

THE EFFECTS OF PRIMING, CULTURE, AND CONTEXT ON PERCEPTION OF  
FACIAL EMOTION, SELF-REPRESENTATION AND THOUGHT:

BRAZIL AND THE UNITED STATES

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Individualist and collectivist cultural approaches describe the relationship between an individual and his or her social surroundings. The current study had a two-fold purpose. The first was to investigate whether Brazilians, like other collective peoples, displayed more group self-representations, categorized items more relationally and paid more attention to context than Americans. The second purpose of this study was to investigate if counter-cultural primes played a role in activating either collective or individual selves. Both American ( $n = 100$ ) and Brazilian ( $n = 101$ ) participants were assigned either to a no-prime condition or a counter-cultural prime condition and then were asked to rate emotion cartoons, categorize items, complete the Twenty Statement Test (TST), and choose a representative object. As expected, unprimed Brazilian participants displayed more collectivist patterns on emotional ( $F[1,196] = 10.1, p = .001, \eta^2 = .049$ ;  $F[1,196] = 7.9, p = .006, \eta^2 = .038$ ;  $F[1,196] = 9.0, p = .005, \eta^2 = .044$ ) and cognitive ( $F[1, 196] = 6.0, p < .01, \eta^2 = .03$ ) tasks than Americans. However, Brazilians offered more individualist self-representations ( $F[1, 195] = 24.0, p < .001, \eta^2 = .11$ ) than American participants. Priming only had a marginal effect on item categorization ( $F[1,194] = 3.9, p = .051, \eta^2 = .02$ ). Understanding such cultural differences is necessary in the development of clinicians' multicultural competence. Therefore, these findings, along with the strengths and limitations of this study and suggestions for future research, are discussed.

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## TABLE OF CONTENTS

ACKNOWLEDGEMENTS.....	iii
LIST OF TABLES AND FIGURES .....	v
Chapter	
1. INTRODUCTION.....	1
Individualism and Collectivism	
Cultural Differences in Attribution and Attention	
Priming: The Importance of Context	
Rationale for Current Study	
Research Questions and Hypotheses	
2. METHOD.....	20
Participants	
Measures and Instruments	
Procedure	
Plan for Hypotheses Tests	
3. RESULTS.....	28
Demographic and Descriptive Analysis	
Hypothesis Testing	
4. DISCUSSION.....	34
Emotional Perception: Discussion and Limitations	
Cognitive Orientation: Discussion and Limitations	
Self-Representation: Discussion and Limitations	
Pen Selection: Discussion and Limitations	
Priming: Discussion and Limitations	
General Discussion	
General Limitations	
Clinical Implications	
Future Research	
APPENDICES.....	62
REFERENCES.....	80

LIST OF TABLES AND FIGURES

Table 1: Means for Emotion Ratings on Validation of Cartoon Emotion Task.....47

Table 2: Validation for Pen Choice.....47

Table 3: Frequencies for Demographic Variables by Country.....48-49

Table 4: Table of Means for Cartoon Emotion Task by Country for all Emotion Ratings .....50

Table 5: Means for Nisbett Item Categorization.....51

Table 6: Means for Twenty Statement Test.....51

Table 7: Frequencies for Pen Selection.....52

Table 8: Correlations Among Variables.....53-54

Table 9: Partial Correlations with Culture as Control.....55

Table 10: Hypothesis 1: Means for Cartoon Emotion Task: Judgements of Happiness with  
Various Emotional Background.....56

Table 11: Hypothesis 2: Analysis of Variance for Nisbett Item Categorization.....57

Table 12: Hypothesis 3: Analysis of Variance for Twenty Statement Test.....57

Table 13: Hypothesis 4(a): Chi Square for Culture and Pen Selection Task.....58

Table 14: Hypothesis 4(b): Chi Square for Culture x Prime and Pen Selection Task.....59

Figure 1: Hypothesis 1: Brazilian and American cartoon emotion scores of happy focal figure  
with four backgrounds.....60

Figure 2: Hypothesis 2: Brazilian and American Nisbett Item Categorization scores.....61

## CHAPTER 1

### INTRODUCTION

Culture and worldview are characteristics that are specific to different cultural groups and societies across the world. Worldview is the collective wisdom of a group; it is a way of constructing a reality dependent on living conditions, geography and shared history. Culture, on the other hand, refers to the structure, rules, rituals and values that give members and society stability and meaning (Dana, 1999; Hofstede, 1980). Both worldview and culture permit the adaptation necessary for survival (Dana, 1999) and, because of the different locations and environments found across the globe, people differ markedly in how they view the self, how the self relates to others and how people relate to their social surroundings. The purpose of this study is to compare and contrast how Brazilians and Americans relate themselves to their social context.

#### Individualism and Collectivism

The concept of individualism and collectivism was first developed by Geert Hofstede (1980) and can be useful when studying Western and non-Western cultures and their behavior (Gelfand, Triandis, & Chan, 1996; Gouveia, Clemente, & Espinosa, 2003). Although it was Hofstede who surveyed thousands of employees from a multinational cooperation during the 1960s and 1970s (Hofstede, 1980), individualism has a history in the Western world that is rooted in 19<sup>th</sup> century empiricist thought stemming from the enlightenment movement (Gelfand, Triandis, & Chan, 1996). Such a zeitgeist permeated ideas of democracy, equality and individual freedom. Even today, individualistic thought and behavior can be observed throughout the Western world (see Oyserman, Coon, & Kimmelmeier, 2002 for a review).

In his research with more than 14,000 employees around the world, Hofstede (1980) evaluated four major intercultural dimensions: power distance, uncertainty avoidance, individualism and masculinity. Power distance is related to the “emotional dependence on more powerful people” (Hofstede, 1980, p. 221). Uncertainty avoidance refers to how people cope with and tolerate uncertainty. Some cultures might have more tolerance and flexibility for ambiguity, whereas others might expect to have a stronger sense of control over a situation. The third dimension is that of individualism, which describes how people relate to their social surroundings. Although this dimension was called individualism, it also includes its complement, collectivism. Masculinity deals with cultural gender roles. Of these few cultural dimensions, none has been more researched than that of individualism and collectivism. Furthermore, these concepts have reached far beyond the scope of human resources and personnel management and have had a great impact on other social fields.

According to Hofstede (1980), individualist and collectivist cultural approaches describe the relationship between the individual and his or her social surroundings. Individualist cultures (sometimes called independent cultures) are those in which people tend to think of themselves as separate and distinct social beings who are motivated by their own preferences, needs, achievements and accomplishments (Bhagat, Kedia, Haverston, & Triandis, 2002; Komarraju & Cokley, 2008; Triandis, 1989; Triandis, 1996). Collectivist cultures (sometimes called interdependent cultures) are those in which individuals see themselves and their identities as connected, or belonging to a group, and whose goals reflect that of the collective (Bhagat, Kedia, Haverston, & Triandis, 2002; Gelfand, Triandis, & Chan, 1996; Triandis, 1989; Triandis, 1996).

Generally, people from individualist societies believe that identity and the self are formed independently from others (Triandis, 1996; Triandis, 2001), which is reflected by the fact that in



individualist cultures it is more common for people to live in nuclear families as opposed to extended ones (Hofstede, 1980). In these cultures, social status depends on personal abilities and achievement (Oyserman, Coon, & Kimmelmeier, 2002). Personal uniqueness and distinctiveness are important to individualist persons as is the ability to act independently (Oyserman, Coon, & Kimmelmeier, 2002; Triandis, McCusker, & Hui, 1990; Triandis, 2001). In general, people from individualist cultures value the freedom to approach tasks and respect decisions that are made by individuals versus those made by groups (Hofstede, 1980). Personal goals come before the goals of the collective (Triandis, 1989). Also, Hofstede (1980) observed that the individualism-collectivism continuum was related closely to a country's economic level. Those countries which were more developed were more individualist. Furthermore, Triandis (1989) notes that more complex cultures tend to have less collectivist tendencies.

On the other hand, people from collectivist cultures view the self and identity as dependent of the collective group identity (Triandis, 1996; Triandis, 2001). Social relationships and social hierarchy are commonly accepted (Oyserman, Coon, & Kimmelmeier, 2002), and social status is based on relationships and group membership (Trafimow, Triandis, & Goto, 1991; Triandis, 2001). Although rules are important to the social organization of collectivist cultures, there is an acknowledgement that context and environment play a unique role in people's actions (Oyserman, Coon, & Kimmelmeier, 2002). For collectivists, it is more important to know influential people than to possess individual ability (Vincent, 2003). In such a society, it is common for people to live with extended family members, such as cousins, aunts, uncles and grandparents (Hofstede, 1980). Personal uniqueness is not as important as the goals and needs of other people or groups (Triandis, 1996; Triandis, 2001).

Collectivists tend to have more flexible personalities, as shown in measures of personality, and they are more able to adjust their personalities to meet the demands of the social environments than individualists (Triandis, 2001). Based on an accumulation of studies, Triandis (2001) theorized that collectivists shape their personalities to adjust to their social environments and ingroups, but individualists often see their social environments as flexible but their personalities as unchanging. Thus, unlike collectivists, individualists attempt to adapt their social environments to their personalities.

Triandis, McCusker and Hui (1999) conducted a multi-national study involving college students from the United States (Hawaii and Illinois), Greece and China who completed five individualist-collectivist self-evaluations and tasks. They found that collectivists, as compared to individualists, described themselves using social roles and group identity more often, saw the groups they belong to as more homogeneous, gave more importance to collective values (such as group well-fare and harmony) and saw intimate and subordinate behavior coming from within their group rather than from outgroups.

Another study found that people from individualist cultures scored higher on independence and displayed less embarrassment than people from collectivist cultures (Singelis & Sharkey, 1995). European American and Asian American university students completed a self-construal scale and an embarrassability scale. Singelis and Sharkey (1995) found that individuals with a more independent view of themselves tended to rate themselves as less easy to embarrass than those who saw themselves as more collectivist. Furthermore, they also found that Asian-American university students tended to rate themselves as more interdependent than their Euro-American counterparts.

Collectivists are more accurate in predicting both their own and other's behavior, whereas those from individualist cultures generally overestimate the likelihood of positive behavior (i.e., distributing rewards, generosity) and underestimate negative behavior (i.e., rudeness; Balci et al., 2008). When a diverse and international group of children in a Spanish summer camp were asked to predict how they would redistribute prize candy, those from more collective countries (i.e., Spain) were more accurate in predicting and distributed their prize candy more democratically than those from more individualist countries. Similarly, when university students in the United States were asked to predict how much of their participation reward money they might give to charity, those students whose parents were both born in the United States tended to overestimate their generosity. Those with two parents born in China were more accurate at predicting and actually donating their money. Finally, Chinese university students in the United States predicted that they and their Chinese peers would be just as likely to display a rude behavior (by not signing a petition) whereas European American students predicted that their European American peers would be less likely engage in a charitable action.

In collectivist societies, people often conform their behavior to collective expectations. For example, Kim and Markus (1999) found that when participants were given a choice of five pens that were either green or orange, American participants tended to choose the pen of the minority color group (i.e., if one or two of the pens were orange and three or four were green, they tended to choose orange pens). The majority of East Asian participants chose a pen from the majority color pen group. Different cultures lead people to have preferences for things that conform to specific cultural values, such as fitting in and being like others (collectivist) or

standing out and being unique (individualist). See Oyserman, Coon and Kimmelmeier (2002) for further review on individualism and collectivism.

One of the major criticisms of employing the individualism-collectivism dimension for cultural study is that the construct is unidimensional and dichotomous (Gelfand, Triandis, & Chan, 1996). Specific cultural characteristics may be lost when labeling societies as either individualist or collectivist. For example, when labeling Western cultures such as the United States as individualist, values attributed to collectivism, such as harmony and community that exist in the United States might be overlooked. Furthermore, all individualist or collectivist cultures are not the same. For example, the collectivist culture of Japan might display collectivism that is very different from other collectivist cultures such as that of the Middle East or Latin America (Ferreira, Assmar, Souto, 2002; Gelfand, Triandis, & Chan, 1996; Masuda & Nisbett, 2001; Triandis, 1996).

