteristic of Chinese cultures). In contrast, Chinese may report valuing personal choice more than Americans, even though personal choice is a sign of independence (Grossman 2014). Thus, it is possible that factors considered indicative of one culture may have actually produced the opposite effect, with Westerners responding in the way it was anticipated East Asian cultures would. This is a possible alternative explanation to the results regarding overall SD in respect to reasoning type. Future research would benefit from ratings not derived from self-reported data.

Another possible consideration is evidence indicating that some cognitive processes are highly susceptible to cultural influence, while others are not—for instance, naive theories of mechanics and physics (Baillargeon 1995; Carey and Spelke 1994; Leslie 1982; Spelke 1988, 1990), and naive theory of mind (Asch 1952; D’Andrade 1987; Leslie, 1994; Wellman 1990). Theory of mind is described as “the ability to attribute mental states, beliefs, intents, desires, etc. to oneself and to others” (Heine 2008) and to possess the ability to empathize/recognize other’s situations. In my initial exposure to this concept, I distinguished it from “the philosophy of mind” (from which self-constructs are seen to emerge)—however, it is possible that in the frame of thought experiments, philosophy of mind is also impervious to cultural influence. Despite the bounty of cultural studies observing diverging models of cultural selves, it is possible that the intuitive processes behind theory of mind and philosophy of mind converge more than anticipated—explaining the insignificant cultural effects.

Another notable consideration of this study was the participant pool. Analysis was conducted on $n=15$ and due to access limitations, the East Asian condition was drawn from individuals who ultimately live in the U.S., go to school in the U.S., and have ample exposure to Western ideals/culture (regardless of whether they identify/exemplify it). In other studies that observed cultural effects, samples have been drawn from the host country. For example, Chiu and Hong (1997), tested cross-cultural differences with people in Hong Kong, and Nisbett (2001) tested Japanese participants at Kyoto University, Japan. While this cultural background was considered to its best ability, it is possible this could have affected the results.

From this discussion, I indicate a couple ways in which this study could be improved. First, a larger and more representative participant pool (currently living in country) would provide more generalizability and control for the cultural components studied and hypothesized. Data showed that for 67% of the answers, East Asians reported lower ratings for all 3 statements (still Kim, still person, still same person), and 83% when less than or equal to Western ratings. None of these results were significant, however, future research could address whether better sampling would push results in the predicted direction, showing that Westerners do exhibit significantly stronger identity continuity (across personhood, name, identity) than East Asians in thought experiments. This would support research that Americans have a stronger presumption of personal identity continuity over time (Heine 2008). This replication could also potentially amplify the effect of cultural frame types on identity ratings (perhaps to a point of significance). Additionally, the flexibility of a larger pooling sample could allow for a between-subjects design, which could eliminate any confounding factors due to repeated exposure to question frames. It is possible that under different conditions, this study could observe vastly different results. However, the current findings provides an important and equally informative foundation for further research and current understanding of cross-cultural percepts of identity.

In conclusion, this study aimed to address whether East Asian and Western cultures promote different intuitions in thought experiments about self in regards to personhood and identity. Overall, this specific study's results suggest that judgments of personal identity and personhood are fairly robust across East Asian and Western cultures.

APPENDIX MATERIALS (QUESTIONNAIRE)

The following questions were asked to participants post-experiment in no particular order:

In what countries have you lived, and for how long? If visited, for how long? 2. What languages do you speak at home? How much for each (time spent, with whom)? 3. What is your race? Ethnicity? What do you identify as (ex. American, Chinese-American)? How closely do you identify with your ethnicity? (1-10) 4. If you identify with American, for how many generations has your family lived in the U.S.? 5. If you identify with an East Asian ethnicity, how

familiar are you with Confucian values (answer 1-10)? Do you feel you incorporate these values into your everyday life/perception of the world? (if not identify, can just write N/A)

For inclusion to analysis in the East Asian condition, participants selected had to be of an East Asian racial & ethnic background (Chinese, Japanese, or Korean), rated 7 (or up) for self-identification, rate 5 (or up) for familiarity with Confucian values, and either be fluent (use at least 50% percent of the time) in their country's native language or have lived there for 5+ years. For inclusion in the Western condition, participants selected had to have lived in the U.S. their whole lives, be 3rd generation or higher, speak English 80% or more of the time, and identify 7 (or up) with their self-identification. These factors were decided in interest of best controlling for cultural influence given the study's motive and available resources, but we recognize that race and personal identity is highly complex and non-reductive.

Additional survey questions were used for simple inquisitive means: How independent of an individual would you consider yourself? (1-10) In what ways do you feel you are independent? Or not? How important would you say friends and family are to your life (in terms of your identity)? (1-10)

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