Parting from such a premise, some consider the individualist and collectivist dimension as oversimplified and have offered more complex ways of defining cultures (Gelfand, Triandis, & Chan, 1996; Singelis, Triandis, Bhawuk, & Gelfand, 1995; Triandis, 1989; Triandis, 1995; Triandis, 2001). Triandis and colleagues hypothesized individualism and collectivism as independent constructs, separate from each other, rather than on the same continuum (Gelfand, Triandis, & Chan, 1996; Singelis, Triandis, Bhawuk, & Gelfand, 1995; Triandis, 1989). Thus it would be possible that a culture could display strong characteristics of both collectivism and individualism.

Through initial factor analysis, Singelis, Triandis, Bhawuk, and Gelfand (1995) found four factors related to the individualism-collectivism construct. They labeled “self-reliance and hedonism” and “separation from in-groups” as characteristics displayed by individualistic

societies. They labeled “independence with sociality” and “family integrity” as associated with collectivism. Triandis (1995) further conceptualized these four factors by organizing them as vertical and horizontal dimensions to the individualism-collectivism construct. The four resulting factors were horizontal individualism, vertical individualism, horizontal collectivism and vertical collectivism. Horizontal individualism is related to personal uniqueness and people in horizontal individualist cultures value independence. In vertical individualism, however, people value uniqueness, especially as it relates to achievement. Horizontal collectivists value cooperation and interdependence, whereas vertical collectivists value dutifulness towards the collective. Vertical collectivists will often sacrifice themselves for their in-group, whereas horizontal collectivists will often strongly identify themselves with their in-group (Triandis, 2001). These findings confirm that the individualism-collectivism construct is orthogonal and that a person/culture can be both high on collectivism and individualism (similar to a bicultural worldview; Benet-Martinez, Leu, & Lee, 2002; Hong, Morris, Chiu, & Benet-Martinez, 2000; LaFromboise, Coleman, & Gerton, 1993).

Triandis (1996) has asserted that there may be more than 60 cultural dimensions in which cultures vary, many of them related to the individualist and collectivist construct. For example, using a multidimensional scaling method, Gelfand, Triandis & Chan (1996) developed two dimensions in the individualism-collectivism construct: independence versus authoritarianism and active collectivism versus withdrawal from group involvement. Because collectivist cultures and individualist cultures may be similar to each other in some broad dimensions but differ in culture-specific characteristics, Triandis (1996) suggested a hierarchical model for understanding and defining cultural attributes which might be more appropriate than a dichotomous model. It is likely that cultures are similar on main defining construct features, but have different culture-

specific characteristics that distinguish them from other cultures (Gelfand, Triandis, & Chan, 1996). Therefore, like biology classifies animals into phylum, class, family and so forth, so can cultures be classified (Triandis, 1996).

Such attempts at understanding and defining culture-specific attributes are noteworthy because they avoid overgeneralizations and allow for a deeper cultural understanding of a group. However, today's culturally diverse world possesses a challenge for study because of the countless number of cultural and subcultural groups. Thus, laboratory studies have focused on the more simplified and unidimensional construct of individualism and collectivism. Although such a focus might only allow for a casual glance understanding of cultural differences, it is an important first step and serves as a gateway for understanding broad cultural dimensions.

#### Cultural Differences in Attribution and Attention

Heider (1958) hypothesized, and research has strongly supported, the view that observers attribute the causes of behavior to a person's disposition and ignore any situational factors that may cause their behavior. The classic Jones and Harris (1967) study showed that individualists assumed that an essay or speech by another person represented that person's own opinions on the topic despite the presence of obvious situational elements (such as knowing the author had been required to take a strong pro or con political position despite their personal opinion). Such overestimation of dispositional determinants of behavior is known as the fundamental attribution error, which has become a hallmark of social psychology (Ross, 1977; see Jones, 1979 for a history of this construct).

Although the fundamental attribution error has been replicated using the Jones and Harris (1967) paradigm in many collectivist cultures, including China (Krull, Loy, Lin, Wang, Chen & Zao., 1999), Korea (Choi & Nisbett, 1998), and Japan (Kitayama & Masuda, 1997), cross-

cultural studies have found that Westerners more often attribute behavior to a person's internal disposition, such as personality, whereas individuals from collectivist cultures tend to attribute a person's behavior to contextual and environmental factors (Miller, 1984; Miyamoto & Kitayama, 2002; Morris & Peng, 1994).

In particular, evidence strongly suggests that individuals in collectivist cultures are more sensitive to contextual cues than are individuals from individualist cultures. Abel and Hsu (1949) found that Chinese Americans were more likely to integrate a Rorschach card into whole responses whereas Americans gave more part responses. Kitayama, Duffy, Kawamura and Larsen (2003) found that Americans were better able to ignore contextual information than Japanese participants. In this study, participants were presented with a drawing of a vertical line slicing the top of a square (drawn within the square). They were then asked to recreate the vertical line on smaller squares either by imitating the proportion of the line to the square or by drawing the absolute length of the line regardless of the size of the square. The results showed that Japanese participants were better at drawing lines in regard to the proportion of the square and Americans were more accurate in drawing the absolute length of the line, regardless of the size of the square. Such a study illustrates the importance of context for collectivist cultures.

Masuda and Nisbett (2001) found that East Asians were more likely to take context into account when observing animated underwater scenes than were Americans. They showed Japanese and American participants animated underwater scenes that included three large focal fish in the foreground with smaller fish and objects in the background. Japanese participants not only were able to recognize focal objects, but they also attended to the context in which those fish swam. Americans focused mostly on the focal fish. Masuda and Nisbett (2001) hypothesized that East Asians have a more holistic view of the world and attend to entire

contextual fields and their relationship with focal objects. In contrast, Westerners engage in analytic thought and focus on objects independently of context. In a recent eye-tracking study, Chua, Boland and Nisbett (2005) found that Americans attended more to focal objects (big fish) and attended less to objects' surroundings than the Chinese participants did. Furthermore, the Westerner participants were more sensitive to changes that occurred to the focal objects whereas East Asians were more sensitive to changes in context (Masuda & Nisbett, 2006).

Morris and Peng (1994) found that Chinese individuals were more likely to give situational explanations to social events, objects moving in ambiguous trajectories, and even newspaper murder articles, whereas Americans were more likely to give dispositional explanations. Norenzayan, Choi, and Nisbett (2002) found a similar pattern of perception with Koreans and Americans, but also found that the way situational information was presented played an important role in attribution. When Koreans were presented with paragraphs which emphasized strong, salient contextual information, they made more situational explanations, but when the situational information provided was subtle, Koreans were just as likely as Americans to commit the fundamental attribution error.

Collectivists' greater attention to context can also influence the perception of facial emotion in others. When judging the emotion of a focal cartoon character that displayed sad, happy or angry emotions which was situated with background figures that expressed the same emotion or a different emotion than the central figure, Japanese participants were more likely to attend to the surrounding people than were Americans (Masuda, Ellsworth, Mesquita, Leu, Tanida, & Van de Veerdonk, 2008). In this study, Americans judged the focal emotion without taking into account the emotions of the surrounding cartoons. For example, when a picture was



shown in which the focal person was happy, but the background figures were sad, Japanese scored the focal person as less happy than did Americans (Masuda et al., 2008).

### Priming: The Importance of Context

There is increasing interest in the possibility that different societies might display both elements of collectivism and individualism (Gelfand, Triandis, & Chan, 1996; Gouveia, Clemente, & Espinosa, 2003). Thus, it should be possible to prime individuals to access either collectivist or individualist cultural self-schemas or cognitive self-representations (Benet-Martinez, Leu, & Lee, 2002; Hong, Morris, Chiu, & Benet-Martinez, 2000). Priming generally involves leading participants in tasks in which they themselves are not made aware that the researchers' intent is to manipulate individualist or collectivist aspects of the self (Oyserman & Lee, 2007; 2008). Priming increases or decreases the likelihood that an individual will experience their individualist or collectivist selves by presenting individuals with situational cues that are consistent with either self. The responses on future unrelated tasks reflect a carryover effect that was subtly activated in the previous priming task.

In an initial priming study with U.S. college students, Brewer and Gardner (1996) asked one group of participants to first find the words "we-us" in a paragraph and another group to find the words "they-it." When they asked participants to complete a set of "I am" sentences, they found that the group primed with "we-us" was more likely to report self-representations that were consistent with collectivist selves. Participants primed with the words "they-it," offered self-representations that were more consistent with their individualist selves.

Today's globalization, geographical mobility and media play an important role in people's self-representations. Individuals are exposed to varying cultural values and behavior which may influence their self-schemas. If in an individualistic society, such as the U.S., it is

possible for participants to respond in more collective ways, would it not be possible to prime the individual self of those living in collectivist cultures?

Hong, Morris, Chiu and Bennet-Martinez (2000) primed Chinese participants from Hong-Kong who had assimilated some aspects of the British individualist and the collectivist Chinese culture. It was hypothesized that such individuals would have been exposed to British and American communities and values throughout their lifetimes. Chinese or American iconic pictures were presented as primes. Participants were then shown a picture of a fish swimming in front of other fish and asked “why one fish was swimming in front of the other group” (Hong et al., 2000, p. 714). It was thought that Chinese primes, such as a Chinese dragon or the Great Wall would activate parts of the participants’ selves that was related to Chinese culture and that American primes such as pictures of the American flag or the U.S. Capitol Building would activate parts of the participants’ selves that were related to an individualist culture. When primed with American icons, participants claimed that it was due to internal factors, that one fish was “leading the other fish.” When primed with Chinese icons, participants responded by attributing the fish’s behavior to the environment, that the fish was being “chased by the other fish.” This study is not only an example of how the fundamental attribution error is related to Western cultural schemas, but it also shows that such cultural schemas can be accessed by priming.

In a study similar to Nisbett (2003), Ji, Zhang, and Nisbett (2004) asked Hong Kong and Singapore Chinese, Mainland and Taiwanese Chinese and Asian American and European American college students to indicate which two words were most similar to each other from the word lists that included the item: monkey, panda and banana. Much like Nisbett, they found that East Asians spontaneously organized objects in relational ways (choosing “monkey” and

“banana”) while their American counterparts organized objects categorically (choosing “panda” and “monkey”). However, Ji, Zhang, and Nisbett (2004) were interested in evaluating language as a prime. When bilingual Mainland and Taiwanese Chinese participants were asked to organize objects in English, they organized them categorically, but when the task was given in Chinese, they organized objects relationally. Language prime made little difference for Hong Kong and Singapore Chinese participants (who learn English at earlier ages) or for American mono-culturalists. It is thought that the age in which a language is learned might play a role in whether language can be used as a prime for bilingual individuals.

Trafimow, Triandis and Goto (1991) found that Chinese college students were more likely to report more collective self-schemas than American students when asked to complete a set of the sentence “I am.” However, when asked to think about what made participants different from family and friends (and thus priming the individualist self), both Chinese and American groups were more likely to report self-schemas consistent with individualism. When participants were asked to think about the similarities that existed between themselves and others (and priming collectivist self), both groups reported more collective self-schemas.

In a meta-analysis of the priming literature, Oyserman and Lee (2008) consistently found that priming either collectivism or individualism had significant effects on values, self-concept, well-being, social relationships, attitudes and patterns of thinking. Those primed by individualist cues responded in patterns that reflected individualism and those primed by collectivist cues responded in patterns that corresponded to collectivism. The studies analyzed included varied primes, such as using language itself as a prime, pronoun circling, thinking about similarity and differences between friends and family, visualizing a heroic figure as either independent and achievement oriented or self-sacrificing and socially oriented, and descrambling sentences. They

also noted that East Asian cultures were overrepresented in the priming literature and that there is currently little research conducted on priming in the Middle East, Africa or Latin America.

This was also noted by Brazilian researchers (Ferreira, Assmar & Soto, 2002).

#### Rationale for Current Study

Brasilia, Brazil was chosen as a suitable location for this study to take place because of its location in the center of Brazil and its relatively short history. Built in the 1960's as an experiment of modernity, people have migrated to this city from across Brazil. Such a place can serve as a microcosm for Brazil's diverse culture and history. Colonized originally by the Portuguese, Brazil is not a country with a homogeneous culture. The influence of the Portuguese colonization, African slave-trade, Dutch and French invasions, and German and Italian immigration, makes a fascinating syncretic culture that is intertwined with native cultures. This makes Brazil a particularly unique country to study individualistic and collectivistic constructs.

Although there certainly would be differences in studying different regions of Brazil, past research and observations initially point Brazilians toward a collectivistic orientation (Hofstead 1980; Oyserman & Lee, 2007; Pearson and Stephan, 1998; Vincent, 2003). Brazilians have a strong national orientation and social status is based on relationships and group membership (Vincent, 2003). Identifying with in-groups has been observed as important for social survival (Gouveia, de Albuquerque, Clemente, & Espinosa, 2002). In Brazil, the size of someone's social networks and who he or she knows is more important than personal achievements. The skill of networking makes more resources available for a person and his or her family (Vincent, 2003).

There is a general acknowledgment that context and environment play unique roles in people's behavior and that different situations might call for social flexibility and defiance of rules (Vincent, 2003). *Jeitinho*, for example, is a social behavior that has been developed as a

means for social survival in a very bureaucratic society (Vincent, 2003). Meaning, “the way” or “make it work,” *jeitinho* is a concept that conveys that any difficult situation can be resolved or overcome through establishing a social connection and utilizing a personal relationship with the right person. There is an exchange of favors which is reciprocal and obligatory, although no one necessarily keeps count, and people are rewarded based on connections that can be beneficial on personal and professional levels (Vincent, 2003).

Pearson and Stephan (1998) found that Brazilians were more collectivistic than Americans in their style of negotiation. The researchers found that when negotiating, Brazilians, like individuals from other collectivist cultures, tended to take into account how an outcome might influence others. Americans, on the other hand, were more concerned with personal benefits. They also found that Brazilians distinguished ingroups and outgroups more easily than Americans. Americans tended to treat members of ingroups and outgroups similarly, but Brazilians tended to avoid conflict when the conflict involved a member from an ingroup.

Although these initial studies and observations are certainly consistent with a collectivist orientation, Ferreira, Assmar and Soto (2002) argue that most research has been conducted in the U.S.A., Europe and Asia, and are not reflective of the specific cultures of Latin America. Because of this, research conducted with Brazilians on measures of individualism and collectivism are valuable. Ferreira, Assmar and Soto (2001) point to two scales that were adapted, developed and presented by Brazilian social scientists at the 2001 annual psychologist meeting in Rio de Janeiro. Torres and Perez-Nebra (2001) validated Singelis and colleagues’ (1995) scale for Brazilians and Gouveira, Andrade, Meira and Jesus (2001) developed a six-factor scale to evaluate individualism and collectivism. Gouveira and colleagues added two more factors to Singelis and colleagues’ (1995) horizontal-vertical individualist-collectivist

factors: protoindividualism (individuals behaving independently from others) and expressive individualism (tendency for individuals to center their behavior around relational frames of references, such as family and local community).

Cross-cultural studies are becoming increasingly common in the mental-health field and much of the known literature that compares cultural differences employ collectivist and individualist constructs. Understanding cognitive, emotional and coping styles of Asians and Latinos has been helpful for American psychotherapists to begin to construct a multi-modal, multicultural therapeutic approach (Comas-Diaz, 1994; Kuo, 2004).

Individualist and collectivist worldviews have been associated with different help-seeking patterns and expectations of mental health services. Studies have shown that those from collectivist cultures tend to use mental and physical health services less often than those from individualist cultures (Dana, 2000). This may have a logical explanation. Traditional psychotherapy stems from a Western tradition with the premise that a person exercises individual freedom and control and that such factors play a role in modifying behavior cognitions and emotion (Dana, 2000; Kuo, 2004; Sue & Sue, 1999). Such a Western and individualist approach toward psychotherapy often conflicts with collectivist values and worldviews. For example, collectivists tend to focus more on harmony in relationships. Therapists working with those from collectivist backgrounds have observed more family-centered orientation and values than Westerners (Comas-Diaz, 1994; Dana, 2000). Because of this, collectivists often use coping mechanisms that involve others rather than utilizing traditional mental health services (Dana, 2000; Kuo, 2004; Sue & Sue, 1999).

Brazil is a country that has not been extensively researched using individualistic and collectivist constructs (Gouveia et al., 2002; Pearson & Stephan, 1998). Although much of the

initial research in Latin America and Brazil indicate that the people of this geographical area tend to be collectivist (Gouveia et al., 2002; Oyserman & Lee, 2007), no studies could be found on the fundamental attribution error or on priming for individual or collective selves in Brazil. Furthermore, understanding individualist and collectivist dimensions of Brazil's culture are important for those who work within the mental health field, especially given the fact that most psychologists in Brazil choose applied careers (Hutz, Gomes & McCarthy, 2006; Sexton & Hogan, 1992). Given the increasingly mobile, global and multicultural world in which clinicians must navigate with their clients, and given the APA's (American Psychological Association, 2002) challenge for psychologists to develop multicultural competence, cultural understanding is increasingly necessary.

Such research is now needed to specifically compare cultural differences between Brazilians and Americans in emotional perception, cognition and self-representation. Understanding these differences is critical to facilitate therapy as well as to increase clinicians' multicultural competency in offering sensitive therapeutic approaches (APA, 2002; Corey, 2001).

### Research Questions and Hypotheses

The purpose of this study was to research the emotional perception, cognitive orientation and in-group self-representation of Brazilians and Americans. The study had a twofold purpose. The first was to determine if Brazilians would spontaneously perceive emotions more contextually than Americans. Furthermore, would they categorize more items relationally and offer more collectivist self-representations than Americans? Without being primed, it was expected that Brazilians would display patterns that were similar to other collectivist cultures. The second goal was to examine whether individualist and collective primes would reflect

differences in how Brazilians and Americans responded to assigned tasks. It was expected that when primed with individualist cues, Brazilians would display individualist patterns that were similar to Americans. When primed with collectivist cues, Americans would display collectivist patterns that were similar to Brazilians. Specifically, it was hypothesized that:

*Hypothesis 1: Cartoon emotion task.* (a) Brazilians would interpret the facial emotions of a focal cartoon character based not only on the primary character's emotion, but also based on the context of that focal cartoon. Americans would interpret the facial emotions of a focal cartoon character based mostly on the primary character's emotion. (b) When primed with individualist cues, Brazilians would interpret the emotions of a focal cartoon character based mostly on the primary character (or focal cartoon)'s emotion and not on the context of that focal cartoon. When primed with collectivist cues, Americans would interpret the emotions of the primary, or focal, cartoon character not only based on the focal cartoon's emotion but also on the context of that focal cartoon.

*Hypothesis 2: Nisbett Item Categorization.* (a) Brazilians would categorize objects in more holistic ways (i.e., by functional relationship) than Americans and Americans would categorize objects in more analytic ways (i.e., by characteristic similarity) than Brazilians. (b) When primed with individualist cues, Brazilians would categorize objects analytically as often as Americans, and when primed with collectivist cues, Americans would categorize objects holistically as often as Brazilians.

*Hypothesis 3: Twenty Statement Test.* (a) Brazilians would give more collective self-representations than Americans and Americans would give more individualist self-representations than Brazilians. (b) When primed with individualist cues, Brazilians would offer



as many individualist self-representations as Americans, and when primed with collectivist cues, Americans would offer as many collective self-representations as Brazilians.

*Hypothesis 4: Pen selection task.* (a) Brazilians would choose the pen that represents the majority color from a jar more often than Americans and Americans would choose the pen that has a unique color from a jar more often than Brazilians. (b) When primed with individualist cues, Brazilians would choose the pen that has a unique color as often as Americans, and when primed with collectivist cues, Americans would choose the pen that has the color majority as often as Brazilians.

## CHAPTER 2

### METHOD

#### Participants

Two hundred one undergraduates (101 from Brazil; 100 from U.S.A.) were recruited from three university samples. Participants were either enrolled at a large Brazilian federal university (Universidade de Brasilia), a large Catholic-based university (Universidade Catolica), or a large American state university (University of North Texas). Brazilian participants lived in the metropolitan area of Brasilia, the capital of Brazil, and American participants lived in or near a large metropolitan area in the Southwest (i.e., Dallas-Fort Worth). All participants voluntarily completed the study. All participants signed a consent form for participation, which can be seen in Appendix A.

#### Measures and Instruments

*Puzzle priming instrument.* The priming instrument consisted of three four-piece puzzles. One puzzle was meant to prime individualism, one was meant to prime collectivism, and one was intended to serve as a no-prime, control condition. Participants were randomly assigned to either the control condition or to a condition which was theoretically the opposite of their culture. In other words, they were asked to complete either a neutral puzzle or a counter-cultural prime. The first puzzle was a photograph of an athlete crossing a finish line with words across the picture that were thought to be related to individualism: *realização, único* and *sucesso* (these were presented in Portuguese, as this puzzle was used as a counter-cultural prime for the Brazilian group, but as a note to readers these translate to *achievement, unique, and success* in English). The second priming puzzle was a photograph of an extended family eating leisurely at a dinner table with words across the photograph that were thought to be related to collectivism:

*harmony, community and relationships.* This puzzle was used as a counter-cultural prime for the American group and was intended to activate participants' collective self. The third puzzle was used as a no-prime condition for both Brazilians and Americans and consisted of two triangles. The use of images to as a prime has been well documented and found to be effective (Oyserman & Lee, 2007) especially when images are related to strong cultural icons (Benet-Martinez, Leu & Lee, 2002). The counter-cultural primes for this study were purchased and downloaded from a stock photo website *www.istockphot.com* so as to not infringe on any copyright issues. These were developed by the researcher for this specific study and no previous validity or reliability data are available, although these were addressed in the discussion (see Appendix B).

*Cartoon emotion task.* A total of nine cards were created by the author to evaluate participant's perception of emotion and context. The figures depicted five cartoon figures that were intended to be ethnically familiar to both Brazilian and American cultures and were in part a replication of a previous study utilizing stimuli for emotional perception (Masuda et al., 2008).

The Masuda et al. (2008) emotion judgment task used 56 different pictures that varied in ethnicity and emotional expression of focal and background characters. The combination of factors was: 2 (ethnicity of focal figures) x 7 (focal figures emotional expressions, including moderate and intense emotions) x 4 (emotion of background figures). For the purpose of the current study, only the intense, happy focal figure with differing emotional figures in the background were used because they produced statistically significant results in the original study and were of interest for further investigation. The first set of figures was of the happy focal figure with 1. happy background figures, 2. sad background figures, 3. angry background figures and 4. neutral background figures (see Appendix C). For each card, participants received the following instructions:

Your task is to judge the middle person's emotion from their facial expressions. We ask you to rate the emotion on a 10-point scale. First please rate the middle person's degree of anger. Second, please rate the middle person's degree of sadness. Third, please rate the middle person's degree of joy. (Masuda et al. 2008, p. 370)

The second set of figures was used as a control to validate previous figures' emotional expression. Participants were shown five cards: 1. the happy target figure without the background figures and background figures depicting 2. happy, 3. sad, 4. angry and 5. neutral emotions without the focal figure (see Appendix D). This step ensured that the pictures invoked the correct emotional interpretation from participants. For each of these cards, participants were given the previous instructions, but were asked, to "... rate the *person's* degree of anger. . . sadness. . . and joy" and to "... rate the *people's* degree of anger. . . sadness. . . and joy." Scores ranged on a 10-point Likert-type scale from 0 (*not at all*) to 10 (*completely true*). Participants correctly identified emotional expressions on all five cards to a high degree (above a mean of 8 except for neutral background figures; see Table 1 for a summary).

*Nisbett Item Categorization* (Nisbett, 2003). The Nisbett Item Categorization is a 12-item task that asks participants to indicate which two of three words are most closely related to each other. Four of the twelve questions are "filler" items. The items were read and then scored as either holistic (by their functional relationship) or analytically (by object similarity). For example, participants heard the words, "seagull," "sky," "dog," and then were asked to indicate which two items were most closely related. The response seagull-sky was coded as a holistic response (collectivist) because of their functional relationship to each other (the seagull flies in the sky). The response seagull-dog was coded as analytic (individualist) because both words were categorically similar to each other (they are living things). Similarly, when asked which

two items are most closely related to each other, “farmer,” “corn” and “bread,” the response, “farmer-corn” (the farmer plans corn) was coded as holistic but the response, “corn-bread” was coded as analytical (corn and bread are types of food).

A summary score was calculated by subtracting the number of analytic responses from the number of holistic responses. A positive score indicated participants who rated more holistic responses, whereas a negative score indicated those who rated higher analytical responses. This measure has consistently shown a distinct pattern of responses for participants with individualist or collectivist worldviews (especially East Asia) and is commonly used in the field of social psychology (Nisbett, 2003; Nisbett, Peng, Choi & Norenzayan, 2001; Zhang & Nisbett, 2004;

*Twenty Statement Test* (TST; Kuhn & McPartland, 1954). The TST is a projective measure that has been regularly used to collect information regarding individual and collective self-representations in cross-cultural studies. It has been used to study differences between aboriginal and European New Zealanders (Altrocchi & Altrocchi, 1995), the U.S.A. and East Asia (Triandis, McCusker & Hui, 1990), and Israelis living in kibbutz and urban areas in Israel (Somech, 2000). Furthermore, the TST has been used to evaluate the efficacy of priming the collective or individual self in a monocultural (Brewer & Gardenr, 1996) and cross-cultural settings (Trafimow, Triandis & Goto, 1991).

This measure allowed participants to self-generate responses to the question, “Who am I?” Participants were asked to complete twenty statements which begin with the words, “I am...” The statements were content analyzed and scored according to Kuhn and McPartland (1954) as either consensual or subconsensual. Statements that described and offered demographic information, inclusion into social groups or were identified by a social role were coded as consensual. These were aimed to identify collective self-representation tendencies of

participants. Subconsensual statements were related to personal qualities, attitudes and beliefs which generally place him or her relative to others. These were aimed to identify individualist self-representations. For example, “I am a student” was scored as consensual (collective) because it identified one’s social role as a student. However, “I’m a good student” was scored as subconsensual (independent) because it created a position in the social group and a personal quality or attribute (good).

The TST was scored by two independent bilingual coders who were blind to which condition the participant was assigned. An intraclass correlation coefficient was used to determine the agreement between the two raters for each 20-question participant response. Very good agreement was found (intraclass correlation coefficient,  $\rho_I = .83$ ) between the two raters for this study. A summary score was calculated by taking the mean of the two coder’s score for collectivist and individualist responses.

*Pen selection task* (Kim & Markus, 1999). This task was intended to replicate a study by Kim and Markus (1999) in which they found that when given a choice, East Asians tended to choose the pen color which was in the majority more often than Americans. For example, when presented with four orange pens and one green (or vice-versa), East Asians tended to choose a pen from the majority color (i.e., orange), whereas Americans tended to chose a minority-colored pen (i.e., the green) more often. Such a study showed that each culture’s value, either to conform or stand out was reflected in the participant’s choice of pens.

For this study participants were asked to choose one of five pens in a jar as a gift for participation. Because green was the school color the American-participant group and also a color of the Brazilian national flag, grey and maroon pens were thought to stand out less. The grey and maroon pens were both black-ink ball-point and were exactly alike except in color. The

pens were randomized when presented to participants; that is, sometimes participants were given a choice of one maroon and four grey pens and vice-versa. To eliminate the possibility that participants might not choose the minority color pen because it might be the last one, a transparent bag with maroon and grey pens were in full view of the participant as they made their choice. No color preference was found (see Table 2).

The demographic questionnaire (see Appendix E), the TST and the Nisbett Item Categorization were translated into Portuguese by the back-translation method (Brislin, 1970). First, items were translated into Portuguese by a bilingual individual. Then another bilingual individual translated the items into the English language. Both translated the documents independently and were compared for consistency and assessed for quality of the translation. No significant discrepancies were found in the content and meaning of both languages.

#### Procedure

Because it was important to the study that participants be unaware of the outcome or dependent variables, they were told at the beginning that they were participating in the initial stages of the development of children's educational materials. The nature of the puzzle, word categorization, cartoon emotion characters, sentence completion and prizes were consistent with a children's theme. If participants knew that the puzzle was intended to prime their individualist and collectivist selves, they might have been more (or less) inclined to respond to the following tasks in ways that were consistent with their culture, thus posing an internal validity problem.

After the initial explanation about the study and overview of the consent form, participants were given a written demographic questionnaire. Both American and Brazilian participants were randomly assigned to one of two conditions: a no-prime condition and a counter-cultural prime condition. In the no-prime condition, American and Brazilian participants

assembled the geometric figure puzzle. In the counter-cultural prime condition, American participants assembled the family scene puzzle, and the Brazilian participants assembled the individual winning a race puzzle. Thus, the design was a 2 (prime: no-prime, counter-cultural prime) x 2 (culture: Brazil, U.S.A.) factorial design.

After participants assembled the priming puzzle, they were asked to verbally describe the figure they had just composed as a way to strengthen the priming effect. After this, participants were given the cartoon emotion task cards, the Nisbett Item Categorization task and the TST, in randomized order. When completed, participants were offered a pen as a gift to take with them for their efforts, thus completing the pen selection task. They were then questioned to see if they suspected any connection between the tasks, told the original purpose of the experiment and given a brief description of the study to take with them if they wished (Appendix F).

Two different evaluators, one young female graduate student and another young male graduate student conducted the study in Brazil and the U.S.A., respectively.

#### Plan for Hypotheses Tests

Each hypothesis was designed to evaluate if (a) there were significant differences between Brazilians and Americans in emotional perception, and cognitive and social orientation without priming and (b) if counter-culture priming would significantly alter participants' responses on the same measures.

To test the first hypothesis, four 2 (culture: Brazil, U.S.A.) x 2 (prime: no-prime, counter-cultural prime) ANOVAs were conducted for the emotional rating of happiness in each of the four cards on the emotion cartoon task (cartoon background figures' emotion: angry, sad, happy, neutral). Statistically significant main effects for culture would indicate differences between Brazilians' and Americans' pattern of responses whereas statistically significant interaction



effects (culture x prime) would be indicated by counter-culture priming effects on Brazilians and Americans.

To test the second and third hypotheses, a 2 (culture: Brazil, U.S.A.) x 2 (prime: no-prime, counter-cultural prime) ANOVA was conducted with the summary score of the Nisbett Item Categorization as the dependent variable for the second hypothesis, and the number of individualist self-representation responses used as the dependent variable for the third hypothesis. Statistically significant main effects for culture would be indicated by differences between Brazilians' and Americans' pattern of responses whereas statistically significant interaction effects (culture x prime) would be indicated by counter-culture priming effects on Brazilians and Americans.

To test the fourth hypothesis, two chi-squares were performed to determine differences in the categorical variable of pen selection preference. One analysis aimed to look at Brazilian and American pen selection preferences without counter-culture priming while the other took such priming into account. An a priori power analysis indicated that for this study, small to medium effect sizes ( $ES = .10 - .25$ ; Cohen, 1992) could be detected at  $p = .05$  with high power levels (power = .80).

## CHAPTER 3

### RESULTS

#### Demographic and Descriptive Analysis

The variable distributions were examined for outliers and normality. There were no unexpected or unusual patterns of responses. Additionally, at this time, it was determined that the assumptions of normality and homogeneity of variance were met as necessary for further analyses. Descriptive information will be given for both the sample and the measures.

*Participants.* The mean age of all participants was 20.2 years ( $SD = 3.3$ ,  $n = 201$ , 95% CI [19.7, 20.7]). The sample consisted of more women than men; 60.7 % were females ( $n = 122$ ; age  $M = 20.0$ ,  $SD = 3.3$ , 95% CI [19.4, 20.6]) and 39.2 % were males ( $n = 79$ ; age  $M = 20.41$ ,  $SD = 3.3$ , 95% CI [19.7, 21.1]). Most participants were single (95%,  $n = 190$ ) and rated themselves as middle-class (87%,  $n = 175$ ). There were no significant differences between the Brazilian and the American samples for age, socio-economic status, or marital status ( $t[199] = .76$ ,  $p = .44$ ;  $t[199] = .78$ ;  $p = .44$ ;  $\chi^2 [1, N = 201] = 69$ ,  $p = .71$ , respectively).

Most Brazilians reported living in urban environments (92%,  $n = 92$ ) whereas a large proportion of the American sample reported living in either suburban (68%,  $n = 68$ ) or urban environments (28%,  $n = 28$ ; see Table 3).

Three Brazilian participants did not complete information regarding their racial status. A small proportion of Americans rated themselves as multiracial (6%,  $n = 6$ ). In contrast, multiracial Brazilians comprised almost half of the Brazilian sample (48%,  $n = 47$ ). Fifty-six percent ( $n = 56$ ) of the American sample rated themselves as racially white and 31% of Brazilian participants reported they were white ( $n = 31$ ; see Table 3 for more details regarding race).

*Measures.* For the Cartoon Emotion Task, the mean participant happiness rating of the happy target figure with 1. happy background figures was 8.3 ( $SD = 1.7, n = 201, 95\% \text{ CI } [8.1, 8.5]$ ), 2. sad background figures was 8.1 ( $SD = 1.7, n = 201, 95\% \text{ CI } [7.9, 8.3]$ ), 3. angry background figures was 8.1 ( $SD = 1.8, n = 201, 95\% \text{ CI } [7.9, 8.4]$ ), and 4. neutral background figures 8.1 ( $SD = 1.8, n = 201, 95\% \text{ CI } [7.9, 8.4]$ ; see Table 4). On average, participants scored 4.4 ( $SD = 0.3, n = 201, 95\% \text{ CI } [4.36, 4.44]$ ) more holistic responses than analytical responses on the Nisbett Item Categorization task (see Table 5). The mean independent self-representation score as reflected by the TST was 16.4 ( $SD = 3.6, n = 199, 95\% \text{ CI } [15.9, 16.9]$ ; Collective scores = 3.5,  $SD = 3.6, 95\% \text{ CI } [3.5, 3.6]$ ; see Table 6). Seventy percent ( $n = 141$ ) of participants chose the majority color pen (30%,  $n = 60$ , chose the minority color pen; see Table 7).

*Relationships between sample characteristics and measures.* Bivariate correlations, point-biserial correlations and chi-square analyses revealed few significant but weak relationships among demographic, independent and dependent variables. It was found that those who chose the majority color pen tended to respond in more collective ways on the TST ( $r_{pb} [200] = .19, p = .01$ ) and tended to spend less time on the priming puzzle ( $r_{pb}[200] = -.18, p = .01$ ) than those who chose the minority color pen. Women tended to choose the minority color pen ( $\chi^2 [1, N = 201] = 7.3, p < .01$ ) and also tended to describe themselves with lower social-economic status ( $r_{pb}[200] = -.18, p = .01$ ). Environment (urban, suburban and rural) also appeared to have significant relationships with culture, puzzle time and responses on the Nisbett Item Categorization task and the TST. The majority of participants who reported living in urban environments tended to live in Brazil ( $r_{pb} [200] = .59, p < .001$ ), spent more time completing the priming puzzle ( $r[199] = -.17, p = .02$ ), gave more holistic responses on the Nisbett Item Categorization task ( $r[199] = -.21, p = .003$ ) and gave more collective self-representations

( $r[199] = .30, p < .001$ ; see Table 8). However, partial correlations, with culture as a control, revealed that the significant relationships between environment and dependent measures were due to culture—not environment (see Table 9). Therefore, environment was not entered as a covariate for hypotheses.

### Hypothesis Testing

*Hypothesis 1: Cartoon emotion task.* It was hypothesized that (a) Brazilians would interpret the emotions of a focal cartoon character based not only on the cartoon's emotion, but also by observing the context of that focal cartoon. It was hypothesized that Americans would interpret the facial emotions of a focal cartoon character based mostly on the cartoon's emotion and not on the emotions of background figures. For example, it was expected that when shown a focal figure that was happy, Brazilian participants would rate the focal figure just as happy as Americans. However, when the focal figure was presented with sad background figures, Brazilian participants would rate the focal figure's degree of happiness lower than Americans participants. Secondly it was hypothesized that (b) those Brazilians primed with counter-cultural cues would interpret the emotions of a focal cartoon character based mostly on the focal cartoon's emotion and not on the contextual emotion cue of background figures. It was hypothesized that Americans primed with counter-culture cues would take into consideration background figures when rating the focal figures' emotion.

Four 2 (culture: Brazil, U.S.A.) x 2 (prime: no-prime, counter-cultural prime) ANOVAs were conducted, with the participants' ratings of the focal figure's happiness score as the dependent variable. Three culture main effects were found revealing that Brazilians reported lower happiness ratings ( $M = 7.7, SD = 1.6, n = 101, 95\% \text{ CI } [7.4, 8.0]$ ) than Americans ( $M = 8.5, SD = 1.8, n = 100, 95\% \text{ CI } [8.2, 8.9]$ ;  $F[1,196] = 10.1, p = .001, \eta^2 = .049$ ) when presented

with sad background figures; lower happiness ratings ( $M = 7.8$ ,  $SD = 1.8$ ,  $n = 101$ , 95% CI [7.5, 8.2]) than Americans ( $M = 8.5$ ,  $SD = 1.6$ ,  $n = 100$ , 95% CI [8.2, 8.8];  $F[1,196] = 7.9$ ,  $p = .006$ ,  $\eta^2 = .038$ ) when presented with angry background figures; and lower happiness ratings ( $M = 7.7$ ,  $SD = 1.8$ ,  $n = 101$ , 95% CI [7.4, 8.1]) than Americans ( $M = 8.5$ ,  $SD = 1.8$ ,  $n = 100$ , 95% CI [8.2, 8.9];  $F[1,196] = 9.0$ ,  $p = .005$ ,  $\eta^2 = .044$ ) when presented with neutral background figures. There were no significant differences in how Brazilians and Americans rated the focal happy figure with a happy background ( $F[1,196] = 2.5$ ,  $p = .063$ ). The first part of this hypothesis revealed significant differences that had small to medium effect sizes (see Table 10 & Figure 1).

An interaction effect for culture (Brazil, U.S.A.) and priming condition (prime, counter-cultural prime) was not found and revealed that counter-cultural primes did not have a statistically significant impact on the way Brazilians and Americans perceived the emotion of a focal cartoon character (see Table 10).

*Hypothesis 2: Nisbett Item Categorization.* It was hypothesized that (a) Brazilians would categorize objects in more holistic ways (i.e., by functional relationship) than Americans and Americans would categorize objects in more analytic ways (i.e., by characteristic similarity) than Brazilians. (b) When primed with individualist cues, Brazilians would categorize objects analytically as often as Americans, and when primed with collectivist cues, Americans would categorize objects holistically as often as Brazilians.

The results of a 2 (culture: Brazil, U.S.A.) x 2 (prime: no-prime, counter-cultural prime) ANOVA found a significant main effect for culture ( $F[1, 196] = 6.0$ ,  $p < .01$ ,  $\eta^2 = .03$ ) revealing that Brazilians categorized objects in more holistic ways ( $M = 5.1$ ,  $SD = 3.7$ ,  $n = 100$ , 95% CI [4.4, 5.8]) than Americans ( $M = 3.6$ ,  $SD = 4.4$ ,  $n = 100$ , 95% CI [2.7, 4.5]). This difference had a small to medium effect size (see Table 11).

A marginal interaction effect for culture (Brazil, U.S.A.) and priming condition (no-prime, counter-cultural prime) was found ( $F[1, 194] = 3.9, p = .051, \eta^2 = .02$ ). The Brazilian no-prime group was the one most likely to categorize objects holistically and the American no-prime group to categorize objects analytically. When exposed to cross-cultural primes, the Brazilian counter-cultural prime group tended to categorize objects analytically and thus more like Americans would. When Americans were exposed to cross-cultural primes they responded in more holistic ways (see Table 11 and Figure 2).

*Hypothesis 3: Twenty Statement Test.* It was hypothesized that (a) Brazilians would give more collective self-representations than Americans and Americans would give more individualist self-representations than Brazilians. (b) When primed with individualist cues, Brazilians would offer as many individualist self-representations as Americans, and when primed with collectivist cues, Americans would offer as many collective self-representations as Brazilians.

The results of a 2 (culture: Brazil, U.S.A.) x 2 (prime: no-prime, counter-cultural prime) ANOVA found a significant main effect, but not in the hypothesized direction, for culture ( $F[1, 195] = 24.0, p < .001, \eta^2 = .11$ ) indicating that Brazilians gave more individualist self-representations ( $M = 17.6, SD = 3.3, n = 100, 95\% \text{ CI } [17.0, 18.3]$ ) than Americans ( $M = 15.3, SD = 3.5, n = 99, 95\% \text{ CI } [14.6, 16.0]$ ). No significant interaction effects were found for culture and prime ( $F[1, 195] = .14, p = \text{ns}$ ; see Table 12 & Figure 3).

*Hypothesis 4: Pen selection task.* It was hypothesized that (a) when given a choice of five pens, Brazilians would choose the pen that represents the majority color more often than Americans, and Americans would choose the pen that has a unique color more often than Brazilians. It was also hypothesized that (b) when primed with a counter-cultural prime,

Brazilians would choose the pen that has a unique color as often as Americans and that Americans would choose the pen that has the color majority as often as Brazilians.

The results of a 2 (culture: Brazil, U.S.A.) x 2 (prime: no-prime, counter-cultural prime) chi-square revealed no significant differences in the pen choice patterns of American participants (37.8% chose the majority color; 11.9% chose the minority color) or Brazilians (32.2% chose the majority color; 17.9% chose the minority color;  $\chi^2 [1, N = 201] = 3.3, p = .07$ ; see Table 13).

No interaction effect for culture (Brazil, U.S.A.) nor priming condition (no-prime, counter-cultural prime) of pen-choice patterns was found ( $\chi^2 [3, N = 201] = 4.1, p = ns$ ) between Brazilian no-prime (majority = 15.4%; minority = 10.0%), American no-prime (majority = 18.4%; minority = 6.4%), Brazilian counter-cultural prime (majority = 16.9%; minority = 8.0%) or American counter-cultural prime (majority = 19.4%; minority = 5.4%) groups (see Table 14 & Figure 4).

## CHAPTER 4

### DISCUSSION

This study took varied perspectives in assessing the individualism-collectivism construct by analyzing patterns of self-representations, cognitive categorization and emotional perception when attending to context of Brazilian and American college students. These assessments were influenced by earlier studies which have proven useful when addressing cultural differences between individualist and collectivist cultures (Kim & Markus, 1999; Kuhn & McPartland, 1954; Masuda et al., 2008; Nisbett, 2003). The study had a twofold purpose. First, it was hypothesized that Brazilians would spontaneously offer more collectivist self-representations, categorize more items relationally and perceive emotions more contextually than Americans. Second, it was hypothesized that when Brazilians and Americans were primed with counter-cultural cues, Brazilians would display individualist patterns that were similar to Americans and Americans would display collectivist patterns that were similar to Brazilians.

Two of the four hypotheses were supported. In general, significant differences were related to culture but not counter-cultural primes. Results indicated that Brazilian participants categorized objects in more relational ways (hypothesis 2a) and reported lower happiness ratings for a focal figure when the figure was surrounded by non-happy figures (hypothesis 1a). There were some exceptions to this general pattern of findings, though. For example, there was a marginal effect for counter-cultural priming in the Nisbett categorization task. Additionally, there was an unexpected statistically significant finding, which was in the opposite direction of what was predicted. Contrary to the original hypothesis, Brazilian participants tended to offer more individualist self-representations than American participants (hypothesis 3a). Finally, no significant differences were found for pen preference (majority or minority color; Hypothesis 4a).



## Emotional Perception: Discussion and Limitations

Brazilian participants tended to rate lower happiness for a focal figure when the figure was surrounded by non-happy figures than American participants. For example, when the happy focal cartoon figure was surrounded by other happy figures, Brazilian and American participants rated similar levels of happiness. When the focal happy figure was surrounded by sad, angry or happy figures, Brazilians participants rated the focal figure as less happy. This is consistent with the findings of Masuda and colleagues (2008) that compared collectivist (Japanese) and individualist (American) cultures.

This may mean that Brazilians pay greater attention to context, especially as it relates to the larger emotion and social environment. It is also consistent with previous findings that Brazilians acknowledge that context and environment play a role in people's behavior (Vincent, 2003) and that Brazilians tend to take into account how an outcome might influence others (Pearson and Stephan, 1998).

The validation of the emotion cartoons should also be noted as acceptable. Both sample groups responded in ways that were similar to Masuda and colleagues (2008) even though the cartoon pictures were created specifically for this study and were different than those created by Masuda and his colleagues. Secondly, the base rate for the emotions of cartoons between the two samples were similar for each figure and group when shown separately. Participants identified the intended emotion to a high degree for each figure and group. Furthermore, the differences in emotion ratings occurred only in the cards in which the focal figure and background figures were incorporated. There is one exception to this; Brazilian participants rated higher level of sadness on the validation card that showed only angry background figures.

This may imply that Brazilians perceive sadness and anger as emotions that are highly related to each other.

#### Cognitive Orientation: Discussion and Limitations

Brazilian participants organized objects in more relational ways than American participants, who tended to classify objects in more categorial ways. For example, when asked to indicate which two words were most similar to each other from the word lists that included the items: monkey, panda and banana, Brazilians tended to spontaneously organize objects in more relational ways (choosing “monkey” and “banana”) than American participants. This result supports the findings of Nisbett (2003) and Ji, Zhang, and Nisbett (2004).

One should note, however, that a small to medium effect size was found for this particular analysis. Although such an effect size can be important, it reflects that American participants also organized objects in relational ways more often than in categorical ways, but that Brazilian participants simply did so more often.

#### Self-representation: Discussion and Limitations

The third hypothesis resulted in an unexpected finding; Brazilian participants gave fewer responses based on social roles and more responses that were related to personal qualities, attitudes and beliefs than American participants. This finding diverged from previous literature that stated that Brazilians tend to be more collectivist (Gouviea et al., 2002; Oyserman & Lee, 2007). There are several possibilities for this unexpected finding.

Even though the TST has been used extensively in cross-cultural studies to identify self-orientation and self-representation and has consistently shown that collectivists give more responses related to social roles when defining the self (Altrocchi & Altrocchi, 1995; Brewer & Gardner, 1996; Somech, 2000; Triandis, McCusker & Hui, 1990; Trafimow, Triandis & Goto,

1991), there may be variability in the use of the verb “to be” of the TST. In Portuguese, the statement “I am...” can be translated in two ways: either as “Eu sou...” or “Eu estou.” “Eu sou...” is related to a state or identity such as “I am a daughter” or “I am pretty.” In the second form of the translation, “Eu estou...” is related to a temporal condition such as the response of one American participant, “I am hungry,” or “I am tired.” The first form of the translation (“Eu sou...”) was used because the intention was to access participants’ self-views of state and identity, not temporal condition. This discrepancy in language may have made participants more likely to think about their own personal qualities.

Second, Brasilia may not be a city that is representative of the Brazilian population after all. It was originally thought that Brasilia that would service as Brazil’s “microcosm.” However, because it is a city that is relatively new, its social hierarchy, cultural groups and regional identity as a city may yet be forming. What this means too, is that even though the demographic population of the city represents individuals from all regions and varying social status of Brazil, migration to the city may have had a significant impact in how individuals view themselves in relation to in-groups and out-groups. The process of migrating in many cases means leaving behind extended families in other states, leaving regional in-groups and making a new life for oneself. Identifying with in-groups, important for collectivist cultures, has been observed as important for social survival in Brazil (Gouveia, de Albuquerque, Clemente, & Espinosa, 2002) but may not be effective in this new environment. This process may have weakened the sense of group belonging and might have made these individuals rely more on internal characteristics for urban survival rather than rely on social connections which may be no longer existent.

Characteristics such as having to depend on personal abilities and achievement (Oyserman,

Coon, & Kemmelmeier, 2002) to survive, and living in more nuclear families (Hofstede, 1980), are more consistent with individualist cultures.

Third, the process of entering the universities from which the sample data was collected is a highly competitive process (Hutz, Gomes & McCarthy, 2006). It is possible that those with an orientation toward competition and achievement, thus more individualistic, were more likely to finalize their university entry.

#### Pen Selection: Discussion and Limitations

No significant differences were found in pen selection. That is, there were no differences in preference between Brazilian and American participants who were asked to choose one of five pens in a jar (one of one color, four of another color). This task was intended to replicate a study by Kim and Markus (1999) in which they found that when given a choice, collectivists (East Asians) tended to choose the pen color which was in the majority more often than individualists (Americans). There are several possible reasons for this outcome.

First, there were methodological slight differences in the replication of this study. Kim and Marcus (1999) randomized several different pen choice possibilities. As in the current study, they had participants choose one pen from five pens. However, in Kim and Marcus' study, sometimes the minority color was two pens of the same color, not one. Furthermore, the pens that were used for this current study were of a different color than the original study (which was orange and green). Although there were no differences in color preferences between the grey or maroon pens in the current study, this may have contributed to the lack of replication. Grey and maroon pens were chosen because it was thought that participants might be inclined to choose the green pen, since green was the American university school color and also a significant color of the Brazilian flag. Further, the data collected in the U.S.A. and in Brazil

were done by two separate individuals. Although both were trained to conduct the study in a similar form, there may have been unintentional collection differences.

Second, the pen task may not have been a task that was reliable or sensitive enough to pick up on differences for Brazilians. Because there may be different types of collectivism (Gelfand, Triandis, & Chan, 1996; Triandis, 1996), choosing a majority or minority pen color might tap into another domain of collectivism which is not present in Brazilian university students. Even though this task did not reveal a significant result, there may be merit in further investigation of using this task to measure individualist and collectivist constructs. A relationship was found, albeit very weak, between choosing majority pens and offering more collective self-representations.

#### Priming: Discussion and Limitations

The use of counter-cultural primes had little carry-over effect on unrelated tasks that were aimed to assess individualism and collectivism. The purpose of using a counter-cultural prime was to increase or decrease the likelihood that participants would experience either their individualist or collectivist selves.

Only one task showed a marginal carry-over effect of priming. Those Brazilian participants who were asked to complete the counter-culture puzzle (runner crossing the finish line) tended to organize objects in more categorical ways than those completing the control puzzle (two triangles). Similarly, American participants tended to organize objects in more functional relationships when shown the counter-culture puzzle (large family sharing dinner) than those American participants who completed the control puzzle.

One other result, not significant but of interest, revealed that Brazilian participants exposed to counter-cultural primes judged the focal cartoon's level of happiness when

surrounded by non-happy figures slightly higher than the Brazilian control group. American participants exposed to counter-cultural primes judged the focal cartoon's level of happiness when surrounded by non-happy figures slightly lower than the American control group. It should be emphasized that assumptions cannot be made regarding if the counter-cultural prime had an effect on participant's judgment of emotion.

One likely reason for these findings is that the counter-cultural prime was not strong enough for participants to experience or connect with their individual or collective selves. Although photographs and icons have been used in the past as primes with some level of impact (Hong, Morris, Chiu and Bennet-Martinez, 2000), this may not have been the case with this particular study. Participants may have focused more on completing the puzzle rather than on the resulting image. Even asking the participant to describe the image may not have been enough to activate collective or individual selves.

#### General Discussion

The four tasks asked of participants could potentially be categorized into two groups: recognition of contextual relationships and recognition of in-groups and out-groups. For example, choosing the monkey-banana dyad required a participant to think of objects for their functional relationships. Likewise, rating a happy focal figure as less happy when surrounded by sad background figures requires a participant to think of the relationship between focal and background figures. Choosing a pen or creating self-representation statements does not require this type of thinking. A grey pen is not in relationship with a maroon pen. Creating a self-statement does not necessarily require thinking about a relationship with the next statement but requires introspection. It is especially interesting that the self-representation task and the pen choice task are both related to recognizing in-groups and out-groups, either as within self or

projected by an object. These findings suggest Brazilian university students are particularly keen at picking up on relationship patterns and attending to context while still recognizing their personal attributes which make them unique.

Because not all cultures are the same, it should be expected that not all assessments and tasks for the individualism-collectivism construct will have similar results across cultures. Asian collectivist cultures likely display a different type of collectivism than Latin Americans (Triandis, 1996). Triandis' (1995) model of introducing the concept of vertical and horizontal dimensions to the individualism-collectivism construct can be useful in explaining some of these results. It might be hypothesized that Brazilians fall somewhere between horizontal individualist and horizontal collectivist cultures. This would explain the results of the TST where personal uniqueness is emphasized (Horizontal individualism: What makes me different from others?) and value is placed on cooperation (Horizontal collectivism: What might be good for our group? Strong identification with their in-group). However, vertical dimensions such as achievement orientation or self-sacrifice do not appear to fit with Brazilian participants' responses.

#### Clinical Implications

Understanding an individual's worldview and cultural orientation is paramount for the psychological treatment of diverse populations and for the development of clinician's multicultural competence (APA, 2002). Such understanding has not only been useful for American psychotherapists to offer culturally sensitive therapeutic approaches (Comas-Diaz, 1994; Kuo, 2004), but also for native psychologists, such as those practicing in Brazil, to adjust Western-oriented therapies and offer culturally relevant services (Sexton & Hogan, 1992).

Although initial research indicated that Latin Americans tend toward collectivism (Oyserman & Lee, 2007), there is a lack of studies applying individualist and collectivist

constructs that are conducted with the Brazilian population (Gouveia et al., 2002; Pearson & Stephan, 1998). This study aimed to shed light on the worldview of Brazilian and American college students to assist clinicians as they formulate a culturally sensitive therapeutic practice.

One should note that Brazil is a very large country, with an extremely diverse population. There are segments of the Brazilian population that may lean towards collectivism and others that may identify more closely with an individualist worldview. This study focused only a very specific stratus of the Brazilian population— a predominately a young, middle-class and educated population. Therefore, any clinical implications are generalizable for Brazilian and American college students. Also, one should note that there was variability within the sample and that not all Brazilian or American college students share exact same worldviews. Breaking cultural barriers stems from a clinician's ability to listen and welcome differences (Corey, 2001) and treating each client as having a unique individual and cultural history.

It is interesting to note that Brazilians and American participants did not lean completely towards individualism or collectivism. This demonstrates the complexity that exists in studying cultural constructs. One important issue for Brazilians may be the juxtaposition of one's own personal desires with what might be expected from them given social contexts and environmental expectations. Because the results of this study showed Brazilian participants tend to name self-representations that are internally focused, they may seek out therapies that are insight-oriented and focused on the self.

The results of this study also showed that Brazilians are also keen observers of their social context. In particular they may be sensitive to people's emotions and how these emotions are influenced by environment. Such a skill may show contextual flexibility on the part of Brazilians. They may possess the ability to note that different environments elicit different



responses in behavior and emotion. Furthermore, adapting one's behavior to environmental cues allows individuals to display culturally appropriate behaviors, which is known as cross-cultural code-switching (Molinsky, 2007). These characteristics are consistent with previous observations (Vincent, 2005). Such flexibility is adaptive, but in extreme situations may hinder an individual's ability to have a consistent sense of self in different contexts (too much flexibility) or may difficult the adaptation to new environments (too rigid).

The results of this study also showed that participants tended to focus on an objects' relationship rather than on their categorical qualities. Such a focus on relationship qualities, even within objects, may indicate a cultural value related to interpersonal relationships (such as family and friends).

Because of the results of these studies, therapists may wish to consider a few specific factors when working with Brazilian clients. First, therapists who encounter individuals with this cultural orientation may wish to focus their treatment on understanding the individual's qualities and personal strengths so that they may gain a clear idea of what inner resources might be useful in coping with their existing difficulties. Second, such therapists may also see a need to work with their clients on the amount of social influence others may have on them and their behavior. It may be important for these clients to evaluate how in tune they are with their environment and much they will allow context to play a role in their behavior and emotions. Third, a focus in a therapist's treatment plan may be on maintaining relationships with friends and family without losing a sense of self. Such clients may not necessarily prioritize goals and achievements at first.

The results of this study may also help explain the proliferation of some schools of psychology in Brazil. Vygotsky's sociocultural theory is widely taught as an academic

foundation at university settings (Hutz, Gomes & McCarthy, 2006). This theory stresses the influence of society and environment on human development. A large percentage of psychologists in Brazil choose applied psychology for their careers rather than research or academic careers and most students choose a theoretical orientation during their internship experience (Hutz, Gomes & McCarthy, 2006; Sexton & Hogan, 1992).

Schools of psychotherapies that have a focus on the self and insight abound in Brazil—particularly psychoanalysis (E. Carvalho & A. Monteiro, personal communication, November 1, 2011). Therapies that value interpersonal relationships have also found a niche in Brazil. Such values as family and friends have been observed by researchers (Vincent, 2003) and may explain why family therapy, particularly family systems therapy (E. Carvalho & A. Monteiro, personal communication, November 1, 2011), has been so successful in Brazil. Because of the focus on relationships and the resulting individualist self-representations, therapists may also wish to approach such clients in collaborative relationships, rather than lean on client-therapist relationships that are authoritative. Although Behaviorism is often a strong orientation in the academic and research circles (Hutz, Gomes & McCarthy, 2006; Sexton & Hogan, 1992), it has had a mild impact for applied psychologists in Brazil.

#### General Limitations

There are some general, statistical and methodological limitations of this study that are important to note. Brazilian students may display more individualist characteristics than the rest of the Brazilian population. The entrance process into a Brazilian university is generally a highly competitive process, and perhaps those students willing to compete for few slots use their more individualist selves to negotiate with this competitive environment. Brasilia, as a city, may be a more individualist city from the rest of Brazil and thus there may have been selection bias in

choosing this city. Such individualist patterns may be related to migration from other parts of Brazil. Another limitation may have been the translation of materials. Although the translations did not lose their meaning when translated back from Portuguese to English, the TST may have suffered some discrepancy in verb meaning as mentioned previously. The two country sample data were collected by two different researchers—one mono-cultural American male and one bicultural female. This may have influenced the responses of participants, especially when Brazilian participants were asked to participate in a cross-cultural study that was related to the United States.

One should keep in mind that small to medium effect sizes were found in the Nisbett Item Categorization and the Cartoon Emotion Task. This means that Brazilian and American participants did not respond in opposite or polar ways. For example, Brazilian participants gave more relational responses on the Nisbett Item Categorization, but this does not mean that American participants gave more analytical responses. It means that American participants gave less relational responses than Brazilians, but generally gave more relational responses than analytical ones.

Because the purpose of this study was to explore Brazilians and Americans in a laboratory setting, serving as an initial study of cultural constructs of individualism and collectivism between Brazil and the U.S.A., the implications of this study cannot be generalized to the Brazilian or American population. At most, it serves to illustrate the complexity of studying cultural constructs, especially given migratory patterns and globalization of today's world.

#### Future Research

Researchers in the future should continue to explore and investigate cultural constructs

from within laboratory and etic means and move towards emic and culture-centered perspectives to gain a full understanding of how Brazilians fall within the individualist and collectivist frameworks. It will be important to expand samples from university students in order to have population variability. In Brazil, it will be especially important to take into account regions, socio-economic level of participants and rural and urban environments. Researchers in Brazil should use standardized measures of collectivism and individualism previously developed and seek to engage collaborative work with international partners.

Future researchers may wish to focus on how Brazilians view emotion and how they attend to context. Further research is needed to confirm and understand the discrepancy of how Brazilians are able to be attuned to relationships and context and yet offer individualist self-representations.

In the future, a stronger prime may reveal significant priming results. This may be particularly true for item categorization, which was marginally significant and in the hypothesized direction. Also researchers in the future may wish to include the complimentary primes to the counter-cultural primes. For studying priming with Brazilians, it may be especially important to gain a base rate for both individualist and collectivist primes, not only the individualist primes which were originally thought to act as a counter-cultural prime.

This study took varied perspectives in assessing the individualism-collectivism construct by analyzing patterns self-representations, cognitive categorization and emotional perception when attending to context. These multiple methods emphasize a broad approach to exploring cross-cultural differences necessary for an initial cross-cultural study between the U.S.A. and Brazil.

Table 1

*Means for Emotion Ratings on Validation of Cartoon Emotion Task*

Indented Emotion	Judgment					
	Anger		Sadness		Happiness	
	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>
Focal happy figure alone	1.3	1.1	1.4	1.0	8.4	1.8
Background happy group	1.2	0.8	1.6	1.3	8.5	1.7
Background sad group	2.4	1.8	9.0	1.4	1.2	0.8
Background angry group	9.2	1.4	3.4	2.5	1.1	0.5
Background neutral group	3.1	2.2	5.5	2.6	1.9	1.5

Note: The values represent mean for target emotion on a 10-point scale, 1 (*not at all*) to 10 (*completely true*).

Table 2

*Validation for Pen Choice*

Participant color choice	Pen presentation			$\chi^2$
	4 red/1 gray	4 gray/1 red	Total	
Majority	80 (76.8)	70 (80.6)	150	1.90
Minority	23 (26.1)	28 (27.4)	51	
Total	103	108	201	

Note: Observed frequencies with expected frequencies in parenthesis.

Table 3

*Frequencies for Demographic Variables by Country*

Variable	Brazil	U.S.A.	Total
<b>Gender</b>			
Male	41 (20.4%)	38 (18.9%)	79 (39.3%)
Female	60 (29.9%)	62 (30.8%)	122 (60.7%)
<b>Race</b>			
Asian	0 (0%)	9 (4.5%)	9 (4.5%)
Black	6 (3.0%)	19 (9.6%)	25 (12.6%)
Indigenous to America	4 (2.0%)	1 (0.5%)	5 (2.5%)
White	31 (15.7%)	56 (28.3%)	87 (43.9%)
Unknown	4 (2.0%)	0 (0%)	4 (2.0%)
Other	6 (3.0%)	9 (4.5%)	15 (7.6%)
Multiracial	47 (23.7%)	6 (3.0%)	53 (26.8%)
<b>Marital Status</b>			
Single	98 (48.8%)	92(45.8%)	190 (94.5%)
Other	3 (1.5%)	8 (4%)	11 (5.5%)
<b>Environment</b>			
Urban	92 (45.8%)	28 (13.9%)	120 (59.7%)
Suburban	7 (3.5%)	61 (30.3%)	68 (33.8%)

Rural	2 (1%)	11 (5.5%)	13 (6.5%)
Socio-economic status			
Low	5 (2.5%)	6 (3.0%)	11 (5.5%)
Medium	87 (43.3%)	88 (43.8%)	175 (87.1%)
High	9 (4.5%)	6 (3.0%)	15 (7.5%)

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Note: Values represent frequency of participants.

Table 4

*Table of Means for Cartoon Emotion Task by Country for all Emotion Ratings*

Background	Emotional judgment of focal figure													
	Anger				Sadness				Happiness					
	Brazil		U.S.A.		Brazil		U.S.A.		Brazil		U.S.A.		Total	
	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>
Happy	1.4	0.9	1.2	1.0	1.7	1.7	1.2	0.6	8.1	1.6	8.6	1.8	8.3	1.7
Sad	1.6	1.1	1.3	1.0	1.9	1.5	1.2	0.7	7.7	1.8	8.5	1.7	8.1	1.7
Angry	1.7	1.4	1.3	1.2	1.8	1.4	1.3	0.8	7.8	2.0	8.5	1.6	8.1	1.8
Neutral	1.6	1.4	1.9	1.6	1.9	1.6	1.3	0.8	7.7	1.8	8.5	1.5	8.1	1.8



Table 5

*Means for Nisbett Item Categorization*

Condition	Brazil	U.S.A.	Total
Counter-culture prime	4.5 (4.0)	4.3 (3.5)	4.4 (3.7)
No- Prime	5.6 (3.3)	3.0 (5.2)	4.2 (4.5)
Total	5.5 (3.7)	3.6 (4.4)	4.4 (4.1)

Note: Standard deviations are noted in parentheses. Higher scores reflect greater holistic responses.

Table 6

*Means for Twenty Statement Test*

Condition	Brazil	U.S.A.	Total
Counter-cultural prime	17.9 (3.2)	15.1 (3.6)	16.2 (3.6)
No- Prime	17.4 (3.3)	15.4 (3.5)	16.3 (3.6)
Total	17.6 (3.3)	15.3 (3.5)	16.4 (3.6)

Note. Standard deviations are noted in parentheses. The higher the score, the greater the collectivist response.

Table 7

*Frequencies for Pen Selection*

Pen color	Brazil			U.S.A.			Sample total
	No- Prime	counter-cultural prime	Total	No- Prime	Counter-cultural prime	Total	
Majority	31 (15.4%)	34 (16.9%)	65 (32.2%)	37 (18.4%)	39 (19.4%)	76 (37.8)	141 (70.1%)
Minority	20 (10.0 %)	16 (8.0%)	36 (17.9%)	13 (6.4%)	11 (5.4%)	36 (17.9%)	60 (30.0%)
Total	51 (25.3%)	50 (24.9%)	101 (50.2%)	50 (24.9%)	50 (24.9%)	100 (49.8%)	201 (100%)

Note: Values represent frequency of participants. No significant differences in pen choice in culture (Brazil, U.S.A.;  $\chi^2 [1, N = 201] = 3.3, p = .07$ ) or culture (Brazil, U.S.A.) x prime (no-prime, counter-cultural prime).

Table 8

*Correlations Among Variables*

Variable	1	2	3	4	5	6	7	8	9	10	11	12	13
1. Age	--												
2. Gender <sup>a, b</sup>	-.05	--											
3. Socioeconomic status <sup>c</sup>	-.02	-.18**	--										
4. Environment <sup>d</sup>	.06	.08	-.02	--									
5. Culture <sup>a, e</sup>	.02	.03	-.06	.59***	--								
6. Priming condition <sup>a, f</sup>	-.04	.04	-.03	-.01	.03	--							
7. Puzzle time	.09	.03	-.10	-.17*	.03	-.15*	--						
8. Focal figure with happy background <sup>g</sup>	-.04	.05	-.01	.07	.14*	.08	-.14	--					
9. Focal figure with sad background <sup>g</sup>	.04	.10	-.03	.15*	.22**	.04	-.08	.76***	--				
10. Focal figure with angry background <sup>g</sup>	.12	.07	-.04	.07	.20*	.05	-.08	.62***	.81***	--			
11. Focal figure with neutral background <sup>g</sup>	.11	.09	-.05	.10	.21	.11	-.10	.69***	.79***	.81***	--		

12. Nisbett Item Categorization <sup>h</sup>	-.03	.11	-.04	-.21**	-.18*	.03	.03	.05	.03	.02	.05	--	
13. Twenty Statement Test <sup>i</sup>	-.01	-.05	.06	.30***	.33***	-.06	-.03	.10	.08	.06	.06	-.06	--
14. Pen Selection Task <sup>a,j</sup>	.07	-.19** <sup>j</sup>	.04	.09	-.06	.07	-.18*	-.02	-.03	-.06	.02	-.06	.19*

<sup>a</sup> Correlations are point biserial. <sup>b</sup> Coded 1 = Male, 2 = Female. <sup>c</sup> Coded 1 = low, 2 = medium, 3 = high. <sup>d</sup> Coded 1 = urban, 2 = suburban, 3 = rural. <sup>e</sup> Coded 1 = Brazil, 2 = U.S.A. <sup>f</sup> Coded 0 = no-prime, 1 = counter-cultural prime. <sup>g</sup> Positive integers related to rated degree of happiness. <sup>h</sup> The higher the score, the greater collectivist responses. <sup>i</sup> The higher the score, the greater individualist responses. <sup>j</sup> Coded 1 = minority color 2 = majority color. <sup>j</sup>  $\chi^2 [1, N = 201] = 7.3, p < .01$ . \*  $p < .05$ . \*\*  $p < .01$ . \*\*\*  $p < .001$ .

Table 9

*Partial Correlations with Culture as Control*

Variable	1	2	3	4	5	6
1. Environment <sup>a</sup>	--					
2. Nisbett Item Categorization <sup>b</sup>	-.13	--				
3. Focal figure with happy background <sup>c</sup>	-.02	.08	--			
4. Focal figure with sad background <sup>c</sup>	.03	-.01	.76***	--		
5. Focal figure with angry background <sup>c</sup>	-.01	.07	-.03	-.06	--	
6. Focal figure with neutral background <sup>c</sup>	.02	.02	.09	-.11	.21*	--
7. Twenty Statement Test <sup>c</sup>	.14	.01	.06	.01	.02	.01

<sup>a</sup> Coded 1 = urban, 2 = suburban, 3 = rural. <sup>b</sup> Note: Positive integers related to collectivist responses. <sup>c</sup> Positive integers related to rated degree of happiness.

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

Table 10

*Hypothesis 1: Means for Cartoon Emotion Task: Judgements of Happiness with Various Emotional Background*

Background	No-prime				Counter-cultural prime				Main effects		Interaction effects	
	Brazilians		Americans		Brazilians		Americans		<i>F</i>	$\eta^2$	<i>F</i>	$\eta^2$
	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>				
Happy-happy	8.1	1.5	8.2	2.1	8.0	1.7	8.9	1.3	2.5	.020	2.2	.011
Happy-sad	7.7	1.9	8.2	1.9	7.6	1.7	8.7	1.7	10.1** *	.049	.99	.005
Happy-angry	7.6	1.9	8.4	1.7	7.9	1.7	8.5	1.6	7.9**	.038	.19	.001
Happy-neutral	7.6	2.2	8.2	2.1	7.8	1.7	8.7	1.4	9.0**	.044	.35	.002

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

Table 11

*Hypothesis 2: Analysis of Variance for Nisbett Item Categorization*

Source	<i>d.f.</i>	<i>F</i>	$\eta^2$	<i>p</i>
<i>Between subjects</i>				
Culture	1	6.02	.030	.015
Prime	1	0.16	.001	.689
Culture x Prime	1	3.87	.019	.051
<i>Within Subject</i>				
Error	196	(16.50)		

Note: Values enclosed in parentheses represent mean square errors.

Table 12

*Hypothesis 3: Analysis of Variance for Twenty Statement Test*

Source	<i>d.f.</i>	<i>F</i>	$\eta^2$	<i>p</i>
<i>Between subjects</i>				
Culture	1	23.93	.109	.001
Prime	1	0.88	.004	.349
Culture x Prime	1	0.18	.001	.670
<i>Within Subject</i>				
Error	195	(11.61)		

Note: Values enclosed in parentheses represent mean square errors

Table 13

*Hypothesis 4(a): Chi Square for Culture and Pen Selection Task*

Culture	Pen color choice		Total	$\chi^2$	$\phi$
	Minority	Majority			
Brazil	36 (30.1)	65 (70.9)	101	3.25 <sup>+</sup>	.127
U.S.A.	24 (29.9)	76 (70.1)	100		
Total	60	141	201		

Note: Observed frequencies with expected frequencies in parenthesis. <sup>+</sup> p > 05.

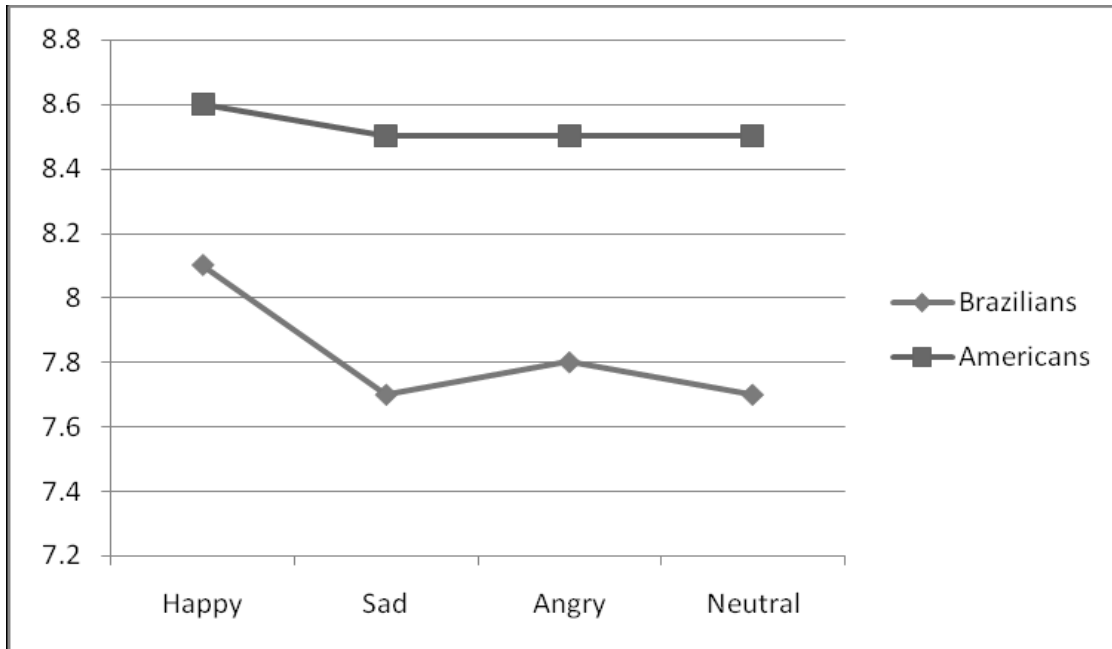


Table 14

*Hypothesis 4(b): Chi Square for Culture x Prime and Pen Selection Task*

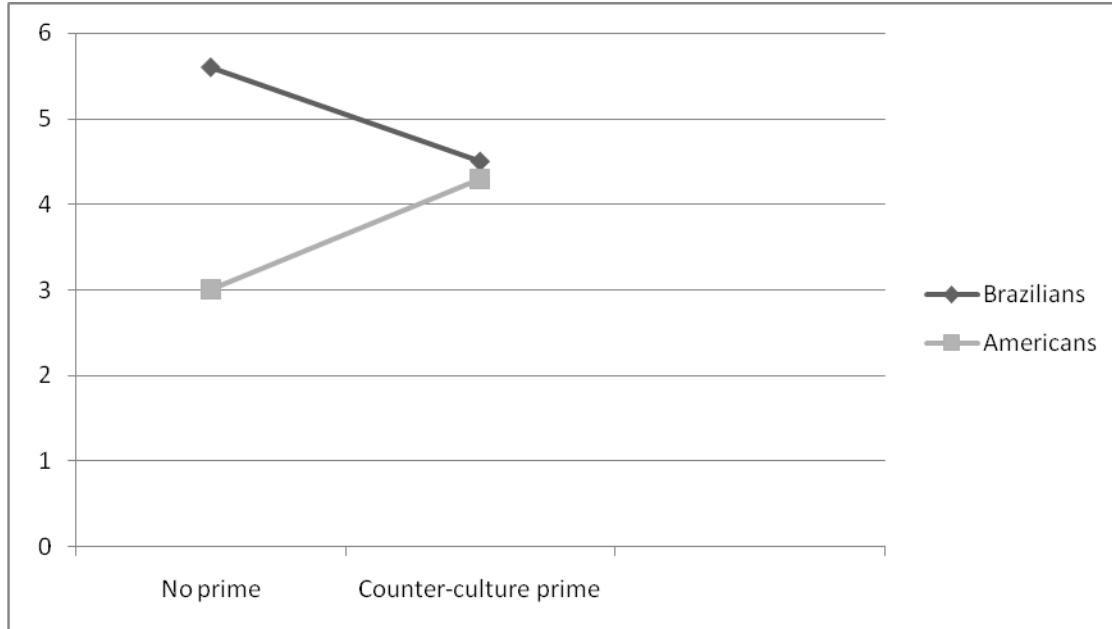
Culture	Pen color choice						Grand Total	$\chi^2$	$\phi$
	Minority			Majority					
	No-prime	Counter-cultural prime	Total	No-prime	Counter-cultural prime	Total			
Brazil	20 (15.6)	16 (14.5)	36 (30.1)	31 (34.2)	34 (36.7)	65	101	4.07 <sup>+</sup>	.142
U.S.A.	11 (15.4)	13 (14.4)	24 (29.9)	37 (33.8)	39 (36.3)	76	100		
Total	31	29	60	68	73	141	201		

Note: Observed frequencies with expected frequencies in parenthesis. <sup>+</sup> p > .05



Note: Scores reflect the amount of happiness of focal figure perceived by participant from 0 (*not at all*) to 10 (*completely true*).

*Figure 1.* Hypothesis 1: Brazilian and American cartoon emotion scores of happy focal figure with four backgrounds.



Note: Scores reflect summary scores calculated by subtracting the number of analytic responses from number of holistic responses. Higher scores reflect greater number of holistic/collectivist responses.

*Figure 2.* Hypothesis 2: Brazilian and American Nisbett Item Categorization Scores.

APPENDIX A  
CONSENT FORM

## University of North Texas Institutional Review Board

### Informed Consent Form

Before agreeing to participate in this research study, it is important that you read and understand the following explanation of the purpose, benefits and risks of the study and how it will be conducted.

**Title of Study:** Evaluation of Tasks for Younger Individuals

**Principal Investigator:** Raquel C. Hoersting a graduate student in the University of North Texas (UNT) Department of Psychology.

**Purpose of the Study:** You are being asked to participate in a research study which involves a series of tasks which were created with a 10-12 year-old population in mind. The purpose of the study is evaluate if such materials are able to measure that for which they were originally developed.

**Study Procedures:** You will be asked to complete four (4) tasks which include a jig-saw puzzle, questions related to objects, complete sentences and evaluate cartoons. It is estimated that these tasks should take about 20-30 minutes of your time.

**Foreseeable Risks:** There are no foreseeable risks involved in this study.

**Benefits to the Subjects or Others:** This study is not expected to be of any direct benefit to you. However, your participation might benefit psychologists and other mental health workers by expanding information available to them.

**Compensation for Participants:** You will receive extra credit through the SONA system or in accordance with your professor's policies. You may also write research summaries in lieu of participation and earn equivalent SONA points (see student's "research participation and pool policies" at [www.psyc.unt.edu/undergradresearch](http://www.psyc.unt.edu/undergradresearch) for more information). You will also choose and keep a pen for your participation.

**Procedures for Maintaining Confidentiality of Research Records:** Your confidentiality is important. Signed consent forms and coded survey results will be kept in separate locations. The confidentiality of your individual information will be maintained in any publications or presentations regarding this study.

**Questions about the Study:** If you have any questions about the study, you may contact Raquel Hoersting at telephone number (XXX) XXX-XXXX or the faculty advisor, Dr. Russel D. Clark III, UNT Department of Psychology at telephone number (XXX) XXX-XXXX.

**Review for the Protection of Participants:** This research study has been reviewed and approved by the UNT Institutional Review Board (IRB). The UNT IRB can be contacted at (XXX) XXX-XXXX with any questions regarding the rights of research subjects.

**Research Participants' Rights:** Your signature below indicates that you have read or have had read to you all of the above and that you confirm all of the following:

Raquel Hoersting (or Kyle Bewsey) has explained the study to you and answered all of your questions. You have been told the possible benefits and the potential risks and/or discomforts of the study.

You understand that you do not have to take part in this study, and your refusal to participate or your decision to withdraw will involve no penalty or loss of rights or benefits. The study personnel may choose to stop your participation at any time.

You understand why the study is being conducted and how it will be performed.

You understand your rights as a research participant and you voluntarily consent to participate in this study.

You have been told you will receive a copy of this form.

\_\_\_\_\_

Printed Name of Participant

\_\_\_\_\_

Signature of Participant

\_\_\_\_\_

Date

**For the Principal Investigator:** I certify that I have reviewed the contents of this form with the participant signing above. I have explained the possible benefits and the potential risks and/or discomforts of the study. It is my opinion that the participant understood the explanation.

\_\_\_\_\_

Signature of Principal Investigator or Designee

\_\_\_\_\_

Date

APPENDIX B  
PUZZLE PRIMING INSTRUMENT



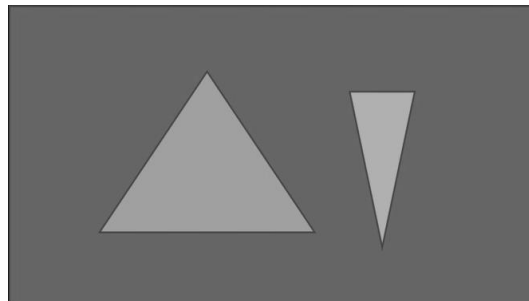
Counter-cultural prime for Brazilian participants



Counter-cultural prime for American participants



No-prime for both American and Brazilian participants



APPENDIX C  
CARTOON EMOTION TASK

Happy focal figure with happy background



Happy focal figure with angry background



Happy focal figure with sad background



Happy focal figure with neutral background



APPENDIX D

VALIDATION IMAGES FOR CARTOON EMOTION TASK

Happy focal figure



Angry background



Happy background



Neutral background



Sad background



APPENDIX E  
DEMOGRAPHIC QUESTIONNAIRE

Directions: Please provide the following information

1. Age
2. Gender
3. Current Marital Status:
  - a. Single
  - b. Engaged
  - c. Married
  - d. living with partner
  - e. widowed
  - f. divorced
  - g. separated
4. What is your highest level of education?
  - a. Less than secondary school (high school or equivalent)
  - b. Secondary school graduate (high school or equivalent)
  - c. By exam (GED or similar qualifying exams)
  - d. Some university (post-secondary education, college, associate degree, technical degree)
  - e. University graduate (College of equivalent)
  - f. Masters degree or equivalent
  - g. Doctorate (PhD, EdD, MD, JD)
  - h. Other
5. What was your mother's occupation while you were growing up?

6. What was your father's occupation while you were growing up?
7. How would you describe your social-economic status?
  - a. Low
  - b. Medium
  - c. high
8. Which of the following best describes the area you live in?
  - a. Urban
  - b. Suburban
  - c. Rural

We would like to know some information about you and your biological parents' race, ethnicity, and cultural orientation. Race refers to a general, more inclusive category based on genetics such as Asian, Black, Native American or Indigenous, White or Caucasian, Pacific Islander, etc. Please use the following numbers that correspond with each category:

- (1) Asian or Asian American, including Chinese, Japanese, South Asian
- (2) Black or African Heritage
- (3) Indigenous to South or Central America, Native American/American Indian
- (4) White, Caucasian, Anglo
- (5) Asian Pacific Islander or Aboriginal
- (6) Unknown
- (7) Other

1. My racial heritage is: (check all that apply using the numbers above)



2. My father's race is: (check all that apply using the numbers above)

3. My mother's race is: (check all that apply using the numbers above)

Ethnicity is more specific. It refers to a family's cultural heritage such as Jewish, Cherokee, Navajo, Mexican, Puerto Rican, South Korean, Japanese, Kenyan, African-American, Italian, Irish, etc. Since people can have more than one race and/or ethnicity, list all that apply. If you do not have this information, please answer Don't Know.

1. How would you describe yourself ethnically? (List all)

2. My father's ethnicity is: (List all)

3. My mother's ethnicity is: (List all)

APPENDIX F  
DEBRIEFING FORM

## University of North Texas Psychology Department

### Debriefing Form

#### **Thank you for participating in this study.**

In this study you were asked to perform various tasks. Although these tasks were prepared with 10-12 year-olds in mind, the primary purpose of this study was to explore collective behavior and cognitions of Americans and Brazilians. The secondary purpose of this study was to investigate if priming plays a role in activating either collective or individual behavior. In general, priming involves leading individuals in tasks in which they themselves are not made aware of the researchers' intent. During the study you were asked to put together a puzzle which was designed to be the priming task. You were randomly assigned to either a control group or an experimental group for the American sample. The other tasks which followed were designed measure collectivist or individualist behavior.

Individualist and collectivist dimensions describe the relationship between the individual and their social surroundings. In individualist cultures, people tend to think of themselves as separate and distinct social beings who are motivated by their own preferences and needs. In collectivist cultures individuals see themselves and their identity as connected or belonging to a group. The purpose of this study was to explore if Brazilians, like other collective peoples, display more collective behavior and cognitions than Americans. If Brazilians are like other collectivist peoples, they should identify

themselves are more group and other oriented. They should be more influenced in the facial emotion task by the facial expressions of the four persons in the background, they should be more likely to choose the common color pen than Americans and see objects in more relational ways.

Both American and Brazilian participants were assigned either to a no-prime condition or a counter-culture prime condition. It was expected that unprimed Brazilian participants would display more collectivist patterns on these tasks than Americans. It was expected that individualist primed Brazilian participants would display individualist patterns that are similar to unprimed Americans and that collectivist primed American participants would display collective patterns that are similar to unprimed Brazilians.

We hope that the information gathered from this study will be helpful for training more culturally sensitive psychologists and mental health workers in the future.

**Questions about the Study:** If you have any questions about the study, you may contact Raquel Hoersting at telephone number (XXX) XXX-XXXX or the faculty advisor, Dr. Russel D. Clark III, UNT Department of Psychology at telephone number (XXX) XXX-XXXX.

**Whom to contact about your rights in this experiment:** This research study has been reviewed and approved by the UNT Institutional Review Board (IRB). The UNT IRB

can be contacted at (940) 565-3940 with any questions regarding the rights of research subjects.

**If you feel that you are experiencing adverse consequences from this study:** Please contact the UNT Counseling and Testing Services at (XXX) XXX-XXXX.

Remember that all data collected in this study will be combined and analyzed in a way that your responses will not be singled out. You will remain anonymous.

Thank you again for participating and helping with this study. However, **please do not show this debriefing sheet or discuss any aspect of the study with other students.** In

order for this study to work, it is important that future participants do not have this information or any particular expectations. Thank you!

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